

KENTUCKY

Volume 3 **40 CFR 52.920(d)**

State Implementation Plan **Compilation**

Federally Approved Source Specific Requirements
as of June 1, 2021

Compiled by: EPA, Region 4
Atlanta Federal Center
Air Planning Branch
61 Forsyth Street, S.W.
Atlanta, Georgia 30303-8960

Volume 3
40 CFR 52.920(d)
AIR POLLUTION CONTROL LAWS AND REGULATIONS FOR KENTUCKY
SOURCE-SPECIFIC REQUIREMENTS

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JACKIE SWIGART
SECRETARY



JOHN Y. BROWN, JR.
GOVERNOR

COMMONWEALTH OF KENTUCKY
DEPARTMENT FOR NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION
OFFICE OF THE SECRETARY
FRANKFORT, KENTUCKY 40601
TELEPHONE (502) 564-3350

September 8, 1980

Ms. Rebecca Hanmer
Regional Administrator
U.S. Environmental Protection Agency
Region IV
345 Courtland Street, N.E.
Atlanta, Georgia 30308

RE: Kentucky Utilities Company SIP Revision

Dear Ms. Hanmer:

In compliance with the Clean Air Act Amendments of 1977, a revision to the State Implementation Plan for the attainment and maintenance of the National Ambient Air Quality Standards as it applies to the Kentucky Utilities Company, Green River Station, in Muhlenberg County is hereby submitted to the U.S. Environmental Protection Agency. This revision has been prepared in accordance with 40 CFR 51 and the guidance documents issued by the U.S. Environmental Protection Agency.

This letter should serve to certify that all procedural requirements for adoption of this plan by the Commonwealth of Kentucky have been met. Opportunity for public participation and input has been provided through a public hearing (transcript attached). The revised emission limitations for the plant's boilers have been duly adopted by this Department as per the provisions of Regulation 401 KAR 50:055, Section 6.

It is requested that the U.S. Environmental Protection Agency favorably consider the approval of this revision and publish same in the Federal Register. If you have any questions, please contact Mr. Norman E. Schell, Director, Division of Air Pollution Control.

Sincerely,

Jackie Swigart
Jackie Swigart,
Secretary

JS:cm

Enclosures: Public Hearing Transcript
SIP Revision
Public Hearing Publication Proof

cc: Kentucky Utilities

JACKIE SWIGART
Secretary



JOHN Y. BROWN, JR.
Governor

COMMONWEALTH OF KENTUCKY
DEPARTMENT FOR NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION
BUREAU OF ENVIRONMENTAL PROTECTION
DIVISION OF AIR POLLUTION CONTROL
WEST FRANKFORT OFFICE COMPLEX
1050 U.S. 127 BYPASS SOUTH
FRANKFORT, KENTUCKY 40601

December 1, 1980

Ms. Rebecca Hanmer
Regional Administrator
U.S. Environmental Protection Agency
Region IV
345 Courtland Street, N.E.
Atlanta, Georgia 30308

RE: Kentucky Utilities Company SIP Revision

Dear Ms. Hanmer:

This letter is written in response to Mr. Jerry Preston's November 13, 1980 telephone request for a draft operating permit which will be proposed for issuance to Kentucky Utilities - Green River Station following the conclusion of a State Implementation Plan (SIP) revision. The requested draft permit copy is enclosed. Please consider this draft permit as a supplement to the original SIP revision request sent to you on September 9, 1980.

This Division will not issue the operating permit to Kentucky Utilities - Green River Station until they show compliance for all regulated points of emissions at their power plant. If Mr. Preston has any questions regarding this matter, he may contact Mr. Roger S. Cook at (502) 564-6844.

Sincerely,

Norman E. Schell
Norman E. Schell, Director

NES:RSC:sm/1

Enclosure - Draft Permit

cc: Jackie Swigart



Kentucky Department for Natural Resources and Environmental Protection

Division of Air Pollution Control

DRAFT COPY

Kentucky Utilities Company
One Quality Street
Lexington, Kentucky 40507

RE: Green River Power Station.

Pursuant to your application received by this office on June 17, 1980 the Division of Air Pollution, by authority of Kentucky Revised Statutes Chapter 224, authorizes the issuance of this operating permit for the operation of the equipment specified herein in accordance with the plans, specifications, and other information submitted with your application. This permit is subject to all conditions and operating limitations contained herein.

<u>Point of Emission</u>	<u>Affected Facility</u>	<u>Conditions</u>
01 & 02 (1, 2, & 3)	Boilers 1, 2 and 3 (Units 1 and 2)	927.5 mm BTU/hr maximum inupt.
03 (4)	Boiler 4 (Unit 3)	976 mm BTU/hr maximum input.
04 (5)	Boiler 5 (Unit 4)	1260 mm BTU/hr maximum input.
05 (-)	Coal Handling	The annual volume of coal shall not exceed 1,204,500 tons.

GENERAL CONDITIONS:

1. Malfunction and shut down of air pollution control equipment shall be promptly reported to the Division in accordance with Regulation 401 KAR 50:055, Section 1.
2. Emissions from Units 1, 2, 3 and 4 shall be monitored and reported in accordance with Regulation 401 KAR 61:015, Section 6.
3. Fugitive emissions shall be controlled in accordance with Regulation 401 KAR 61:010.

(GENERAL CONDITIONS CONTINUED ON REVERSE SIDE)

DRAFT COPY

No deviation from the plans and specifications submitted with your application or the conditions specified herein is permitted, unless authorized in writing by the Division of Air Pollution. This permit shall become null and void at any time the terms and conditions contained herein are violated. All rights of inspection by the representatives of this Division of Air Pollution are reserved. Responsibility of satisfactory conformance to all Air Pollution Control Regulations must be borne by the permittee.

PERMIT NUMBER: 0-80-357

Issued this _____ day of _____ 19____

FILE NUMBER: 072-2960-0001

REGION: Paducah/Cairo

COUNTY: Muhlenberg

SIC CODE: 4911

Jackie Swigart
Secretary, Department for Natural Resources and Environmental Protection

Director, Division of Air Pollution Control

50.

NAME	D (G/SEC)	HP (M)	TS (DEG-K)	VS (M/SEC)	D (M)	VF (M**3/SEC)	R (KM)	S (KM)
KU- GREEN RIVER-STACKK1	115.50	50.3	352.2	9.8	4.88	0.0	480.200	4135.000
KU- GREEN RIVER-STACKK2	639.50	27.7	422.0	17.3	3.44	0.0	489.200	4135.000
KU- GREEN RIVER-STACKK3	825.50	75.3	466.0	26.3	2.72	0.0	489.200	4135.000
IVA PARADISE - STACKK1	732.50	182.9	338.0	19.3	7.00	0.0	501.900	4123.848
IVA PARADISE - STACKK2	732.50	182.9	338.0	19.3	7.00	0.0	501.900	4123.848
IVA PARADISE - STACKK3	732.50	243.8	433.0	31.3	8.10	0.0	501.000	4123.699

NO.	RECEP (SEC(KM))	UR S (M**3)	SREC(KM)	Z (M)	KAD	SUR	UU	AI	DIS	1.400	URG	489.200	4135.000
1.	428.697	4135.859		U.0	KAD	SUR	UU	AI	DIS	1.400	URG	489.200	4135.000
2.	429.318	4135.922		U.0	KAD	SUR	UU	AI	DIS	1.400	URG	489.200	4135.000
3.	437.679	4136.034		U.0	KAD	SUR	UU	AI	DIS	1.400	URG	489.200	4135.000
4.	447.660	4136.143		U.0	KAD	SUR	UU	AI	DIS	1.400	URG	489.200	4135.000
5.	447.681	4136.143		U.0	KAD	SUR	UU	AI	DIS	1.400	URG	489.200	4135.000
6.	437.773	4136.168		U.0	KAD	SUR	UU	AI	DIS	1.400	URG	489.200	4135.000
7.	437.625	4136.230		U.0	KAD	SUR	UU	AI	DIS	1.400	URG	489.200	4135.000
8.	437.525	4136.309		U.0	KAD	SUR	UU	AI	DIS	1.400	URG	489.200	4135.000
9.	437.465	4136.352		U.0	KAD	SUR	UU	AI	DIS	1.400	URG	489.200	4135.000
10.	437.337	4136.414		U.0	KAD	SUR	UU	AI	DIS	1.400	URG	489.200	4135.000
11.	437.309	4136.477		U.0	KAD	SUR	UU	AI	DIS	1.400	URG	489.200	4135.000
12.	437.230	4136.539		U.0	KAD	SUR	UU	AI	DIS	1.400	URG	489.200	4135.000

59	487.937	4136.070	U.0	AI	DIS	1.973	URG	485.204	4135.00
60	487.932	4136.203	U.0	AI	DIS	1.973	URG	485.204	4135.00
61	487.788	4136.271	U.0	AI	DIS	1.973	URG	485.204	4135.00
62	487.714	4136.230	U.0	AI	DIS	2.000	URG	485.204	4135.00
63	487.639	4136.406	U.0	AI	DIS	2.000	URG	485.204	4135.00
64	487.565	4136.403	U.0	AI	DIS	2.000	URG	485.204	4135.00
65	487.491	4136.503	U.0	AI	DIS	2.000	URG	485.204	4135.00
66	487.416	4136.672	U.0	AI	DIS	2.000	URG	485.204	4135.00
67	487.342	4136.738	U.0	AI	DIS	2.000	URG	485.204	4135.00
68	487.268	4136.813	U.0	AI	DIS	2.000	URG	485.204	4135.00
69	487.193	4136.953	U.0	AI	DIS	2.000	URG	485.204	4135.00
70	487.118	4136.020	U.0	AI	DIS	1.973	URG	485.204	4135.00
71	487.043	4136.070	U.0	AI	DIS	1.973	URG	485.204	4135.00
72	486.968	4136.070	U.0	AI	DIS	1.973	URG	485.204	4135.00
73	486.893	4136.070	U.0	AI	DIS	1.973	URG	485.204	4135.00
74	486.818	4136.070	U.0	AI	DIS	1.973	URG	485.204	4135.00
75	486.743	4136.070	U.0	AI	DIS	1.973	URG	485.204	4135.00
76	486.668	4136.070	U.0	AI	DIS	1.973	URG	485.204	4135.00
77	486.593	4136.070	U.0	AI	DIS	1.973	URG	485.204	4135.00
78	486.518	4136.070	U.0	AI	DIS	1.973	URG	485.204	4135.00
79	486.443	4136.070	U.0	AI	DIS	1.973	URG	485.204	4135.00
80	486.368	4136.070	U.0	AI	DIS	1.973	URG	485.204	4135.00
81	486.293	4136.070	U.0	AI	DIS	1.973	URG	485.204	4135.00
82	486.218	4136.070	U.0	AI	DIS	1.973	URG	485.204	4135.00
83	486.143	4136.070	U.0	AI	DIS	1.973	URG	485.204	4135.00
84	486.068	4136.070	U.0	AI	DIS	1.973	URG	485.204	4135.00
85	485.993	4136.070	U.0	AI	DIS	1.973	URG	485.204	4135.00
86	485.918	4136.070	U.0	AI	DIS	1.973	URG	485.204	4135.00
87	485.843	4136.070	U.0	AI	DIS	1.973	URG	485.204	4135.00
88	485.768	4136.070	U.0	AI	DIS	1.973	URG	485.204	4135.00
89	485.693	4136.070	U.0	AI	DIS	1.973	URG	485.204	4135.00
90	485.618	4136.070	U.0	AI	DIS	1.973	URG	485.204	4135.00
91	485.543	4136.070	U.0	AI	DIS	1.973	URG	485.204	4135.00
92	485.468	4136.070	U.0	AI	DIS	1.973	URG	485.204	4135.00
93	485.393	4136.070	U.0	AI	DIS	1.973	URG	485.204	4135.00
94	485.318	4136.070	U.0	AI	DIS	1.973	URG	485.204	4135.00
95	485.243	4136.070	U.0	AI	DIS	1.973	URG	485.204	4135.00
96	485.168	4136.070	U.0	AI	DIS	1.973	URG	485.204	4135.00
97	485.093	4136.070	U.0	AI	DIS	1.973	URG	485.204	4135.00
98	485.018	4136.070	U.0	AI	DIS	1.973	URG	485.204	4135.00
99	484.943	4136.070	U.0	AI	DIS	1.973	URG	485.204	4135.00
100	484.868	4136.070	U.0	AI	DIS	1.973	URG	485.204	4135.00



(KYPIMPT.V79) KENTUCKY UTILITIES-GREEN RIVER 1970 DAY 149 24 HR
 M M M M E T E J F U L U G Y M M M K S T H L (M) I (DEG-K) P (MB)
 NO. THETA(DEC) U (M/SEC) 5 132J. 295.0 967.0
 M M M R E C E P T O R N U M B E R M M M
 1 118. 2.0 5 132J. 295.0 967.0
 SOURCE PARIAL CONCENATIONS (G/M**3)
 1 2 3 4 5 6 7 8 9 10 11 12

(KYFMTPT.V79) KENTUCKY UTILITIES-GREEN RIVER 1970 DAY 149 24 HR

AVERAGE CONCENTRATIONS FOR 24 HOURS.

MAXIMUM AVERAGE CONCENTRATION WAS 5.0289E-04
 FOUND AT RECEPTOR # 82

RECEPTOR NUMBER

SOURCE	1*	2*	3*	4*	5*	6*	7*	8*	9*	10*	11*	12*
KU-GREE	6.621E-05	6.378E-05	6.8174E-05	6.634E-05	6.482E-05	6.364E-05	6.211E-05	5.904E-05	5.806E-05	5.641E-05	5.496E-05	5.352E-05
KU-GREE	2.423E-05	1.431E-04	1.133E-04	1.191E-04	1.251E-04	1.304E-04	1.347E-04	1.351E-04	1.374E-04	1.393E-04	1.403E-04	1.417E-04
KU-GREE	3.493E-05	4.215E-05	4.940E-05	5.539E-05	6.147E-05	6.752E-05	7.290E-05	7.932E-05	8.593E-05	9.239E-05	9.794E-05	1.0218E-04
IVA-PARA	1.234E-05	1.281E-05	1.374E-05	1.460E-05	1.538E-05	1.608E-05	1.674E-05	1.730E-05	1.779E-05	1.822E-05	1.851E-05	1.879E-05
IVA-PARA	1.603E-05	1.671E-05	1.710E-05	1.725E-05	1.731E-05	1.741E-05	1.751E-05	1.760E-05	1.770E-05	1.782E-05	1.790E-05	1.799E-05

TOTAL CONCENTRATION (67MRR3)

2.427E-04	2.606E-04	2.761E-04	2.846E-04	2.959E-04	3.060E-04	3.139E-04	3.154E-04	3.204E-04	3.245E-04	3.274E-04	3.299E-04
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SOURCE	51.	52.	53.	54.	55.	56.	57.	58.	59.	60.
KU- GREE	8.912E-05	8.691E-05	8.464E-05	7.984E-05	7.729E-05	7.511E-05	7.286E-05	7.036E-04	1.027E-04	1.027E-04
KU- GREF	2.072E-04	2.070E-04	2.069E-04	2.068E-04	2.067E-04	2.066E-04	2.065E-04	1.873E-04	1.868E-04	1.863E-04
IVA PARA	1.126E-04	1.194E-04	1.254E-04	1.304E-04	1.354E-04	1.404E-04	1.454E-04	1.504E-04	1.554E-04	1.604E-04
IVA PARA	1.334E-05	1.374E-05	1.414E-05	1.454E-05	1.494E-05	1.534E-05	1.574E-05	1.614E-05	1.654E-05	1.694E-05
IVA PARA	1.774E-05	1.794E-05	1.814E-05	1.834E-05	1.854E-05	1.874E-05	1.894E-05	1.914E-05	1.934E-05	1.954E-05
TOTAL CONCENTRATION (G/M**3)										

SOURCE	61.	62.	63.	64.	65.	66.	67.	68.	69.	70.	71.	72.
KU- GREE	9.607E-05	9.634E-05	9.661E-05	9.688E-05	9.715E-05	9.742E-05	9.769E-05	9.796E-05	9.823E-05	9.850E-05	9.877E-05	9.904E-05
KU- GREF	2.072E-04	2.070E-04	2.069E-04	2.068E-04	2.067E-04	2.066E-04	2.065E-04	2.064E-04	2.063E-04	2.062E-04	2.061E-04	2.060E-04
IVA PARA	1.437E-05	1.442E-05	1.447E-05	1.452E-05	1.457E-05	1.462E-05	1.467E-05	1.472E-05	1.477E-05	1.482E-05	1.487E-05	1.492E-05
IVA PARA	1.774E-05	1.774E-05	1.774E-05	1.774E-05	1.774E-05	1.774E-05	1.774E-05	1.774E-05	1.774E-05	1.774E-05	1.774E-05	1.774E-05
TOTAL CONCENTRATION (G/M**3)												

SOURCE	73.	74.	75.	76.	77.	78.	79.	80.	81.	82.	83.	84.
KU- GREE	1.042E-04	1.035E-04	1.028E-04	1.021E-04	1.014E-04	1.007E-04	1.000E-04	9.93E-05	9.86E-05	9.79E-05	9.72E-05	9.65E-05
KU- GREF	2.072E-04	2.070E-04	2.069E-04	2.068E-04	2.067E-04	2.066E-04	2.065E-04	2.064E-04	2.063E-04	2.062E-04	2.061E-04	2.060E-04
IVA PARA	1.427E-05	1.422E-05	1.417E-05	1.412E-05	1.407E-05	1.402E-05	1.397E-05	1.392E-05	1.387E-05	1.382E-05	1.377E-05	1.372E-05
IVA PARA	1.774E-05	1.774E-05	1.774E-05	1.774E-05	1.774E-05	1.774E-05	1.774E-05	1.774E-05	1.774E-05	1.774E-05	1.774E-05	1.774E-05
TOTAL CONCENTRATION (G/M**3)												

SOURCE	85.	86.	87.	88.	89.	90.	91.	92.	93.	94.	95.	96.
KU- GREE	8.912E-05	8.691E-05	8.464E-05	7.984E-05	7.729E-05	7.511E-05	7.286E-05	7.036E-04	1.027E-04	1.027E-04	1.027E-04	1.027E-04
KU- GREF	2.072E-04	2.070E-04	2.069E-04	2.068E-04	2.067E-04	2.066E-04	2.065E-04	2.064E-04	2.063E-04	2.062E-04	2.061E-04	2.060E-04
IVA PARA	1.126E-04	1.194E-04	1.254E-04	1.304E-04	1.354E-04	1.404E-04	1.454E-04	1.504E-04	1.554E-04	1.604E-04	1.654E-04	1.704E-04
IVA PARA	1.334E-05	1.374E-05	1.414E-05	1.454E-05	1.494E-05	1.534E-05	1.574E-05	1.614E-05	1.654E-05	1.694E-05	1.734E-05	1.774E-05
IVA PARA	1.774E-05	1.794E-05	1.814E-05	1.834E-05	1.854E-05	1.874E-05	1.894E-05	1.914E-05	1.934E-05	1.954E-05	1.974E-05	1.994E-05
TOTAL CONCENTRATION (G/M**3)												

59.	487.577	4136.070	U.0	RAD 312.00	AI	0000	1.973	URG	487.577	4136.070
60.	487.577	4136.070	U.0	KAD 312.00	AI	0000	1.973	URG	487.577	4136.070
61.	487.577	4136.070	U.0	KAD 312.00	AI	0000	1.973	URG	487.577	4136.070
62.	487.577	4136.070	U.0	RAD 312.00	AI	0000	1.973	URG	487.577	4136.070
63.	487.577	4136.070	U.0	RAD 312.00	AI	0000	2.000	URG	487.577	4136.070
64.	487.577	4136.070	U.0	RAD 312.00	AI	0000	2.000	URG	487.577	4136.070
65.	487.577	4136.070	U.0	RAD 312.00	AI	0000	2.000	URG	487.577	4136.070
66.	487.577	4136.070	U.0	RAD 312.00	AI	0000	2.000	URG	487.577	4136.070
67.	487.577	4136.070	U.0	RAD 312.00	AI	0000	2.000	URG	487.577	4136.070
68.	487.577	4136.070	U.0	RAD 312.00	AI	0000	2.000	URG	487.577	4136.070
69.	487.577	4136.070	U.0	RAD 312.00	AI	0000	2.000	URG	487.577	4136.070
70.	487.577	4136.070	U.0	RAD 312.00	AI	0000	2.000	URG	487.577	4136.070
71.	487.577	4136.070	U.0	RAD 312.00	AI	0000	2.000	URG	487.577	4136.070
72.	487.577	4136.070	U.0	RAD 312.00	AI	0000	2.000	URG	487.577	4136.070
73.	487.577	4136.070	U.0	RAD 312.00	AI	0000	2.000	URG	487.577	4136.070
74.	487.577	4136.070	U.0	RAD 312.00	AI	0000	2.000	URG	487.577	4136.070
75.	487.577	4136.070	U.0	RAD 312.00	AI	0000	2.000	URG	487.577	4136.070
76.	487.577	4136.070	U.0	RAD 312.00	AI	0000	2.000	URG	487.577	4136.070
77.	487.577	4136.070	U.0	RAD 312.00	AI	0000	2.000	URG	487.577	4136.070
78.	487.577	4136.070	U.0	RAD 312.00	AI	0000	2.000	URG	487.577	4136.070
79.	487.577	4136.070	U.0	RAD 312.00	AI	0000	2.000	URG	487.577	4136.070
80.	487.577	4136.070	U.0	RAD 312.00	AI	0000	2.000	URG	487.577	4136.070
81.	487.577	4136.070	U.0	RAD 312.00	AI	0000	2.000	URG	487.577	4136.070
82.	487.577	4136.070	U.0	RAD 312.00	AI	0000	2.000	URG	487.577	4136.070
83.	487.577	4136.070	U.0	RAD 312.00	AI	0000	2.000	URG	487.577	4136.070
84.	487.577	4136.070	U.0	RAD 312.00	AI	0000	2.000	URG	487.577	4136.070
85.	487.577	4136.070	U.0	RAD 312.00	AI	0000	2.000	URG	487.577	4136.070
86.	487.577	4136.070	U.0	RAD 312.00	AI	0000	2.000	URG	487.577	4136.070
87.	487.577	4136.070	U.0	RAD 312.00	AI	0000	2.000	URG	487.577	4136.070
88.	487.577	4136.070	U.0	RAD 312.00	AI	0000	2.000	URG	487.577	4136.070
89.	487.577	4136.070	U.0	RAD 312.00	AI	0000	2.000	URG	487.577	4136.070
90.	487.577	4136.070	U.0	RAD 312.00	AI	0000	2.000	URG	487.577	4136.070
91.	487.577	4136.070	U.0	RAD 312.00	AI	0000	2.000	URG	487.577	4136.070
92.	487.577	4136.070	U.0	RAD 312.00	AI	0000	2.000	URG	487.577	4136.070
93.	487.577	4136.070	U.0	RAD 312.00	AI	0000	2.000	URG	487.577	4136.070
94.	487.577	4136.070	U.0	RAD 312.00	AI	0000	2.000	URG	487.577	4136.070
95.	487.577	4136.070	U.0	RAD 312.00	AI	0000	2.000	URG	487.577	4136.070
96.	487.577	4136.070	U.0	RAD 312.00	AI	0000	2.000	URG	487.577	4136.070
97.	487.577	4136.070	U.0	RAD 312.00	AI	0000	2.000	URG	487.577	4136.070
98.	487.577	4136.070	U.0	RAD 312.00	AI	0000	2.000	URG	487.577	4136.070
99.	487.577	4136.070	U.0	RAD 312.00	AI	0000	2.000	URG	487.577	4136.070
00.	487.577	4136.070	U.0	RAD 312.00	AI	0000	2.000	URG	487.577	4136.070



(KYPTMPT.V70) KENTUCKY UTILITIES-GREEN RIVER 1970 DAY 149 24 HR
 * * * * * M E T E R U L O G Y * * * * *
 NO. THETA(UEG) U (M/SEC) KST HL (M) T (DEC-K) P (MR)
 1. 118. 2.0 5 132.0 29.0 967.0
 * * * * * R E C E P T O R N U M B E R * * * * *

(KYFTMPT-179) KENTUCKY UTILITIES-GREEN RIVER 1970 DAY 149 24 HR

AVERAGE CONCENTRATIONS FOR 24 HOURS.

MAXIMUM AVERAGE CONCENTRATION WAS 5.089E-04
 FOUND AT RECEPTOR # 82

RECEPTOR NUMBER

1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12.

SOURCE PARTIAL CONCENTRATIONS (G/M³)

| | | | | | | | | | | | |
|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| KU - GREE | 6.831E-05 | 6.878E-05 | 6.814E-05 | 6.482E-05 | 6.364E-05 | 6.211E-05 | 5.904E-05 | 5.406E-05 | 5.241E-05 | 5.496E-05 | 5.352E-05 |
| KU - GREE | 2.752E-05 | 1.051E-04 | 1.139E-04 | 1.251E-04 | 1.304E-04 | 1.374E-04 | 1.351E-04 | 1.271E-04 | 1.339E-04 | 1.442E-04 | 1.477E-04 |
| KU - GREE | 3.405E-05 | 4.219E-05 | 4.949E-05 | 5.509E-05 | 6.172E-05 | 7.090E-05 | 7.632E-05 | 8.363E-05 | 8.939E-05 | 8.794E-05 | 9.070E-05 |
| IVA PARA | 1.337E-05 | 1.381E-05 | 1.374E-05 | 1.358E-05 | 1.351E-05 | 1.374E-05 | 1.350E-05 | 1.329E-05 | 1.322E-05 | 1.315E-05 | 1.335E-05 |
| IVA PARA | 1.639E-05 | 1.730E-05 | 1.774E-05 | 1.858E-05 | 1.951E-05 | 2.064E-05 | 2.190E-05 | 2.329E-05 | 2.464E-05 | 2.515E-05 | 2.590E-05 |
| TVA PARA | 1.639E-05 | 1.730E-05 | 1.774E-05 | 1.858E-05 | 1.951E-05 | 2.064E-05 | 2.190E-05 | 2.329E-05 | 2.464E-05 | 2.515E-05 | 2.590E-05 |

TOTAL CONCENTRATION (G/M³)

| | | | | | | | | | | | |
|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 2.427E-04 | 2.606E-04 | 2.761E-04 | 2.846E-04 | 2.950E-04 | 3.060E-04 | 3.138E-04 | 3.154E-04 | 3.204E-04 | 3.245E-04 | 3.274E-04 | 3.299E-04 |
|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|

(KYP1MPT.V79) KENTUCKY UTILITIES-GREEN RIVER 197J DAY 149 24 HR

| SOURCE | 51. | 52. | 53. | 54. | 55. | 56. | 57. | 58. | 59. | 60. |
|------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| KU- GREE | 8.912E-05 | 8.691E-05 | 8.464E-05 | 7.984E-05 | 7.729E-05 | 7.531E-05 | 1.043E-04 | 1.036E-04 | 1.027E-04 | 1.027E-04 |
| KU- GREE | 2.032E-04 | 2.042E-04 | 2.070E-04 | 2.092E-04 | 2.095E-04 | 2.095E-04 | 2.095E-04 | 2.095E-04 | 2.095E-04 | 2.095E-04 |
| IVA PAPA | 1.384E-05 | 1.379E-05 | 1.374E-05 | 1.369E-05 | 1.364E-05 | 1.359E-05 | 1.354E-05 | 1.349E-05 | 1.344E-05 | 1.339E-05 |
| IVA PAPA | 1.334E-05 | 1.329E-05 | 1.324E-05 | 1.319E-05 | 1.314E-05 | 1.309E-05 | 1.304E-05 | 1.299E-05 | 1.294E-05 | 1.289E-05 |
| IVA PAPA | 1.772E-05 | 1.767E-05 | 1.762E-05 | 1.757E-05 | 1.752E-05 | 1.747E-05 | 1.742E-05 | 1.737E-05 | 1.732E-05 | 1.727E-05 |
| TOTAL CONCENTRATION (G/M**3) | | | | | | | | | | |

| SOURCE | 61. | 62. | 63. | 64. | 65. | 66. | 67. | 68. | 69. | 70. | 71. | 72. |
|------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| KU- GREE | 9.607E-05 | 9.634E-05 | 9.389E-05 | 9.129E-05 | 8.875E-05 | 8.621E-05 | 8.375E-05 | 8.120E-05 | 7.875E-05 | 7.621E-05 | 7.375E-05 | 7.120E-05 |
| KU- GREE | 2.046E-04 | 2.114E-04 | 2.179E-04 | 2.244E-04 | 2.309E-04 | 2.374E-04 | 2.439E-04 | 2.504E-04 | 2.569E-04 | 2.634E-04 | 2.699E-04 | 2.764E-04 |
| IVA PAPA | 1.437E-05 | 1.402E-05 | 1.367E-05 | 1.332E-05 | 1.297E-05 | 1.262E-05 | 1.227E-05 | 1.192E-05 | 1.157E-05 | 1.122E-05 | 1.087E-05 | 1.052E-05 |
| IVA PAPA | 1.472E-05 | 1.447E-05 | 1.422E-05 | 1.397E-05 | 1.372E-05 | 1.347E-05 | 1.322E-05 | 1.297E-05 | 1.272E-05 | 1.247E-05 | 1.222E-05 | 1.197E-05 |
| IVA PAPA | 1.762E-05 | 1.747E-05 | 1.732E-05 | 1.717E-05 | 1.702E-05 | 1.687E-05 | 1.672E-05 | 1.657E-05 | 1.642E-05 | 1.627E-05 | 1.612E-05 | 1.597E-05 |
| TOTAL CONCENTRATION (G/M**3) | | | | | | | | | | | | |

| SOURCE | 73. | 74. | 75. | 76. | 77. | 78. | 79. | 80. | 81. | 82. | 83. | 84. |
|------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| KU- GREE | 1.494E-04 | 1.523E-04 | 1.552E-04 | 1.581E-04 | 1.610E-04 | 1.639E-04 | 1.668E-04 | 1.697E-04 | 1.726E-04 | 1.755E-04 | 1.784E-04 | 1.813E-04 |
| KU- GREE | 0.433E-05 | 4.330E-05 | 4.327E-05 | 4.324E-05 | 4.321E-05 | 4.318E-05 | 4.315E-05 | 4.312E-05 | 4.309E-05 | 4.306E-05 | 4.303E-05 | 4.300E-05 |
| IVA PAPA | 1.427E-05 | 1.422E-05 | 1.417E-05 | 1.412E-05 | 1.407E-05 | 1.402E-05 | 1.397E-05 | 1.392E-05 | 1.387E-05 | 1.382E-05 | 1.377E-05 | 1.372E-05 |
| IVA PAPA | 1.427E-05 | 1.422E-05 | 1.417E-05 | 1.412E-05 | 1.407E-05 | 1.402E-05 | 1.397E-05 | 1.392E-05 | 1.387E-05 | 1.382E-05 | 1.377E-05 | 1.372E-05 |
| IVA PAPA | 1.742E-05 | 1.737E-05 | 1.732E-05 | 1.727E-05 | 1.722E-05 | 1.717E-05 | 1.712E-05 | 1.707E-05 | 1.702E-05 | 1.697E-05 | 1.692E-05 | 1.687E-05 |
| TOTAL CONCENTRATION (G/M**3) | | | | | | | | | | | | |

| SOURCE | 85. | 86. | 87. | 88. | 89. | 90. | 91. | 92. | 93. | 94. | 95. | 96. |
|------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| KU- GREE | 1.494E-04 | 1.523E-04 | 1.552E-04 | 1.581E-04 | 1.610E-04 | 1.639E-04 | 1.668E-04 | 1.697E-04 | 1.726E-04 | 1.755E-04 | 1.784E-04 | 1.813E-04 |
| KU- GREE | 0.433E-05 | 4.330E-05 | 4.327E-05 | 4.324E-05 | 4.321E-05 | 4.318E-05 | 4.315E-05 | 4.312E-05 | 4.309E-05 | 4.306E-05 | 4.303E-05 | 4.300E-05 |
| IVA PAPA | 1.427E-05 | 1.422E-05 | 1.417E-05 | 1.412E-05 | 1.407E-05 | 1.402E-05 | 1.397E-05 | 1.392E-05 | 1.387E-05 | 1.382E-05 | 1.377E-05 | 1.372E-05 |
| IVA PAPA | 1.427E-05 | 1.422E-05 | 1.417E-05 | 1.412E-05 | 1.407E-05 | 1.402E-05 | 1.397E-05 | 1.392E-05 | 1.387E-05 | 1.382E-05 | 1.377E-05 | 1.372E-05 |
| IVA PAPA | 1.742E-05 | 1.737E-05 | 1.732E-05 | 1.727E-05 | 1.722E-05 | 1.717E-05 | 1.712E-05 | 1.707E-05 | 1.702E-05 | 1.697E-05 | 1.692E-05 | 1.687E-05 |
| TOTAL CONCENTRATION (G/M**3) | | | | | | | | | | | | |

| SOURCE | 97. | 98. | 99. | 100. | 101. | 102. | 103. | 104. | 105. | 106. | 107. | 108. |
|------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| KU- GREE | 1.494E-04 | 1.523E-04 | 1.552E-04 | 1.581E-04 | 1.610E-04 | 1.639E-04 | 1.668E-04 | 1.697E-04 | 1.726E-04 | 1.755E-04 | 1.784E-04 | 1.813E-04 |
| KU- GREE | 0.433E-05 | 4.330E-05 | 4.327E-05 | 4.324E-05 | 4.321E-05 | 4.318E-05 | 4.315E-05 | 4.312E-05 | 4.309E-05 | 4.306E-05 | 4.303E-05 | 4.300E-05 |
| IVA PAPA | 1.427E-05 | 1.422E-05 | 1.417E-05 | 1.412E-05 | 1.407E-05 | 1.402E-05 | 1.397E-05 | 1.392E-05 | 1.387E-05 | 1.382E-05 | 1.377E-05 | 1.372E-05 |
| IVA PAPA | 1.427E-05 | 1.422E-05 | 1.417E-05 | 1.412E-05 | 1.407E-05 | 1.402E-05 | 1.397E-05 | 1.392E-05 | 1.387E-05 | 1.382E-05 | 1.377E-05 | 1.372E-05 |
| IVA PAPA | 1.742E-05 | 1.737E-05 | 1.732E-05 | 1.727E-05 | 1.722E-05 | 1.717E-05 | 1.712E-05 | 1.707E-05 | 1.702E-05 | 1.697E-05 | 1.692E-05 | 1.687E-05 |
| TOTAL CONCENTRATION (G/M**3) | | | | | | | | | | | | |

| SOURCE | 109. | 110. | 111. | 112. | 113. | 114. | 115. | 116. | 117. | 118. | 119. | 120. |
|------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| KU- GREE | 1.494E-04 | 1.523E-04 | 1.552E-04 | 1.581E-04 | 1.610E-04 | 1.639E-04 | 1.668E-04 | 1.697E-04 | 1.726E-04 | 1.755E-04 | 1.784E-04 | 1.813E-04 |
| KU- GREE | 0.433E-05 | 4.330E-05 | 4.327E-05 | 4.324E-05 | 4.321E-05 | 4.318E-05 | 4.315E-05 | 4.312E-05 | 4.309E-05 | 4.306E-05 | 4.303E-05 | 4.300E-05 |
| IVA PAPA | 1.427E-05 | 1.422E-05 | 1.417E-05 | 1.412E-05 | 1.407E-05 | 1.402E-05 | 1.397E-05 | 1.392E-05 | 1.387E-05 | 1.382E-05 | 1.377E-05 | 1.372E-05 |
| IVA PAPA | 1.427E-05 | 1.422E-05 | 1.417E-05 | 1.412E-05 | 1.407E-05 | 1.402E-05 | 1.397E-05 | 1.392E-05 | 1.387E-05 | 1.382E-05 | 1.377E-05 | 1.372E-05 |
| IVA PAPA | 1.742E-05 | 1.737E-05 | 1.732E-05 | 1.727E-05 | 1.722E-05 | 1.717E-05 | 1.712E-05 | 1.707E-05 | 1.702E-05 | 1.697E-05 | 1.692E-05 | 1.687E-05 |
| TOTAL CONCENTRATION (G/M**3) | | | | | | | | | | | | |

Received by [unclear] 4/10/77

JOHN Y. BROWN, JR.
Governor



JACKIE SWIGART
Secretary

COMMONWEALTH OF KENTUCKY
DEPARTMENT FOR NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION
BUREAU OF ENVIRONMENTAL PROTECTION
DIVISION OF AIR POLLUTION CONTROL
NORMAN E. SCHELL
DIRECTOR
1050 U.S. 127 BYPASS SOUTH
FRANKFORT, KENTUCKY 40601
(502) 564 - 3382

Ms. Rebecca Hammer
Regional Administrator
U.S. Environmental Protection Agency
Region IV
345 Courtland Street, N.E.
Atlanta, Georgia 30308

RE: Corning Glass Works SIP Revision

Dear Ms. Hammer: *Rebecca*

In compliance with the Clean Air Act Amendments of 1977, a revision to the State Implementation Plan for the attainment and maintenance of the National Ambient Air Quality Standards as it applies to the Corning Glass Works, Danville Plant, in Boyle County is hereby submitted to the U.S. Environmental Protection Agency. This revision has been prepared in accordance with 40 CFR 51 and the guidance documents issued by the U.S. Environmental Protection Agency.

This letter should serve to certify that all procedural requirements for adoption of this plan by the Commonwealth of Kentucky have been met. Opportunity for public participation and input has been provided through a public hearing (transcript attached). The revised emission limitations for the plant's glass melting tanks have been duly adopted by this Department as per the provisions of Regulation 401 KAR 50:055, Section 6.

It is requested that the U.S. Environmental Protection Agency favorably consider the approval of this revision and publish same in the Federal Register. If you have any questions, please contact Mr. Norman E. Schell, Director, Division of Air Pollution Control.

Sincerely,

Jackie Swigart
Jackie Swigart, Secretary

JS:kf

Enclosures: Public Hearing Transcript
SIP Revision
Public Hearing Publication Proof

cc: Corning Glass Works

CORNING GLASS WORKS - DANVILLE PLANT
 REDISTRIBUTION OF ALLOWABLE PARTICULATE EMISSIONS AMONG
 THEIR GLASS MELTING TANKS

Corning Glass Works currently operates three glass melting tanks designated T 121, T 122 and T 123 at their plant in Danville, Kentucky. Particulate emissions from tank T 122 and T 123 are controlled by an electrostatic precipitator while tank T 121 operates without a control device. Stack tests performed on these tanks revealed that all three glass melting tanks were operating in compliance with the applicable State Regulations.

Due to an uncertain market, the operation of tank T 122 is projected to be limited. Since the electrostatic precipitator (EP) was designed to operate with the flue gas parameters from both tanks T 122 and T 123, the operation of the EP controlling emissions just from tank T 123 would be impractical. However, when tank T 123 is operated uncontrolled, the actual particulate emission rate of 3.0 lbs/hr exceeds the allowable emission rate of .78 lbs/hr.

Therefore, pursuant to Regulation 401 50:055 (6), Corning Glass Works applied by letter dated December 3, 1980 to be allowed to apply the bubble policy in order to operate tank T 123 uncontrolled when tank T 122 is shutdown. To be eligible for application of the bubble policy, the points of emission proposed for bubbling may not be subject to standards under Title 401, Chapter 51 & 57, 401 KAR 63:020, or 401 KAR 63:010. Additionally, the bubbled points may not be subject to the Federal Regulations 40 CFR 60, 40 CFR 61, 40 CFR 52.21, and 40 CFR 51 Appendix 5. The points proposed for bubbling are currently subject to Regulation 401 KAR 61:020.

Additional eligibility requirements are that total source allowable emissions may not increase and the source impact on air quality must not be more as a result of the redistribution of emission allowables among the points of concern. Pertinent data relating to the emission points proposed to be bubbled and air quality impact are tabulated below.

| <u>BEFORE BUBBLING</u> | | | | | | |
|------------------------|----------------------------|--------------------------------|-----------------------------|---------------------------------------|----------------|--|
| <u>Emission Point</u> | <u>Process Weight Rate</u> | <u>Allowable Emission Rate</u> | <u>Actual Emission Rate</u> | <u>Maximum GLC (ug/m³)</u> | | |
| | | | | <u>3-Hour</u> | <u>24-Hour</u> | |
| T 121 | 21,000 lbs/hr | 19.8 lbs/hr | 10.6 lbs/hr | | | |
| T 122 | 8,500 lbs/hr | 10.8 lbs/hr | | 15.4 | 4.8 | |
| T 123 | 167 lbs/hr | .78 lbs/hr | .5 lbs/hr | | | |
| <u>AFTER BUBBLING</u> | | | | | | |
| T 121 | 21,000 lbs/hr | 19.8 lbs/hr | 10.6 lbs/hr | | | |
| T 122 | 0 | 0 | 0 | 9.9 | 3.2 | |
| T 123 | 167 lbs/hr | 3.0 lbs/hr | 3.0 lbs/hr | | | |

Since the analysis performed indicates all requirements will be satisfied, the Division of Air Pollution Control is proceeding to make the changes to the allowable emission rates effective by revising the State Implementation Plan (SIP).



Kentucky Department for Natural Resources and Environmental Protection

Division of Air Pollution Control

CORNING GLASS WORKS
Energy and Environmental Control
Houghton Park, ME-3
Corning, New York 14830

RE: Danville, Kentucky Plant.

Pursuant to your application received by this office on December 15, 1980 the Division of Air Pollution, by authority of Kentucky Revised Statutes Chapter 224, authorizes the issuance of this operating permit for the operation of the equipment specified herein in accordance with the plans, specifications, and other information submitted with your application. This permit is subject to all conditions and operating limitations contained herein.

| <u>Point of Emission</u> | <u>Affected Facility</u> | <u>Conditions</u> |
|--------------------------|--------------------------|--|
| 01 (T 121) | Glass Melting Tank | 21,000 lbs/hr maximum fill rate.
91,980 tons/year maximum annual production rate. |
| 02 (T 122) | Glass Melting Tank | 8,500 lbs/hr maximum fill rate.
37,230 tons/year maximum annual production rate. |
| 03 (T 123) | Glass Melting Tank | 167 lbs/hr maximum fill rate.
730 tons/year maximum annual production rate. |

GENERAL CONDITION:

- Particulate emissions from the glass melting tank shall not exceed the following limitations:
 - T 121 - 19.8 lbs/hr.
 - T 122 - 10.8 lbs/hr.
 - T 123 - .78 lbs/hr.
- Particulate emissions from glass melting tanks T 121 and T 123 when T 122 is shutdown shall not exceed the following limitations:
 - T 121 - 19.8 lbs/hr.
 - T 122 - 0.0 lbs/hr.
 - T 123 - 3.0 lbs/hr.

(GENERAL CONDITIONS CONTINUED ON REVERSE SIDE)

No deviation from the plans and specifications submitted with your application or the conditions specified herein is permitted, unless authorized in writing by the Division of Air Pollution. This permit shall become null and void at any time the terms and conditions contained herein are violated. All rights of inspection by the representatives of this Division of Air Pollution are reserved. Responsibility of satisfactory conformance to all Air Pollution Control Regulations must be borne by the permittee.

PERMIT NUMBER: 0-81-18
 FILE NUMBER: 102-0360-0001
 REGION: Bluegrass
 COUNTY: Boyle
 SIC CODE: 3851

Issued this day of 19

Jackie Swigart
 Secretary, Department for Natural Resources
 and Environmental Protection

DRAFT COPY

Director, Division of Air Pollution Control

GENERAL CONDITION: (continued)

3. The company shall maintain and make available for inspection by this Division all production records necessary to assure that the allowable hourly fill rates will not be exceeded.
4. Previous operating permit, 0-73-362, issued July 20, 1973 is hereby null and void.
5. The alternate particulate emission limitations will not become effective until final approval of a State Implementation Plan (SIP) Revision is published by EPA.

(CRSTER.V3) CORNING GLASS-DANVILLE *New Allowable Using Bubble Policy*

STACK # 1--STACK #1 - TANK 121
 STACK # 2--STACK # 2 - TANK 123

| STACK | MONTH | EMISSION RATE
(GMS/SEC) | HEIGHT
(METERS) | DIAMETER
(METERS) | EXIT VELOCITY
(M/SEC) | TEMP
(DEG.K) | VOLUMETRIC FLOW
(M**3/SEC) |
|-------|-------|----------------------------|--------------------|----------------------|--------------------------|-----------------|-------------------------------|
| 1 | ALL | 2.4900 (19.8%) | 41.10 | 1.85 | 10.70 | 515.00 | 28.76 |
| 2 | ALL | 0.3800 (3.0%) | 22.90 | 0.97 | 5.50 | 470.00 | 4.06 |

PLANT NAME: CORNING GLASS-DANVILLE POLLUTANT: SO2 EMIS EMISSION UNITS: GM/SEC AIR QUALITY UNITS: GM/M**3

| DAY | RATIO | CONCENTRATION | DIRECTION | DISTANCE(KM) | HOUR | CONCENTRATION | DIRECTION | DISTANCE(KM) |
|-----|--------|-----------------|-----------|--------------|------|----------------|-----------|--------------|
| 1 | 4.310 | 0.00148E-06 | 10 | 1.10 | 21 | 1.2404131E-06 | 10 | 1.10 |
| 2 | 4.410 | 0.00173E-06 | 10 | 1.10 | 21 | 1.3372338E-06 | 8 | 1.10 |
| 3 | 6.940 | 0.004110997E-06 | 7 | 0.90 | 14 | 1.2211931E-06 | 6 | 0.90 |
| 4 | 4.699 | 0.003873699E-06 | 35 | 0.90 | 13 | 1.5720836E-06 | 34 | 0.90 |
| 5 | 5.900 | 0.004154463E-06 | 32 | 0.90 | 23 | 1.2908599E-06 | 31 | 0.90 |
| 6 | 5.004 | 0.003811844E-06 | 31 | 0.90 | 13 | 1.2151700E-06 | 35 | 0.90 |
| 7 | 5.058 | 0.00358399E-06 | 33 | 1.10 | 9 | 1.22332842E-06 | 33 | 0.70 |
| 8 | 10.892 | 0.008258399E-06 | 34 | 1.10 | 9 | 7.11093927E-07 | 32 | 1.10 |
| 9 | 4.669 | 0.003905466E-06 | 8 | 1.10 | 3 | 1.2361499E-06 | 9 | 1.10 |
| 10 | 9.270 | 0.007889488E-06 | 1 | 1.10 | 4 | 8.9021482E-06 | 30 | 0.70 |
| 11 | 4.271 | 0.003524888E-06 | 3 | 0.90 | 4 | 1.3064278E-06 | 30 | 0.70 |
| 12 | 3.386 | 0.00281999E-06 | 10 | 0.90 | 13 | 1.17013304E-06 | 15 | 0.90 |
| 13 | 3.821 | 0.003121999E-06 | 10 | 0.90 | 13 | 1.17013304E-06 | 15 | 0.90 |

PLANT NAME: CORNING GLASS-DANVILLE POLLUTANT: SO2 FHS EMISSION UNITS: GM/SEC AIR QUALITY UNITS: GM/MM³
 MAXIMUM MEAN CONC= 2.6518E-07 DIRECTION= 36 DISTANCE= 0.9 KM

| DIR | RANGE | 0.3 KM | ANNUAL MEAN CONCENTRATION AT EACH RECEPTOR | 0.5 KM | 0.7 KM | 0.9 KM | 1.1 KM |
|-----|-------|---------|--|-------------|-------------|-------------|-------------|
| 1 | 1.29 | 337E-07 | 2.01893E-07 | 2.8437E-07 | 2.30648E-07 | 2.22060E-07 | 2.44191E-07 |
| 2 | 1.44 | 808E-07 | 2.32375E-07 | 2.51980E-07 | 2.52493E-07 | 2.44191E-07 | 2.44191E-07 |
| 3 | 1.73 | 553E-07 | 2.62483E-07 | 2.52024E-07 | 2.50597E-07 | 2.39304E-07 | 2.39304E-07 |
| 4 | 1.03 | 144E-07 | 1.82888E-07 | 2.06449E-07 | 2.49822E-07 | 2.14870E-07 | 2.14870E-07 |
| 5 | 7.2 | 565E-07 | 1.35446E-07 | 1.08110E-07 | 2.10722E-07 | 2.03390E-07 | 2.03390E-07 |
| 6 | 7.7 | 900E-07 | 1.35419E-07 | 1.17824E-07 | 1.83373E-07 | 1.48922E-07 | 1.48922E-07 |
| 7 | 6.6 | 594E-07 | 1.44373E-07 | 1.44444E-07 | 1.44623E-07 | 1.48152E-07 | 1.48152E-07 |
| 8 | 7.2 | 265E-07 | 1.43068E-07 | 1.66666E-07 | 1.54795E-07 | 1.50425E-07 | 1.50425E-07 |
| 9 | 6.2 | 293E-07 | 1.02317E-07 | 1.36323E-07 | 1.32797E-07 | 1.32295E-07 | 1.32295E-07 |
| 10 | 4.4 | 420E-07 | 6.71732E-08 | 8.95179E-08 | 8.95302E-08 | 7.70776E-08 | 7.70776E-08 |
| 11 | 5.1 | 152E-07 | 1.11107E-07 | 1.14288E-07 | 1.16654E-07 | 1.16654E-07 | 1.16654E-07 |
| 12 | 6.1 | 172E-07 | 1.00743E-07 | 1.14288E-07 | 1.17130E-07 | 1.10750E-07 | 1.10750E-07 |
| 13 | 6.6 | 177E-07 | 1.04253E-07 | 1.13681E-07 | 1.17130E-07 | 1.10750E-07 | 1.10750E-07 |
| 14 | 6.2 | 337E-07 | 1.18523E-07 | 1.18984E-07 | 1.35557E-07 | 1.27618E-07 | 1.27618E-07 |
| 15 | 7.7 | 203E-07 | 1.18523E-07 | 1.36882E-07 | 1.59326E-07 | 1.45184E-07 | 1.45184E-07 |
| 16 | 7.7 | 287E-07 | 1.24960E-07 | 1.79825E-07 | 1.81011E-07 | 1.58805E-07 | 1.58805E-07 |
| 17 | 6.1 | 171E-07 | 1.00743E-07 | 1.13221E-07 | 1.08110E-07 | 1.09927E-07 | 1.09927E-07 |
| 18 | 6.6 | 177E-07 | 1.04253E-07 | 1.14288E-07 | 1.17130E-07 | 1.10750E-07 | 1.10750E-07 |
| 19 | 6.2 | 337E-07 | 1.18523E-07 | 1.18984E-07 | 1.35557E-07 | 1.27618E-07 | 1.27618E-07 |
| 20 | 7.7 | 203E-07 | 1.18523E-07 | 1.36882E-07 | 1.59326E-07 | 1.45184E-07 | 1.45184E-07 |
| 21 | 7.7 | 287E-07 | 1.24960E-07 | 1.79825E-07 | 1.81011E-07 | 1.58805E-07 | 1.58805E-07 |
| 22 | 6.1 | 171E-07 | 1.00743E-07 | 1.13221E-07 | 1.08110E-07 | 1.09927E-07 | 1.09927E-07 |
| 23 | 6.6 | 177E-07 | 1.04253E-07 | 1.14288E-07 | 1.17130E-07 | 1.10750E-07 | 1.10750E-07 |
| 24 | 6.2 | 337E-07 | 1.18523E-07 | 1.18984E-07 | 1.35557E-07 | 1.27618E-07 | 1.27618E-07 |
| 25 | 7.7 | 203E-07 | 1.18523E-07 | 1.36882E-07 | 1.59326E-07 | 1.45184E-07 | 1.45184E-07 |
| 26 | 7.7 | 287E-07 | 1.24960E-07 | 1.79825E-07 | 1.81011E-07 | 1.58805E-07 | 1.58805E-07 |
| 27 | 6.1 | 171E-07 | 1.00743E-07 | 1.13221E-07 | 1.08110E-07 | 1.09927E-07 | 1.09927E-07 |
| 28 | 6.6 | 177E-07 | 1.04253E-07 | 1.14288E-07 | 1.17130E-07 | 1.10750E-07 | 1.10750E-07 |
| 29 | 6.2 | 337E-07 | 1.18523E-07 | 1.18984E-07 | 1.35557E-07 | 1.27618E-07 | 1.27618E-07 |
| 30 | 7.7 | 203E-07 | 1.18523E-07 | 1.36882E-07 | 1.59326E-07 | 1.45184E-07 | 1.45184E-07 |
| 31 | 7.7 | 287E-07 | 1.24960E-07 | 1.79825E-07 | 1.81011E-07 | 1.58805E-07 | 1.58805E-07 |
| 32 | 6.1 | 171E-07 | 1.00743E-07 | 1.13221E-07 | 1.08110E-07 | 1.09927E-07 | 1.09927E-07 |
| 33 | 6.6 | 177E-07 | 1.04253E-07 | 1.14288E-07 | 1.17130E-07 | 1.10750E-07 | 1.10750E-07 |
| 34 | 6.2 | 337E-07 | 1.18523E-07 | 1.18984E-07 | 1.35557E-07 | 1.27618E-07 | 1.27618E-07 |
| 35 | 7.7 | 203E-07 | 1.18523E-07 | 1.36882E-07 | 1.59326E-07 | 1.45184E-07 | 1.45184E-07 |

PLANT NAME: CORNING GLASS-DANVILLE POLLUTANT: SO2 EMIS EMISSION UNITS: GM/SEC AIR QUALITY UNITS: GM/H**3
YEARLY MAXIMUM 24-HOUR CONC= 3.42095E-06 DIRECTION= 30 DISTANCE= 0.7 KM DAY=227

| DIR | RANGE | HIGHEST 24-HOUR CONCENTRATION AT EACH RECEPTOR | 0.3 KM | 0.5 KM | 0.7 KM | 0.9 KM | 1.1 KM | |
|-----|------------|--|------------|--------|------------|--------|------------|-------|
| 1 | 1.4800E-06 | (187) | 1.6800E-06 | (187) | 1.7934E-06 | (213) | 1.6966E-06 | (213) |
| 2 | 1.5422E-06 | (260) | 1.6874E-06 | (64) | 2.0675E-06 | (229) | 2.0888E-06 | (222) |
| 3 | 1.6886E-06 | (175) | 1.9842E-06 | (175) | 2.4132E-06 | (190) | 2.0858E-06 | (168) |
| 4 | 1.6878E-06 | (175) | 1.9842E-06 | (175) | 2.4132E-06 | (190) | 2.0858E-06 | (168) |
| 5 | 1.3744E-06 | (201) | 1.6444E-06 | (100) | 1.8623E-06 | (154) | 1.8728E-06 | (159) |
| 6 | 1.3744E-06 | (201) | 1.6444E-06 | (100) | 1.8623E-06 | (154) | 1.8728E-06 | (159) |
| 7 | 1.3744E-06 | (201) | 1.6444E-06 | (100) | 1.8623E-06 | (154) | 1.8728E-06 | (159) |
| 8 | 1.3744E-06 | (201) | 1.6444E-06 | (100) | 1.8623E-06 | (154) | 1.8728E-06 | (159) |
| 9 | 1.3744E-06 | (201) | 1.6444E-06 | (100) | 1.8623E-06 | (154) | 1.8728E-06 | (159) |
| 10 | 1.3744E-06 | (201) | 1.6444E-06 | (100) | 1.8623E-06 | (154) | 1.8728E-06 | (159) |
| 11 | 1.3744E-06 | (201) | 1.6444E-06 | (100) | 1.8623E-06 | (154) | 1.8728E-06 | (159) |

PLANT NAME: CORNING GLASS-DANVILLE POLLUTANT: SO2 EMIS EMISSION UNITS: GM/SEC AIR QUALITY UNITS: GM/H**3
YEARLY SECOND MAXIMUM 24-HOUR CONC= 2.4734E-06 DIRECTION= 13 DISTANCE= 0.7 KM DAY=160

| DIR | RANGE | HIGHEST 24-HOUR CONCENTRATION AT EACH RECEPTOR | 0.3 KM | 0.5 KM | 0.7 KM | 0.9 KM | 1.1 KM | |
|-----|------------|--|------------|--------|------------|--------|------------|-------|
| 1 | 1.4197E-06 | (131) | 1.6800E-06 | (187) | 1.7934E-06 | (213) | 1.6966E-06 | (222) |
| 2 | 1.5422E-06 | (260) | 1.6874E-06 | (64) | 2.0675E-06 | (229) | 2.0888E-06 | (222) |
| 3 | 1.6886E-06 | (175) | 1.9842E-06 | (175) | 2.4132E-06 | (190) | 2.0858E-06 | (168) |
| 4 | 1.6878E-06 | (175) | 1.9842E-06 | (175) | 2.4132E-06 | (190) | 2.0858E-06 | (168) |
| 5 | 1.3744E-06 | (201) | 1.6444E-06 | (100) | 1.8623E-06 | (154) | 1.8728E-06 | (159) |
| 6 | 1.3744E-06 | (201) | 1.6444E-06 | (100) | 1.8623E-06 | (154) | 1.8728E-06 | (159) |
| 7 | 1.3744E-06 | (201) | 1.6444E-06 | (100) | 1.8623E-06 | (154) | 1.8728E-06 | (159) |
| 8 | 1.3744E-06 | (201) | 1.6444E-06 | (100) | 1.8623E-06 | (154) | 1.8728E-06 | (159) |
| 9 | 1.3744E-06 | (201) | 1.6444E-06 | (100) | 1.8623E-06 | (154) | 1.8728E-06 | (159) |
| 10 | 1.3744E-06 | (201) | 1.6444E-06 | (100) | 1.8623E-06 | (154) | 1.8728E-06 | (159) |
| 11 | 1.3744E-06 | (201) | 1.6444E-06 | (100) | 1.8623E-06 | (154) | 1.8728E-06 | (159) |

PLANT NAME: CORNING GLASS-DANVILLE POLLUTANT: SO2 EHS EMISSION UNITS: GM/SEC AIR QUALITY UNITS: GM/H**3
 YEARLY MAXIMUM 3-HOUR CONC= 9.8811E-06 DIRECTION= 16 DISTANCE= 0.5 KM DAY=181 TIME PERIOD= 5

| DIR | RANGE | 0.3 KM | | 0.5 KM | | 0.7 KM | | 0.9 KM | | 1.1 KM | | |
|-----|------------|----------|---------------------------------------|----------|---------------------------------------|----------|---------------------------------------|----------|---------------------------------------|----------|---------------------------------------|----------|
| | | HIGHEST | 3-HOUR CONCENTRATION AT EACH RECEPTOR | HIGHEST | 3-HOUR CONCENTRATION AT EACH RECEPTOR | HIGHEST | 3-HOUR CONCENTRATION AT EACH RECEPTOR | HIGHEST | 3-HOUR CONCENTRATION AT EACH RECEPTOR | HIGHEST | 3-HOUR CONCENTRATION AT EACH RECEPTOR | |
| 1 | 8.0689E-06 | (230, 5) | 9.4443E-06 | (230, 5) | 8.7987E-06 | (257, 4) | 9.1011E-06 | (257, 4) | 8.5258E-06 | (257, 4) | 8.1776E-06 | (345, 4) |
| 2 | 8.9409E-06 | (236, 5) | 9.2787E-06 | (236, 5) | 8.8666E-06 | (290, 4) | 9.3904E-06 | (290, 4) | 8.9016E-06 | (290, 4) | 8.4478E-06 | (261, 5) |
| 3 | 8.1801E-06 | (244, 4) | 8.6448E-06 | (244, 4) | 8.0909E-06 | (249, 4) | 8.3303E-06 | (249, 4) | 8.0027E-06 | (249, 4) | 7.7872E-06 | (261, 5) |
| 4 | 8.3451E-06 | (201, 5) | 8.2644E-06 | (201, 5) | 8.1477E-06 | (210, 5) | 8.0809E-06 | (210, 5) | 8.0027E-06 | (210, 5) | 7.9339E-06 | (261, 5) |
| 5 | 8.1355E-06 | (152, 5) | 8.1085E-06 | (152, 5) | 8.1477E-06 | (210, 5) | 8.1010E-06 | (210, 5) | 8.0027E-06 | (210, 5) | 8.0027E-06 | (261, 5) |
| 6 | 8.1922E-06 | (235, 5) | 8.4547E-06 | (235, 5) | 8.3780E-06 | (235, 5) | 8.1022E-06 | (235, 5) | 8.0027E-06 | (235, 5) | 8.0027E-06 | (261, 5) |
| 7 | 8.1224E-06 | (200, 4) | 8.2802E-06 | (200, 4) | 8.5740E-06 | (250, 4) | 8.3303E-06 | (250, 4) | 8.0027E-06 | (250, 4) | 8.0027E-06 | (261, 5) |
| 8 | 8.4246E-06 | (262, 4) | 8.0909E-06 | (262, 4) | 8.4663E-06 | (262, 4) | 8.3303E-06 | (262, 4) | 8.0027E-06 | (262, 4) | 8.0027E-06 | (261, 5) |
| 9 | 8.3222E-06 | (187, 4) | 8.2644E-06 | (187, 4) | 8.4663E-06 | (262, 4) | 8.3303E-06 | (262, 4) | 8.0027E-06 | (262, 4) | 8.0027E-06 | (261, 5) |
| 10 | 8.0971E-06 | (181, 4) | 8.2644E-06 | (181, 4) | 8.4663E-06 | (262, 4) | 8.3303E-06 | (262, 4) | 8.0027E-06 | (262, 4) | 8.0027E-06 | (261, 5) |
| 11 | 8.0971E-06 | (181, 4) | 8.2644E-06 | (181, 4) | 8.4663E-06 | (262, 4) | 8.3303E-06 | (262, 4) | 8.0027E-06 | (262, 4) | 8.0027E-06 | (261, 5) |
| 12 | 8.0971E-06 | (181, 4) | 8.2644E-06 | (181, 4) | 8.4663E-06 | (262, 4) | 8.3303E-06 | (262, 4) | 8.0027E-06 | (262, 4) | 8.0027E-06 | (261, 5) |
| 13 | 8.0971E-06 | (181, 4) | 8.2644E-06 | (181, 4) | 8.4663E-06 | (262, 4) | 8.3303E-06 | (262, 4) | 8.0027E-06 | (262, 4) | 8.0027E-06 | (261, 5) |
| 14 | 8.0971E-06 | (181, 4) | 8.2644E-06 | (181, 4) | 8.4663E-06 | (262, 4) | 8.3303E-06 | (262, 4) | 8.0027E-06 | (262, 4) | 8.0027E-06 | (261, 5) |
| 15 | 8.0971E-06 | (181, 4) | 8.2644E-06 | (181, 4) | 8.4663E-06 | (262, 4) | 8.3303E-06 | (262, 4) | 8.0027E-06 | (262, 4) | 8.0027E-06 | (261, 5) |
| 16 | 8.0971E-06 | (181, 4) | 8.2644E-06 | (181, 4) | 8.4663E-06 | (262, 4) | 8.3303E-06 | (262, 4) | 8.0027E-06 | (262, 4) | 8.0027E-06 | (261, 5) |
| 17 | 8.0971E-06 | (181, 4) | 8.2644E-06 | (181, 4) | 8.4663E-06 | (262, 4) | 8.3303E-06 | (262, 4) | 8.0027E-06 | (262, 4) | 8.0027E-06 | (261, 5) |
| 18 | 8.0971E-06 | (181, 4) | 8.2644E-06 | (181, 4) | 8.4663E-06 | (262, 4) | 8.3303E-06 | (262, 4) | 8.0027E-06 | (262, 4) | 8.0027E-06 | (261, 5) |
| 19 | 8.0971E-06 | (181, 4) | 8.2644E-06 | (181, 4) | 8.4663E-06 | (262, 4) | 8.3303E-06 | (262, 4) | 8.0027E-06 | (262, 4) | 8.0027E-06 | (261, 5) |
| 20 | 8.0971E-06 | (181, 4) | 8.2644E-06 | (181, 4) | 8.4663E-06 | (262, 4) | 8.3303E-06 | (262, 4) | 8.0027E-06 | (262, 4) | 8.0027E-06 | (261, 5) |
| 21 | 8.0971E-06 | (181, 4) | 8.2644E-06 | (181, 4) | 8.4663E-06 | (262, 4) | 8.3303E-06 | (262, 4) | 8.0027E-06 | (262, 4) | 8.0027E-06 | (261, 5) |
| 22 | 8.0971E-06 | (181, 4) | 8.2644E-06 | (181, 4) | 8.4663E-06 | (262, 4) | 8.3303E-06 | (262, 4) | 8.0027E-06 | (262, 4) | 8.0027E-06 | (261, 5) |
| 23 | 8.0971E-06 | (181, 4) | 8.2644E-06 | (181, 4) | 8.4663E-06 | (262, 4) | 8.3303E-06 | (262, 4) | 8.0027E-06 | (262, 4) | 8.0027E-06 | (261, 5) |
| 24 | 8.0971E-06 | (181, 4) | 8.2644E-06 | (181, 4) | 8.4663E-06 | (262, 4) | 8.3303E-06 | (262, 4) | 8.0027E-06 | (262, 4) | 8.0027E-06 | (261, 5) |
| 25 | 8.0971E-06 | (181, 4) | 8.2644E-06 | (181, 4) | 8.4663E-06 | (262, 4) | 8.3303E-06 | (262, 4) | 8.0027E-06 | (262, 4) | 8.0027E-06 | (261, 5) |
| 26 | 8.0971E-06 | (181, 4) | 8.2644E-06 | (181, 4) | 8.4663E-06 | (262, 4) | 8.3303E-06 | (262, 4) | 8.0027E-06 | (262, 4) | 8.0027E-06 | (261, 5) |
| 27 | 8.0971E-06 | (181, 4) | 8.2644E-06 | (181, 4) | 8.4663E-06 | (262, 4) | 8.3303E-06 | (262, 4) | 8.0027E-06 | (262, 4) | 8.0027E-06 | (261, 5) |
| 28 | 8.0971E-06 | (181, 4) | 8.2644E-06 | (181, 4) | 8.4663E-06 | (262, 4) | 8.3303E-06 | (262, 4) | 8.0027E-06 | (262, 4) | 8.0027E-06 | (261, 5) |
| 29 | 8.0971E-06 | (181, 4) | 8.2644E-06 | (181, 4) | 8.4663E-06 | (262, 4) | 8.3303E-06 | (262, 4) | 8.0027E-06 | (262, 4) | 8.0027E-06 | (261, 5) |
| 30 | 8.0971E-06 | (181, 4) | 8.2644E-06 | (181, 4) | 8.4663E-06 | (262, 4) | 8.3303E-06 | (262, 4) | 8.0027E-06 | (262, 4) | 8.0027E-06 | (261, 5) |
| 31 | 8.0971E-06 | (181, 4) | 8.2644E-06 | (181, 4) | 8.4663E-06 | (262, 4) | 8.3303E-06 | (262, 4) | 8.0027E-06 | (262, 4) | 8.0027E-06 | (261, 5) |
| 32 | 8.0971E-06 | (181, 4) | 8.2644E-06 | (181, 4) | 8.4663E-06 | (262, 4) | 8.3303E-06 | (262, 4) | 8.0027E-06 | (262, 4) | 8.0027E-06 | (261, 5) |
| 33 | 8.0971E-06 | (181, 4) | 8.2644E-06 | (181, 4) | 8.4663E-06 | (262, 4) | 8.3303E-06 | (262, 4) | 8.0027E-06 | (262, 4) | 8.0027E-06 | (261, 5) |
| 34 | 8.0971E-06 | (181, 4) | 8.2644E-06 | (181, 4) | 8.4663E-06 | (262, 4) | 8.3303E-06 | (262, 4) | 8.0027E-06 | (262, 4) | 8.0027E-06 | (261, 5) |
| 35 | 8.0971E-06 | (181, 4) | 8.2644E-06 | (181, 4) | 8.4663E-06 | (262, 4) | 8.3303E-06 | (262, 4) | 8.0027E-06 | (262, 4) | 8.0027E-06 | (261, 5) |

PLANT NAME: CORNING GLASS-DANVILLE POLLUTANT: SO2 EHS EMISSION UNITS: GM/SEC AIR QUALITY UNITS: GM/H**3
 YEARLY SECOND MAXIMUM 3-HOUR CONC= 9.5976E-06 DIRECTION= 4 DISTANCE= 0.5 KM DAY=176 TIME PERIOD= 4

| DIR | RANGE | 0.3 KM | | 0.5 KM | | 0.7 KM | | 0.9 KM | | 1.1 KM | | |
|-----|------------|----------|---------------------------------------|----------|---------------------------------------|----------|---------------------------------------|----------|---------------------------------------|----------|---------------------------------------|----------|
| | | HIGHEST | 3-HOUR CONCENTRATION AT EACH RECEPTOR | HIGHEST | 3-HOUR CONCENTRATION AT EACH RECEPTOR | HIGHEST | 3-HOUR CONCENTRATION AT EACH RECEPTOR | HIGHEST | 3-HOUR CONCENTRATION AT EACH RECEPTOR | HIGHEST | 3-HOUR CONCENTRATION AT EACH RECEPTOR | |
| 1 | 7.5672E-06 | (224, 4) | 7.7329E-06 | (257, 4) | 8.5923E-06 | (224, 4) | 8.5434E-06 | (187, 4) | 8.1776E-06 | (345, 4) | 8.1776E-06 | (345, 4) |
| 2 | 7.9340E-06 | (187, 4) | 8.5258E-06 | (257, 4) | 8.0837E-06 | (240, 4) | 8.5434E-06 | (187, 4) | 8.1776E-06 | (345, 4) | 8.1776E-06 | (345, 4) |
| 3 | 7.7447E-06 | (208, 5) | 8.5258E-06 | (257, 4) | 8.8372E-06 | (240, 4) | 8.5434E-06 | (187, 4) | 8.1776E-06 | (345, 4) | 8.1776E-06 | (345, 4) |
| 4 | 7.9637E-06 | (213, 4) | 8.5258E-06 | (257, 4) | 8.6927E-06 | (222, 4) | 8.5434E-06 | (187, 4) | 8.1776E-06 | (345, 4) | 8.1776E-06 | (345, 4) |
| 5 | 7.8157E-06 | (208, 4) | 8.0192E-06 | (208, 4) | 8.6009E-06 | (208, 4) | 8.5434E-06 | (187, 4) | 8.1776E-06 | (345, 4) | 8.1776E-06 | (345, 4) |
| 6 | 7.3399E-06 | (156, 4) | 8.0875E-06 | (156, 4) | 8.9156E-06 | (175, 4) | 8.5434E-06 | (187, 4) | 8.1776E-06 | (345, 4) | 8.1776E-06 | (345, 4) |
| 7 | 7.8805E-06 | (264, 5) | 8.1104E-06 | (238, 4) | 8.0796E-06 | (175, 4) | 8.5434E-06 | (187, 4) | 8.1776E-06 | (345, 4) | 8.1776E-06 | (345, 4) |
| 8 | 7.7329E-06 | (150, 4) | 8.1104E-06 | (150, 4) | 8.2222E-06 | (150, 4) | 8.5434E-06 | (187, 4) | 8.1776E-06 | (345, 4) | 8.1776E-06 | (345, 4) |
| 9 | 7.7329E-06 | (150, 4) | 8.1104E-06 | (150, 4) | 8.2222E-06 | (150, 4) | 8.5434E-06 | (187, 4) | 8.1776E-06 | (345, 4) | 8.1776E-06 | (345, 4) |
| 10 | 7.7329E-06 | (150, 4) | 8.1104E-06 | (150, 4) | 8.2222E-06 | (150, 4) | 8.5434E-06 | (187, 4) | 8.1776E-06 | (345, 4) | 8.1776E-06 | (345, 4) |
| 11 | 7.7329E-06 | (150, 4) | 8.1104E-06 | (150, 4) | 8.2222E-06 | (150, 4) | 8.5434E-06 | (187, 4) | 8.1776E-06 | (345, 4) | 8.1776E-06 | (345, 4) |

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 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00

(CRSTER-V3) CORNING GLASS-DANVILLE

STACK # 1--STACK #1 - TANK 121
 STACK # 2--STACK#2 - TANKS 122 & 123

Existing Alleviables

| STACK | MONTH | EMISSION RATE
(GMS/SEC) | HEIGHT
(METERS) | DIAMETER
(METERS) | EXIT VELOCITY
(M/SEC) | TEMP
(DEG.K) | VOLUMETRIC FLOW
(M ³ /SEC) |
|-------|-------|----------------------------|--------------------|----------------------|--------------------------|-----------------|--|
| 1 | ALL | 2.4900 | 41.10 | 1.85 | 10.70 | 515.00 | 28.76 |
| 2 | ALL | 1.4600 | 41.10 | 1.83 | 4.50 | 440.00 | 11.84 |

(19.8 ³/₄)
(11.6 ³/₄)

(CRSTER.V3) CORNING GLASS-DANVILLE
 RING DISTANCES(KM)= 0.30 0.50 0.70 0.90 1.10

PLANT ELEVATION (FEET ABOVE SEA LEVEL)-- 0.0 PLANT ELEVATION (METERS ABOVE SEA LEVEL)-- 0.0

RECEPTOR ELEVATIONS (FEET ABOVE SEA LEVEL) RECEPTOR ELEVATIONS (METERS ABOVE SEA LEVEL)

| DIRECTION | RING#1 | RING#2 | RING#3 | RING#4 | RING#5 | RING#1 | RING#2 | RING#3 | RING#4 | RING#5 |
|-----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 3 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 6 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 7 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 8 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 9 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 10 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 11 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 12 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 13 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 14 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 15 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 16 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 17 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 18 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 19 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 20 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 21 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 22 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 24 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 25 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 26 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 27 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 28 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 29 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 30 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 31 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 32 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 33 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 34 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 35 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 36 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 37 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 38 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 39 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 40 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

(CRSTER.V3) CORNING GLASS-DANVILLE

STACK # 1--STACK #1 - TANK 121
 STACK # 2--STACK#2 - TANKS 122 & 123

| STACK | MONTH | EMISSION RATE (GMS/SEC) | HEIGHT (METERS) | DIAMETER (METERS) | EXIT VELOCITY (M/SEC) | TEMP (DEG.K) | VOLUMETRIC FLOW (M**3/SEC) |
|-------|-------|-------------------------|-----------------|-------------------|-----------------------|--------------|----------------------------|
| 1 | ALL | 2.4900 | 41.10 | 1.85 | 10.70 | 515.00 | 28.76 |
| 2 | ALL | 1.6600 | 41.10 | 1.83 | 4.50 | 440.00 | 11.84 |

PLANT NAME: CORNING GLASS-DANVILLE POLLUTANT: SO2 EMIS EMISSION UNITS: GM/SEC AIR QUALITY UNITS: GM/HRS
 MAXIMUM MEAN CONC= 2.8970E-07 DIRECTION= 3 DISTANCE= 1.1 KM

DIR RANGE 0.3 KM ANNUAL MEAN CONCENTRATION AT EACH RECEPTOR 0.5 KM 0.7 KM 0.9 KM 1.1 KM

| DIR | RANGE | 0.3 KM | 0.5 KM | 0.7 KM | 0.9 KM | 1.1 KM |
|-----|------------|--------|------------|--------|------------|--------|
| 1 | 6.4350E-07 | (148) | 2.4247E-06 | (148) | 4.4265E-06 | (131) |
| 1 | 6.4735E-07 | (175) | 2.4092E-06 | (175) | 4.5414E-06 | (150) |
| 3 | 1.0347E-05 | (175) | 2.8697E-06 | (175) | 3.5244E-06 | (150) |
| 3 | 1.1144E-05 | (176) | 2.9063E-06 | (175) | 3.6097E-06 | (150) |
| 4 | 7.6444E-07 | (176) | 2.7242E-06 | (176) | 3.7705E-06 | (149) |
| 5 | 4.8334E-07 | (176) | 1.8851E-06 | (176) | 2.4475E-06 | (150) |
| 5 | 4.8334E-07 | (176) | 1.8851E-06 | (176) | 2.4475E-06 | (150) |
| 7 | 2.1474E-07 | (200) | 8.4277E-06 | (200) | 1.1399E-05 | (184) |
| 7 | 2.1474E-07 | (200) | 8.4277E-06 | (200) | 1.1399E-05 | (184) |
| 9 | 5.1474E-07 | (200) | 2.0425E-06 | (200) | 2.6041E-06 | (184) |
| 9 | 5.1474E-07 | (200) | 2.0425E-06 | (200) | 2.6041E-06 | (184) |
| 10 | 4.8383E-07 | (251) | 1.8375E-06 | (251) | 2.3795E-06 | (171) |
| 10 | 4.8383E-07 | (251) | 1.8375E-06 | (251) | 2.3795E-06 | (171) |
| 1 | 5.4350E-07 | (148) | 2.4247E-06 | (148) | 4.4265E-06 | (131) |
| 1 | 5.4350E-07 | (148) | 2.4247E-06 | (148) | 4.4265E-06 | (131) |
| 3 | 1.0347E-05 | (175) | 2.8697E-06 | (175) | 3.5244E-06 | (150) |
| 3 | 1.1144E-05 | (176) | 2.9063E-06 | (175) | 3.6097E-06 | (150) |
| 4 | 7.6444E-07 | (176) | 2.7242E-06 | (176) | 3.7705E-06 | (149) |
| 5 | 4.8334E-07 | (176) | 1.8851E-06 | (176) | 2.4475E-06 | (150) |
| 5 | 4.8334E-07 | (176) | 1.8851E-06 | (176) | 2.4475E-06 | (150) |
| 7 | 2.1474E-07 | (200) | 8.4277E-06 | (200) | 1.1399E-05 | (184) |
| 7 | 2.1474E-07 | (200) | 8.4277E-06 | (200) | 1.1399E-05 | (184) |
| 9 | 5.1474E-07 | (200) | 2.0425E-06 | (200) | 2.6041E-06 | (184) |
| 9 | 5.1474E-07 | (200) | 2.0425E-06 | (200) | 2.6041E-06 | (184) |
| 10 | 4.8383E-07 | (251) | 1.8375E-06 | (251) | 2.3795E-06 | (171) |
| 10 | 4.8383E-07 | (251) | 1.8375E-06 | (251) | 2.3795E-06 | (171) |

PLANT NAME: CORNING GLASS-DANVILLE POLLUTANT: SO2 EMIS EMISSION UNITS: GM/SEC AIR QUALITY UNITS: GM/HRS
 YEARLY MAXIMUM 24-HOUR CONC= 6.8174E-06 DIRECTION= 17 DISTANCE= 0.7 KM DAY=138

RANGE 0.3 KM HIGHEST 24-HOUR CONCENTRATION AT EACH RECEPTOR 0.5 KM 0.7 KM 0.9 KM 1.1 KM

| DIR | RANGE | 0.3 KM | 0.5 KM | 0.7 KM | 0.9 KM | 1.1 KM |
|-----|------------|--------|------------|--------|------------|--------|
| 1 | 6.4350E-07 | (148) | 2.4247E-06 | (148) | 4.4265E-06 | (131) |
| 1 | 6.4735E-07 | (175) | 2.4092E-06 | (175) | 4.5414E-06 | (150) |
| 3 | 1.0347E-05 | (175) | 2.8697E-06 | (175) | 3.5244E-06 | (150) |
| 3 | 1.1144E-05 | (176) | 2.9063E-06 | (175) | 3.6097E-06 | (150) |
| 4 | 7.6444E-07 | (176) | 2.7242E-06 | (176) | 3.7705E-06 | (149) |
| 5 | 4.8334E-07 | (176) | 1.8851E-06 | (176) | 2.4475E-06 | (150) |
| 5 | 4.8334E-07 | (176) | 1.8851E-06 | (176) | 2.4475E-06 | (150) |
| 7 | 2.1474E-07 | (200) | 8.4277E-06 | (200) | 1.1399E-05 | (184) |
| 7 | 2.1474E-07 | (200) | 8.4277E-06 | (200) | 1.1399E-05 | (184) |
| 9 | 5.1474E-07 | (200) | 2.0425E-06 | (200) | 2.6041E-06 | (184) |
| 9 | 5.1474E-07 | (200) | 2.0425E-06 | (200) | 2.6041E-06 | (184) |
| 10 | 4.8383E-07 | (251) | 1.8375E-06 | (251) | 2.3795E-06 | (171) |
| 10 | 4.8383E-07 | (251) | 1.8375E-06 | (251) | 2.3795E-06 | (171) |

32 7.74051E-06 (148) 2.10270E-09 (148) 2.08362E-07 (148)
 34 1.02448E-06 (175) 1.03279E-07 (175) 1.45786E-07 (175)
 35 2.52480E-03 (238) 1.20133E-07 (238) 2.05835E-07 (238)
 36 2.19717E-08 (148) 2.05492E-07 (148) 2.04298E-07 (148)

PLANT NAME: CORNING CLASS-DANVILLE PCLLUTANT: SO2 EMISS AIR QUALITY UNITS: GH/SEC
 YEARLY MAINTEN: 24-HOUR CONC= 4.8174E-06 DIRECTION= 17 DISTANCE= 0.7 KM DAY=13R AIR QUALITY UNITS: GH/HR*3

| RANGE | 0.3 KM | HIGHEST 24-HOUR CONCENTRATION AT EACH RECEIPT | 0.5 KM | 0.7 KM | 0.9 KM | 1.1 KM |
|-------|-------------------|---|-------------------|-------------------|-------------------|-------------------|
| DIR | 6.44350E-07 (148) | 2.10270E-09 (148) | 2.08362E-07 (148) | 2.04298E-07 (148) | 2.08362E-07 (148) | 2.04298E-07 (148) |
| 1 | 1.01347E-06 (175) | 2.03279E-07 (175) | 1.45786E-07 (175) | 1.45786E-07 (175) | 1.45786E-07 (175) | 1.45786E-07 (175) |
| 2 | 1.14441E-07 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) |
| 3 | 1.14441E-07 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) |
| 4 | 1.14441E-07 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) |
| 5 | 1.14441E-07 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) |
| 6 | 1.14441E-07 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) |
| 7 | 1.14441E-07 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) |
| 8 | 1.14441E-07 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) |
| 9 | 1.14441E-07 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) |
| 10 | 1.14441E-07 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) |
| 11 | 1.14441E-07 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) |
| 12 | 1.14441E-07 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) |
| 13 | 1.14441E-07 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) |
| 14 | 1.14441E-07 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) |
| 15 | 1.14441E-07 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) |
| 16 | 1.14441E-07 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) |
| 17 | 1.14441E-07 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) |
| 18 | 1.14441E-07 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) |
| 19 | 1.14441E-07 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) |
| 20 | 1.14441E-07 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) |
| 21 | 1.14441E-07 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) |
| 22 | 1.14441E-07 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) |
| 23 | 1.14441E-07 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) |
| 24 | 1.14441E-07 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) |
| 25 | 1.14441E-07 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) |
| 26 | 1.14441E-07 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) |
| 27 | 1.14441E-07 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) |
| 28 | 1.14441E-07 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) |
| 29 | 1.14441E-07 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) |
| 30 | 1.14441E-07 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) |
| 31 | 1.14441E-07 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) |
| 32 | 1.14441E-07 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) |
| 33 | 1.14441E-07 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) |
| 34 | 1.14441E-07 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) |
| 35 | 1.14441E-07 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) |
| 36 | 1.14441E-07 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) | 1.04748E-06 (238) |

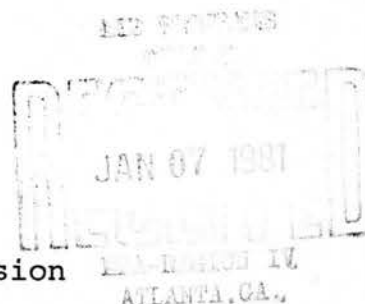
JACKIE SWIGART
SECRETARY



JOHN Y. BROWN, JR.
GOVERNOR

COMMONWEALTH OF KENTUCKY
DEPARTMENT FOR NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION
OFFICE OF THE SECRETARY
FRANKFORT, KENTUCKY 40601
TELEPHONE (502) 564-3350
December 16, 1980

Ms. Rebecca Hanmer
Regional Administrator
U. S. Environmental Protection Agency
345 Courtland Street, N.E.
Atlanta, Georgia 30365



RE: National Distillers Company SIP Revision

Rebecca
Dear Ms. Hanmer:

In compliance with the Clean Air Act Amendments of 1977, a revision to the State Implementation Plan for the attainment and maintenance of the National Ambient Air Quality Standards as it applies to the National Distillers Company, Old Crow Plant, in Woodford County, is hereby submitted to the U. S. Environmental Protection Agency. This revision has been prepared in accordance with 40 CFR 51 and the guidance documents issued by the U. S. Environmental Protection Agency.

This letter should serve to certify that all procedural requirements for adoption of this plan by the Commonwealth of Kentucky have been met. Opportunity for public participation and input has been provided through a public hearing (transcript attached). The revised emission limitations for the plant's boilers have been duly adopted by this Department as per the provisions of regulation 401 KAR 50:055, Section 6.

It is requested that the U. S. Environmental Protection Agency favorably consider the approval of this revision and publish same in the Federal Register. If you have any questions, please contact Mr. Norman E. Schell, Director, Division of Air Pollution Control.

Sincerely,

Jackie Swigart
Jackie Swigart
Secretary

Enclosures

cc: National Distillers



Kentucky Department for Natural Resources and Environmental Protection

Division of Air Pollution Control

National Distillers Products Company

RE: Old Crow Plant

Glenns Creek Road

P.O. Box 426

Frankfort, Kentucky 40601

DRAFT COPY

Pursuant to your application received by this office on April 17, 1980 the Division of Air Pollution, by authority of Kentucky Revised Statutes Chapter 224, authorizes the issuance of this operating permit for the operation of the equipment specified herein in accordance with the plans, specifications, and other information submitted with your application. This permit is subject to all conditions and operating limitations contained herein.

| <u>Point of Emission</u> | <u>Affected Facility</u> | <u>Conditions</u> |
|--------------------------|--|--|
| 02 (01) | Whole Grain Cleaning | 575 bu./hr. maximum thruput. |
| 02 (02) | Whole Grain Hammer Mills | 255 bu./hr. maximum thruput each. |
| 03 (11) | Spent Grain Drying (Rotary) | 51875 lb/hr. maximum thruput. |
| 04 (11e) | Spent Grain Receiving Cyclone | 6250 lb./hr. maximum thruput. |
| 04 (12c) | Spent Grain Bulk Loading Cyclone | 18750 lb./hr. maximum thruput. |
| 05 (13,14) | Combustion Engineering Boilers (#1 and #2) | 25 mm BTU/hr. maximum heat input each. |
| 06 (17) | Babcock-Wilcox Boiler (#5) | 100 mm BTU/hr. maximum heat input. |
| 07 | Whiskey Storage | 214,980 barrels maximum storage. |

GENERAL CONDITIONS:

- All air pollution control equipment shall be properly maintained and kept in good operating condition at all times.
- The facility shall maintain and make available for inspection by this Division all production records necessary to assure that the allowable annual production rates shall not be exceeded.
- The previous operating permit, 0-76-44, issued June 8, 1976 is hereby null and void.
- The permittee is hereby required to contact the Division of Water, and the Division of Hazardous Material and Waste Management in order to satisfy the requirements of those Divisions.

(GENERAL CONDITIONS CONTINUED ON REVERSE SIDE)

No deviation from the plans and specifications submitted with your application or the conditions specified herein is permitted, unless authorized in writing by the Division of Air Pollution. This permit shall become null and void at any time the terms and conditions contained herein are violated. All rights of inspection by the representatives of this Division of Air Pollution are reserved. Responsibility of satisfactory conformance to all Air Pollution Control Regulations must be borne by the permittee.

PERMIT NUMBER: 0-80-184

Issued this day of 19

FILE NUMBER: 102-4140-0009

REGION: Bluegrass

COUNTY: Woodford

SIC CODE: 2085

Jackie Swigart
Secretary, Department for Natural Resources
and Environmental Protection

Director, Division of Air Pollution Control

JACKIE SWIGART
SECRETARY



JOHN Y. BROWN, JR.
GOVERNOR

COMMONWEALTH OF KENTUCKY
DEPARTMENT FOR NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION
OFFICE OF THE SECRETARY
FRANKFORT, KENTUCKY 40601
TELEPHONE (502) 564-3350

Mr. Charles R. Jeter
Regional Administrator
U.S. Environmental Protection Agency
Region IV
345 Courtland Street, N.E.
Atlanta, Georgia 30308

*Received
March 5, 1982*

RE: Borden Chemical Company SIP Revision

Dear Mr. *Charles* Jeter:

In compliance with the Clean Air Act Amendments of 1977, a revision to the State Implementation Plan for the attainment and maintenance of the National Ambient Air Quality Standards as it applies to the Borden Chemical Company in Jefferson County, is hereby submitted to the U.S. Environmental Protection Agency. This revision has been prepared in accordance with 40 CFR 51 and the guidance documents issued by the U.S. Environmental Protection Agency.

This letter should serve to certify that all procedural requirements for adoption of this plan by the Commonwealth of Kentucky have been met. Opportunity for public participation and input has been provided through a public hearing (transcript attached). The revised emission limitation for the plant's 740 M gallon methanol storage tank has been duly adopted by this Department as per the provisions of Regulation 401 KAR 50:055, Section 6.

It is requested that the U.S. Environmental Protection Agency favorably consider the approval of this revision and publish same in the Federal Register. If you have any questions, please contact Mr. Norman E. Schell, Director, Division of Air Pollution Control.

Sincerely,

Jackie Swigart
Jackie Swigart, Secretary

JS:kk

Enclosures: Public Hearing Transcript
SIP Revision
Public Hearing Publication Proof

cc: Borden Chemical Company File
Jefferson County



AIR POLLUTION CONTROL DISTRICT OF JEFFERSON COUNTY

914 EAST BROADWAY
LOUISVILLE, KENTUCKY 40204
PHONE: (502) 587-3327



March 25, 1982

Mr. Melvin Russell
Air Programs Branch
U. S. EPA - Region IV
345 Courtland, NE
Atlanta, GA 30365

Dear Melvin,

On March 23 you asked that we send draft final operating permits, a banking permit showing the net ERC balance, and a completed ledger sheet with respect to Borden Chemical's SIP revision.

I have enclosed these items per your request.

Sincerely,

A handwritten signature in cursive script that reads "Mike".

Michael T. DeBusschere, P.E.
Air Pollution Control Officer

MTD:mc

Enc

cc: Theron Leshar

AIR POLLUTION CONTROL DISTRICT OF JEFFERSON COUNTY

914 East Broadway

Louisville, Kentucky 40204

EXHIBIT 6

PAID

BY _____

SEP 17 1981

AIR POLLUTION CONTROL DISTRICT
OF JEFFERSON COUNTY

BANKING PERMIT

Permit Fee \$ _____

Permit No. 391-81

Issue Date Sept. 1, 1981

EIS Plant 0028

Expiration Date N/A 19 _____

Permission is hereby given by the Air Pollution Control Board of the Air Pollution Control District of Jefferson County to issue this permit related to:

- Construct
 Operate
 Equipment: Process
 Control

Borden Chemical Company, 6200 Campground Road, Louisville, KY
in accordance with plans and specifications on file with Air Pollution Control District.

Permit covers Deposit of emissions into Emissions Bank by purchase from
B. F. Goodrich Company, per BFG letter dated 7/31/81 to APCDJC.

Rated capacity _____ Normal Oper. Hrs. per Yr. _____

Fuels Used: Primary _____

Secondary _____

| Allowable Emissions | TSP | SO2 | BANK | | | | Other | Basis: % Rated Capacity Hrs/Yr |
|---------------------|-------|-------|-------|-------|-------|-------|-------|--------------------------------|
| | | | HC | CO | NOx | | | |
| Lbs/Hr | _____ | _____ | _____ | _____ | _____ | _____ | _____ | |
| Tons/Yr | _____ | _____ | 25 | _____ | _____ | _____ | _____ | |
| Actual Emissions | _____ | _____ | _____ | _____ | _____ | _____ | _____ | |
| Lbs/Hr | _____ | _____ | _____ | _____ | _____ | _____ | _____ | |
| Tons/Yr | _____ | _____ | _____ | _____ | _____ | _____ | _____ | |

Control/Process Ref. Borden letter dated 8/7/81

Emission Bank Code Ref.

Bubble Ref.

Offsets 99999-001W 43101-0110

PSD _____

Applicant for Permit W. Bailey Barton, Director of Environmental Affairs

Appl. Dated August 7, 1981

Address Borden, Inc., 180 East Broad St., Columbus, Ohio 43215

W. A. Rauscher
Air Pollution Control Officer

This permit is granted under the conditions stipulated on the reverse hereof.

Form APCDJC 202

Rev. 2/80

AIR POLLUTION CONTROL DISTRICT OF JEFFERSON COUNTY

DRAFT

914 East Broadway

Louisville, Kentucky 40204

PERMIT

Permit No. _____ Permit Fee \$ 15.00
 Issue Date _____ 19 ____ EIS Plant 0028 Pt. _____
 Expiration Date _____ 19 ____

Permission is hereby given by the Air Pollution Control Board of the Air Pollution Control District of Jefferson County to:

Construct Operate Storage Equipment: Process Control

located at Borden Chemical, Division of Borden, Inc., 6200 Camp Ground Rd., Louisville, KY
 in accordance with plans and specifications on file with Air Pollution Control District. 40216

Permit covers vertical storage tank, 60' D x 35' high, 740 M gal. capacity;
used for methanol storage.

Rated capacity 740 M gal. Normal Oper. Hrs. per Yr. 8760

Fuels Used: Primary _____
 Secondary _____

| Allowable Emissions | | | | | | | Basis: % Rated Capacity Hrs/Yr |
|---------------------|-------|-----------------|--------|-------|-----------------|--------|--------------------------------|
| | TSP | SO ₂ | HC | CO | NO _x | Other: | |
| Lbs/Hr | _____ | _____ | - | _____ | _____ | _____ | _____ |
| Tons/Yr | _____ | _____ | 15.64 | _____ | _____ | _____ | _____ |
| Actual Emissions | | | | | | | |
| Lbs/Hr | _____ | _____ | - | _____ | _____ | _____ | _____ |
| Tons/Yr | _____ | _____ | 15.64* | _____ | _____ | _____ | _____ |

Control/Process Ref. Borden 9/10/73, 4/21/78, and 9/21/81 submittals

Emission Bank Code Ref. _____

Bubble Ref. _____

Offsets _____

PSD _____

James E. Szofer
Engineering Manager

Applicant for Permit _____ Appl. Dated _____

Address Same as above

*Total emissions are offset by withdrawal from Banked Emissions Ledger, code 43101-011.
 15.64 TPY actual (1.1 offset ratio) = 17.2 TPY withdrawal

Air Pollution Control Officer

AIR POLLUTION CONTROL DISTRICT OF JEFFERSON COUNTY

DRAFT

914 East Broadway

Louisville, Kentucky 40204

BANKING PERMIT

Permit No. _____ Permit Fee \$ _____
 Issue Date _____ 19 ____ EIS Plant 0028 Pt. _____
 Expiration Date N/A 19 ____

Permission is hereby given by the Air Pollution Control Board of the Air Pollution Control District of Jefferson County to:

Construct Operate Equipment: Process Control

located at Borden Chemical Company, 6200 Camp Ground Rd., Louisville, KY
 in accordance with plans and specifications on file with Air Pollution Control District.

Permit covers _____

HC Emissions Bank balance following offset withdrawal for
methanol storage tank emissions of permit

Rated capacity _____ Normal Oper. Hrs. per Yr. _____

Fuels Used: Primary _____
 Secondary _____

| Allowable Emissions | BANKED | | | | | | Basis: % Rated Capacity Hrs/Yr |
|---------------------|--------|-------|-------|-------|-------|--------|--------------------------------|
| | TSP | SO2 | HC | CO | NOx | Other: | |
| Lbs/Hr | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| Tons/Yr | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| Actual Emissions | | | | | | | |
| Lbs/Hr | _____ | _____ | 7.8 | _____ | _____ | _____ | _____ |
| Tons/Yr | _____ | _____ | _____ | _____ | _____ | _____ | _____ |

Control/Process Ref. Borden letter dated 8/7/81

Offsets Emission Bank Code Ref. 43101-011D 43101-011W Bubble Ref. _____
 PSD _____

Applicant for Permit W. Bailey Barton, Director of Environmental Affairs Appl. Dated August 7, 1981

Address Borden Inc., 180 East Broad St., Columbus, Ohio 43215

Air Pollution Control Officer

BANKED EMISSIONS LEDGER

ACTIVE

CLOSED

1. Pollutant Description Methanol Banking permit 391-81
 2. Deposit Code 4 3 1 0 1 - 0 1 1
 - 3.a. Date of Deposit 9/1/81 b. Closing Date _____
 - 4.a. Source of Banked Emissions B. F. Goodrich Chemical Company
 - b. Address Bells Lane, Louisville, KY
 - c. Plant EIS 0082
 - 5.a. Description of process generating banked emissions and permit nos. Emissions deposit purchased by Borden Chemical Company, 6200 Campground Road, EIS plant number 0028, from B. F. Goodrich Chemical Company, per B. F. Goodrich letter of 7/31/81 to the Air Pollution Control District of Jefferson County.
 - b. What caused emissions to be available for banking? Purchased from B. F. Goodrich Chemical Company and withdrawn from deposit code account 99999-001.
 6. Banked emissions prior to discounting 25.0 Tons/yr
 7. Initial discount — Tons/yr
 8. Balance (subtract Line 7 from Line 6) 25.0 Tons/yr
- For further explanation see Note nos: _____

First Withdrawal

9. Date 10/21/81 Buyer Borden Chemical Company Permit No. _____
 10. Emissions from source requiring offsets (but before applying offset ratio) 15.64 Tons/yr
 11. Offset ratio 1.1 : 1
 12. Offset emissions (multiply Line 10 by Line 11) 17.2 Tons/yr
 13. Balance (subtract Line 12 from Line 8) 7.8 Tons/yr
- For further explanation, see Note nos. one

Second Withdrawal

14. Date _____ Buyer _____ Permit No. _____
 15. Emissions from source requiring offsets (but before applying offset ratio) _____ Tons/yr
 16. Offset ratio _____ : 1
 17. Offset emissions (multiply Line 15 by Line 16) _____ Tons/yr
 18. Balance (subtract Line 17 from Line 13) _____ Tons/yr
- For further explanation, see Note nos. _____

Third Withdrawal

19. Date _____ Buyer _____ Permit No. _____
 20. Emissions from source requiring offsets (but before applying offset ratio) _____ Tons/yr
 21. Offset ratio _____ : 1
 22. Offset emissions (multiply Line 21 by Line 22) _____ Tons/yr
 23. Balance (subtract Line 23 from Line 19) _____ Tons/yr
- Enter here and on Line 24, page 2 _____ Tons/yr
- For further explanation, see Note nos. _____

RECORD OF COMMUNICATION

PHONE CALL DISCUSSION FIELD TRIP CONFERENCE
 OTHER (SPECIFY)

(Record of item checked above)

TO: John McCarthy
& Mike DeBusscheve

FROM: Melvin Russell

DATE 3/26/82
TIME 9:20 am

SUBJECT
Jeff. Co. Ky. NSR + PSD Regs. & Bubble for Borden Chemical

SUMMARY OF COMMUNICATION

I. NSR + PSD Regs. (EPA 2/11/82 Comment. Letter) - John McCarthy
John believes that the telephone conversations of March 15 & 16 resolved all EPA comments; they are addressing the comments in a letter to us.
Russell: concur with John's comment. We will mail a letter to them early next week, probably Tuesday, confirming our 3/15 & 16 phone conversations. They will send their response after reviewing our letter.

II. Bubble for Borden Chemical - Mike DeBusscheve
DeBusscheve: Jeff. Co. is sending the revised permit to EPA. EPA should receive next week.

CONCLUSIONS, ACTION TAKEN OR REQUIRED

INFORMATION COPIES

TO: File (Borden + NSR/PSD)

AIR POLLUTION CONTROL DISTRICT OF JEFFERSON COUNTY

914 East Broadway

BANKING

Louisville, Kentucky 40204

PERMIT

Permit Fee \$ 15.00

Permit No. 89-79
 Issue Date May 15 19 79

EIS Plant 0002 AID Pt. --

Expiration Date N/A 19 79

Permission is hereby given by the Air Pollution Control Board of the Air Pollution Control District of Jefferson County to:

Construct Operate Equipment: Process Control

AUG 27 1979
 AIR POLLUTION CONTROL DISTRICT
 OF JEFFERSON COUNTY, KY

located at B.F. Goodrich, Chemical Division, Bells

in accordance with plans and specifications on file with the Air Pollution Control District.

Permit covers Deposit of emission into Emissions Bank by cancellation of
permits and installation of additional recovery equipment. This permit
is based on Tables II, III, and IV of the report entitled BFG offset

Permit Modifications and Bankable Deposit Tabulation dated 3/12/79,

which contains confidential information, but is incorporated as part
of this permit

Rated capacity _____ Normal Oper. Hrs. per Yr. _____

Units Used: Primary _____

| | Secondary | | | | | | Other: Bank | Basis: Rated Capacity Hrs/ Chlorinated Sa HC Not regulated |
|---------------------|-----------|-----------------|------------|-----|-----------------|-----|-------------|--|
| | Bank TSP | SO ₂ | Bank HC | CO | NO _x | | | |
| Allowable Emissions | --- | --- | --- | --- | --- | --- | 669(actual) | |
| Lbs/Hr | --- | --- | --- | --- | --- | --- | | |
| Tons/Yr | <u>95</u> | --- | <u>102</u> | --- | --- | --- | | |
| Actual Emissions | --- | --- | --- | --- | --- | --- | | |
| Lbs/Hr | --- | --- | --- | --- | --- | --- | | |
| Tons/Yr | --- | --- | --- | --- | --- | --- | | |

Control/Process Ref. _____ Emission Bank Code Ref. _____ Bubble Ref. _____

Offsets 11101-001D 99999-001E

PSD 43101-001D

Applicant for Permit _____ Appl. Dated _____

Address _____

[Signature]

Air Pollution Control Officer

Unless stipulated on the reverse hereof.

1. Pollutant Description Methanol Banking permit 391-81
2. Deposit Code 4 3 1 0 1 - 0 1 1
- 3.a. Date of Deposit 9/1/81 b. Closing Date _____
- 4.a. Source of Banked Emissions B. F. Goodrich Chemical Company
- b. Address Bells Lane, Louisville, KY
- c. Plant EIS 0082
- 5.a. Description of process generating banked emissions and permit nos. Emissions deposit purchased by Borden Chemical Company, 6200 Campground Road, EIS plant number 0028, from B. F. Goodrich Chemical Company, per B. F. Goodrich letter of 7/31/81 to the Air Pollution Control District of Jefferson County.
- b. What caused emissions to be available for banking? Purchased from B. F. Goodrich Chemical Company and withdrawn from deposit code account 99999-001.

| | | | |
|----|---------------------------------------|-------------|---------|
| 6. | Banked emissions prior to discounting | <u>25.0</u> | Tons/yr |
| 7. | Initial discount | <u>—</u> | Tons/yr |
| 8. | Balance (subtract Line 7 from Line 6) | <u>25.0</u> | Tons/yr |

For further explanation see Note nos: _____

First Withdrawal

9. Date 10/21/81 Buyer Borden Chemical Company Permit No. _____
 10. Emissions from source requiring offsets (but before applying offset ratio) 15.64 Tons/yr
 11. Offset ratio 1.1 : 1
 12. Offset emissions (multiply Line 10 by Line 11) 17.2 Tons/yr
 13. Balance (subtract Line 12 from Line 8) 7.8 Tons/yr
- For further explanation, see Note nos. one

Second Withdrawal

14. Date _____ Buyer _____ Permit No. _____
 15. Emissions from source requiring offsets (but before applying offset ratio) _____ Tons/yr
 16. Offset ratio : 1
 17. Offset emissions (multiply Line 15 by Line 16) _____ Tons/yr
 18. Balance (subtract Line 17 from Line 13) _____ Tons/yr
- For further explanation, see Note nos. _____

Third Withdrawal

19. Date _____ Buyer _____ Permit No. _____
 20. Emissions from source requiring offsets (but before applying offset ratio) _____ Tons/yr
 21. Offset ratio : 1
 22. Offset emissions (multiply Line 21 by Line 20) _____ Tons/yr
 23. Balance (subtract Line 22 from Line 18) _____ Tons/yr
- Enter here and on Line 24, page 2 _____ Tons/yr
- For further explanation, see Note nos. _____

CHARLOTTE E. BALDWIN
SECRETARY



*logged in WR
MPC 5/2/84*

MARTHA LAYNE COLLINS
GOVERNOR

*Cook
by CAB
6/7/84*

COMMONWEALTH OF KENTUCKY
NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET
OFFICE OF THE SECRETARY
FRANKFORT, KENTUCKY 40601
TELEPHONE (502) 564-3350

April 25, 1984

Mr. Charles Jeter
Regional Administrator
U.S. Environmental Protection Agency
Region IV
345 Courtland Street, N.E.
Atlanta, Georgia 30365

RE: SIP Revision as it applies to the granting of
Economic and/or Technological Variances as
provided for under Regulation 401 KAR 61:160,
Existing Perchloroethylene Dry Cleaners

Dear Mr. Jeter:

In compliance with the Clean Air Act Amendments of 1977, a revision to the State Implementation Plan for the attainment and maintenance of the National Ambient Air Quality Standards is hereby submitted to the U.S. Environmental Protection Agency for the purpose of granting variances to the following dry cleaners:

Jiffy The Cleaners
2515 Chelsea Drive
Ft. Mitchell, KY 41017
I.D. #079-2020-0130

Hiland Cleaners
4 Murnan Road
Cold Springs, KY 41076
I.D. #079-0520-0073

This revision has been prepared in accordance with 40 CFR 51 and the guidance documents issued by the U.S. Environmental Protection Agency.

This letter should serve to certify that all procedural requirements for adoption of this plan by the Commonwealth of Kentucky have been met. Opportunity for public participation and input has been provided through public hearings (transcripts attached). The revision to the State Implementation Plan as it applies to the above dry cleaners has been duly adopted by this Cabinet.

Mr. Charles Jeter
Page 2

It is requested that the U.S. Environmental Protection Agency favorably consider the approval of this revision and publish the same in the Federal Register. If you have any questions, please contact Mr. T. Michael Taimi, Commissioner, Department for Environmental Protection.

Sincerely,

Charlotte E. Baldwin

Charlotte Baldwin
Secretary

CB:kk

Enclosures: Final Determinations - 2



Kentucky Natural Resources and Environmental Protection Cabinet
 Department for Environmental Protection
 Division of Air Pollution Control

PERMIT

JIFFY THE CLEANERS
 2515 Chelsea Drive
 Ft. Mitchell, Kentucky 41017

Pursuant to your application which was concluded by this office to be complete on **February 6, 1984**, the Natural Resources and Environmental Protection Cabinet, by authority of Kentucky Revised Statutes Chapter 224, issues this permit for the **construction** of the equipment specified herein in accordance with the plans, specifications, and other information submitted with your application. This permit is subject to all conditions and operating limitations contained herein.

| <u>POINT OF EMISSION</u> | <u>AFFECTED FACILITY</u> | <u>CONDITIONS</u> |
|--------------------------|--|---|
| 01 (1) | Suprema Dry-To-Dry Machine - Model 850-S-2 | 1. The maximum annual usage rate of perchloroethylene shall not exceed 260 gal/year (1.75 tons/yr). |

No deviation from the plans and specifications submitted with your application or the conditions specified herein is permitted, unless authorized in writing by the Division of Air Pollution Control. This permit shall become null and void at any time the terms and conditions contained herein are violated. All rights of inspection by the representatives of the Division of Air Pollution Control are reserved. Responsibility of satisfactory conformance to all Air Pollution Control Regulations must be borne by the permittee.

PERMIT NUMBER: C-83-115
 FILE NUMBER: 079-2020-0130
 REGION: Cincinnati
 COUNTY: Kenton
 SIC CODE: 7216

Issued this 30th day of March 19 84

Charlotte E. Baldwin
 Secretary, Natural Resources & Environmental Protection Cabinet

[Signature]
 Director, Division of Air Pollution Control

PERMIT NUMBER: C-83-115

PERMIT - Continued

GENERAL CONDITIONS:

1. The owner and/or operator of the affected facilities specified on this permit shall furnish to the Division of Air Pollution Control the following:
 - a) Written notification, postmarked within 15 days, of the date construction commenced. (See Condition 2)
 - b) Written notification of the actual date of start-up of each of the affected facilities listed on this permit. This notification must be postmarked within 15 days after this start-up. (See Condition 3)
 - c) Within 15 days after demonstration of compliance, an application for a permit to operate. (See Condition 3)
2. Unless construction is commenced on or before one year from the date of this permit or if construction is commenced and then stopped for any consecutive period of six months or more, then this construction permit shall be null and void.
3. This permit shall allow time for the initial start-up and operation of the affected facilities specified herein for the period of time required to adjust, calibrate, or modify the control equipment to attain normal operating conditions and to demonstrate compliance, but not to exceed 30 days.
4. Operation of an affected facility is considered to have commenced at any time air pollutants are generated and emitted to the atmosphere by that affected facility.
5. All air pollution control equipment and all air pollution control measures proposed by the application in response to which this permit is issued shall be in place and operational at any time an affected facility is operated.
6. Those affected facilities specified herein whose continued compliance has been demonstrated to the Division's satisfaction are hereby authorized by this permit to operate for 90 calendar days following such compliance demonstration or for such additional period as may be authorized by 401 KAR 50:035, Section 1(3)(b). Authorization for operation provided by 401 KAR 50:035, Section 1(3)(b) shall expire thirty (30) days after the date notification is made to the source by the Department that an operating permit fee balance is due or immediately upon notification to the source by the Department that the source operating permit is denied.
7. Those affected facilities specified herein for which compliance has not been demonstrated during the time period specified by General Condition 3 shall not be operated unless authorized in writing by the Director.
8. The permittee shall maintain and make available for inspection by this Division all production records necessary to assure that the allowable annual production rate will not be exceeded.
9. Except for Regulation 401 KAR 59:240 Section 3(2) and 3(3), in no way does this permit relieve the permittee from compliance with all applicable emission and air quality standards.

PERMIT NUMBER: C-83-115

PERMIT - Continued

10. This authority to construct is based solely on the Kentucky Air Pollution Control Regulations adopted pursuant to KRS 224.033 and codified at 401 KAR 50:035 or federal regulations promulgated pursuant to the Clean Air Act and codified at 40 CFR 52.21, 40 CFR 60, and 40 CFR 61, for which authority has been delegated to this agency. It does not constitute authorization for construction from other agencies of this Cabinet, other Cabinets, or any other federal, state or local regulatory agency which may have regulations that apply to this construction.
11. Good housekeeping practices shall be maintained which shall include leak preventions and cleanup of solvent spills immediately.
12. In no way does this permit relieve the permittee from the responsibility of controlling emissions at all times in accordance with the Fugitive Emissions Regulation, 401 KAR 63:010.
13. This permit shall become effective at such time as the U.S. Environmental Protection Agency approves this State Implementation Plan (SIP) Revision.

MARY HELEN MILLER
SECRETARY



MARTHA LAYNE COLLINS
GOVERNOR

COMMONWEALTH OF KENTUCKY
NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET

OFFICE OF THE SECRETARY
FRANKFORT, KENTUCKY 40601

TELEPHONE (502) 564-3350

June 29, 1987

Mr. Jack Ravan
Administrator
U.S. Environmental Protection Agency
Region IV
345 Courtland Street, N.E.
Atlanta, Georgia 30365

RE: Tennessee Valley Authority (TVA)
Paradise Steam Plant
I.D.# 072-2960-0006

Dear Mr. Ravan:

In compliance with the Clean Air Act Amendments of 1977, a revision to the State Implementation Plan (SIP) for the attainment and maintenance of the National Ambient Air Quality Standards is hereby submitted to the U.S. Environmental Protection Agency for the purpose of granting the redistribution of allowable sulfur dioxide emissions to the TVA - Paradise Steam Plant. This revision has been prepared in accordance with 40 CFR 51 and the guidance documents issued by the U.S. Environmental Protection Agency.

This letter should serve to certify that all procedural requirements for adoption of this plan by the Commonwealth of Kentucky have been met. Opportunity for public participation and input has been provided through a public hearing (transcript enclosed). The revision to the State Implementation Plan as it applies to the above referenced company has been duly adopted by this Cabinet pursuant to the provisions of Regulation 401 KAR 61:015, Section 3.

It is requested that the U.S. Environmental Protection Agency favorably consider the approval of this revision and publish the same in the Federal Register. If you have any questions, please contact Mr. Roger B. McCann, Director, Division for Air Quality.

Sincerely,

Mary Helen Miller
Secretary

MHM:kk

Enclosures

RECEIVED
MAY 5 11 18 AM '87
AIR QUALITY CONTROL





**Kentucky Natural Resources and Environmental Protection Cabinet
Department for Environmental Protection
Division for Air Quality**

PERMIT

**TENNESSEE VALLEY AUTHORITY
201 Summer Place Building
Knoxville, Tennessee 37902**

RE: Paradise Steam Plant

Pursuant to your application which was determined to be complete by this office on **December 5, 1986**, the Natural Resources and Environmental Protection Cabinet issues this permit for the **operation** of the equipment specified herein in accordance with the plans, specifications, and other information submitted with your application. This permit has been issued under the provisions of KRS Chapter 224.033 and regulations promulgated pursuant thereto and is subject to all conditions and operating limitations contained herein. Issuance of this permit does not relieve the permittee from the responsibility of obtaining any other permits, licenses, or approvals required by this Cabinet and/or other state, federal, and local agencies.

| <u>POINT OF EMISSION</u> | <u>AFFECTED FACILITY</u> | <u>CONDITIONS</u> |
|--------------------------|--|---|
| 01 (01) | Indirect Heat Exchanger (Unit 1) | 6,305 mmBTU/hr maximum heat input. |
| 02 (02) | Indirect Heat Exchanger (Unit 2) | 6,305 mmBTU/hr maximum heat input. |
| 03 (03) | Indirect Heat Exchanger (Unit 3) | 10,390 mmBTU/hr maximum heat input. |
| 04 (20) | Coal Conveying Transfer Point (Transfer Station A) | 1. 2,000 tons/hr and 13,000,000 tons/yr maximum coal throughputs.
2. Particulate emissions shall not exceed 0.45 lb/hr and 1.48 tons/yr. |

No deviation from the plans and specifications submitted with your application or the conditions specified herein is permitted, unless authorized in writing by the Division for Air Quality. This permit shall become null and void at any time the terms and conditions contained herein are violated. All rights of inspection by the representatives of the Division for Air Quality are reserved. Responsibility for satisfactory conformance with all Air Quality Regulations must be borne by the permittee.

PERMIT NUMBER: O-87-012
FILE NUMBER: 072-2960-0006
REGION: Paducah/Cairo
COUNTY: Muhlenberg
SIC CODE: 4911

Issued this 29th day of June 19 87



Roger B. McCann, Director
Division for Air Quality

PERMIT - Continued

| <u>POINT OF EMISSION</u> | <u>AFFECTED FACILITY</u> | <u>CONDITIONS</u> |
|--------------------------|--|--|
| 05 (21) | Coal Crusher
(Transfer Station B) | 1. 2,000 tons/hr and 6,500,000 tons/yr maximum coal throughputs.
2. Particulate emissions shall not exceed 7.02 lbs/hr and 11.41 tons/yr. |
| 06 (22) | Coal Conveying Transfer Point (Transfer Station G) | 1. 2,000 tons/hr and 13,000,000 tons/yr maximum coal throughputs.
2. Particulate emissions shall not exceed 0.31 lb/hr and 1.02 tons/yr. |
| 07 (23) | Coal Conveying Transfer Point (Transfer Station H) | 1. 2,000 tons/hr and 13,000,000 tons/yr maximum coal throughputs.
2. Particulate emissions shall not exceed 0.31 lb/hr and 1.02 tons/yr. |
| 08 (24,25) | Coal Storage Silo | 1. 2,000 tons/hr and 6,500,000 tons/yr maximum coal throughputs.
2. Particulate emissions shall not exceed 0.45 lb/hr and 0.74 ton/yr. |
| 09 (26,27) | Coal Storage Silo | 1. 2,000 tons/yr and 6,500,000 tons/yr maximum coal throughputs.
2. Particulate emissions shall not exceed 0.22 lb/hr and 0.36 ton/yr. |
| 10 (28) | Coal Conveying Transfer Point (Transfer Station J) | 1. 2,000 tons/hr and 13,000,000 tons/yr maximum coal throughputs.
2. Particulate emissions shall not exceed 0.27 lb/hr and 0.88 ton/yr. |
| 11 (29) | Coal Reclaim Hopper | 1. 2,000 tons/hr and 6,500,000 tons/yr maximum coal throughputs.
2. Particulate emissions shall not exceed 0.27 lb/hr and 0.44 ton/yr. |
| 12 (30) | Coal Conveying Transfer Point (Transfer Station K) | 1. 2,000 tons/hr and 13,000,000 tons/yr maximum coal throughputs.
2. Particulate emissions shall not exceed 0.27 lb/hr and 0.88 ton/yr. |
| 13 (31) | Coal Conveying Transfer Point (Transfer Station M) | 1. 1,800 tons/hr and 13,000,000 tons/yr maximum coal throughputs.
2. Particulate emissions shall not exceed 0.24 lb/hr and 0.88 tons/yr. |

PERMIT NUMBER:

PERMIT - Continued

| <u>POINT OF EMISSION</u> | <u>AFFECTED FACILITY</u> | <u>CONDITIONS</u> |
|--------------------------|---|---|
| 14 (32) | Coal Crusher
(Transfer Station L) | 1. 1,800 tons/hr and 13,000,000 tons/yr
maximum coal throughputs.
2. Particulate emissions shall not
exceed 1.58 lbs/hr and 5.7 tons/yr. |
| 15 (06,9c) | Three Coal Receiving Hoppers
And Reclaim Hopper | 3,000 tons/hr and 17,000,000 tons/yr
maximum coal throughputs. |
| 16 (07,8c) | Three Coal Breakers
and Five Conditioners | 2,000 tons/hr and 17,000,000 tons/yr
maximum coal throughputs. |
| 17 (8a,b & d) | Coal Conveying and
Bunker Room | 2,000 tons/hr and 17,000,000 tons/yr
maximum coal throughputs. |
| 18 (9a, b & d, 10) | Coal Stockpile | 2,000 tons/hr and 17,000,000 tons/yr
maximum coal throughputs. |
| 19 (11a & b) | Two Lime Storage Silos | 5 tons/hr and 120 tons/yr maximum
lime throughputs, each. |
| 20 (12,13) | Limestone Receiving | 900 tons/hr and 919,800 tons/yr
maximum limestone throughputs. |
| 21 (14) | Limestone Conveying
Transfer Point | 900 tons/hr and 919,800 tons/yr
maximum limestone throughputs. |
| 22 (15,19) | Limestone Stock-out Conveyor
and Storage | 900 tons/hr and 919,800 tons/yr
maximum limestone throughputs. |
| 23 (16) | Limestone Silo Loading | 900 tons/hr and 919,800 tons/yr
maximum limestone throughputs. |
| 24 (17) | Limestone Silo Unloading
(Vibrating Feeders) | 240 tons/hr and 919,800 tons/yr
maximum limestone throughputs. |
| 25 (18) | Limestone Surge Hopper
and Weigh Hopper | 300 tons/hr and 919,800 tons/yr
maximum limestone throughputs. |
| 26 (4) | Two Heating Indirect Heat
Exchangers A & B (#2 Fuel Oil) | 25.8 mmBTU/hr maximum heat input,
each. |
| 27 (5) | Two Auxiliary Indirect Heat
Exchangers A & B (#2 Fuel Oil) | 320 mmBTU/hr maximum heat input,
each. |

PERMIT NUMBER:

PERMIT - Continued

| <u>POINT OF EMISSION</u> | <u>AFFECTED FACILITY</u> | <u>CONDITIONS</u> |
|--------------------------|---|--------------------------------------|
| 28 (-) | Heating Indirect Heat Exchanger (#2 Fuel Oil) | 25.8 mmBTU/hr maximum heat input. |
| 29 (33-43) | Eleven Dravo #2 Oil-Fired Space Heaters | 2 mmBTU/hr maximum heat input, each. |
| 30 (-) | Ash Handling System | |
| 32 (-) | Nineteen Degreasing Stations | |

GENERAL CONDITIONS:

1. The permittee shall maintain and make available for inspection by this Division all records necessary to assure that the allowable production and emission rates will not be exceeded.
2. In no way does this permit relieve the permittee from compliance with all applicable emission and air quality standards.
3. All air pollution control equipment shall be properly maintained, kept in good operating conditions at all times, and in use at all times when its associated affected facility is operating.
4. Malfunction and shut down of air pollution control equipment shall be promptly reported to the Division in accordance with Regulation 401 KAR 50:055, Section 1.
5. Except as otherwise specified, fugitive emissions shall be controlled in accordance with Regulation 401 KAR 63:010.
6. Opacity and sulfur dioxide emissions from the coal-fired indirect heat exchangers (Em.Pt. 01(01), 02(02), and 03(03)) shall be monitored and reported in accordance with Regulation 401 KAR 61:005, Section 3 and/or 61:015, Section 6.
7. Particulate emissions from the coal-fired indirect heat exchangers (Em.Pt. 01(01), 02(02), and 03(03)) shall not exceed 0.11 lbs/mmBTU.
8. Sulfur dioxide emissions from the coal-fired indirect heat exchangers (Em.Pt. 01(01) and 02(02)) shall not exceed 1.2 lbs/mmBTU, each.
9. Sulfur dioxide emissions from the coal-fired indirect heat exchanger (Em.Pt. 03(03)) shall not exceed 5.4 lbs/mmBTU.
10. Emissions from the #2 oil fired indirect heat exchangers (Em.Pt. 26(4), 27(5), and 28(-)) shall not exceed the following limitations:
 - a) Particulate - 0.11 lbs/mmBTU
 - b) Sulfur Dioxide - 2.1 lbs/mmBTU

PERMIT - Continued

11. Emissions from the Dravo #2 oil-fired space heaters (Em.Pt. 29(33-43)) shall not exceed the following limitations:

- a) Particulate - 0.1 lbs/mmBTU
 b) Sulfur Dioxide - 0.8 lbs/mmBTU

12. Particulate emissions shall not exceed the following limits:

| <u>Emission Point</u> | <u>lbs/hr</u> | <u>tons/yr</u> |
|-----------------------|---------------|----------------|
| 16 (07,8c) | 92.7 | 263 |
| 17 (8a, b & d) | 86.9 | 369 |
| 19 (11a & b) | 9.74 (each) | 0.117 (each) |

13. The total particulate emissions from the coal washing plant (Em.Pt. 04(20) through 14(32)) shall not equal or exceed 100 lbs/hr, 1,000 lbs/day, and 50 tons/yr.
14. The total particulate emissions from the limestone handling facilities (Em.Pts. 20(12,13) through 25(18)) shall not equal or exceed 25 tons/yr.
15. Visible emissions from Em.Pt. 04(20) through 14(32), 19(11a & b) through 21(14) and 23(16) through 25(18) shall not equal or exceed 20% opacity.
16. Visible emissions from Em.Pt. 16(07,8c) and 17(8a,b&d) shall not equal or exceed 40% opacity.
17. Visible emissions from Em.Pt. 03(03), 26(4), 27(5), 28(-), and 29(33-43) shall not exceed 20% opacity.
18. Visible emissions from the coal-fired indirect heat exchanger (Em.Pt. 01(01)) shall not exceed 61% opacity.
19. Visible emissions from the coal-fired indirect heat exchanger (Em.Pt. 02(02)) shall not exceed 50% opacity.
20. The adjusted opacity standard for the coal-fired indirect heat exchangers (Em.Pt. 01(01) and 02(02)) shall not become effective until final approval is published in the Code of Federal Regulations by the United States Environmental Protection Agency. Until that time, opacity from all units shall not exceed 20%.
21. The alternate sulfur dioxide limits for the coal-fired indirect heat exchangers (Em.Pt. 01(01), 02(02), and 03(03)) shall not become effective until final approval is published in the Code of Federal Regulations by the United States Environmental Protection Agency. Until that time, sulfur dioxide emissions shall not exceed 3.1 lbs/mmBTU.
22. Within thirty (30) days following the conclusion of each month, the permittee shall submit a report indicating the amount of limestone processed in the limestone handling facilities (Em. Pts. 20(12,13) through 25(18)).

O-87-012

PERMIT NUMBER:

PERMIT - Continued

23. Limitations on emissions of particulate matter and sulfur dioxide shall be as measured by only such methods as may be specified or approved by the EPA and the Division.
24. The annual emission and production limits listed on this permit shall be based on emission and production during any consecutive 12 month period.

JACKIE SWIGART
SECRETARY



Rec'd 1/27/83

JOHN Y. BROWN, JR.
GOVERNOR

TUE: 10:18 FEB.

COMMONWEALTH OF KENTUCKY
NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET
OFFICE OF THE SECRETARY
FRANKFORT, KENTUCKY 40601
TELEPHONE (502) 564-3350

Mr. Charles Jeter
Regional Administrator
U.S. Environmental Protection Agency
Region IV
345 Courtland Street, N.E.
Atlanta, Georgia 30365

RE: SIP Revision as it applies to the granting of
Economic and/or Technological Variances as
provided for under Regulation 401 KAR 61:160,
Existing Perchloroethylene Dry Cleaners.

Dear Mr. ^{Charles}Jeter:

In compliance with the Clean Air Act Amendments of 1977, a revision to the State Implementation Plan for the attainment and maintenance of the National Ambient Air Quality Standards is hereby submitted to the U.S. Environmental Protection Agency for the purpose of granting variances to the following dry cleaners:

Perfect Cleaners
801 Highway
Covington, Kentucky 41011

Community Cleaners
1506 Holman Street
Covington, Kentucky 41011

This revision has been prepared in accordance with 40 CFR 51 and the guidance documents issued by the U.S. Environmental Protection Agency.

This letter should serve to certify that all procedural requirements for adoption of this plan by the Commonwealth of Kentucky have been met. Opportunity for public participation and input has been provided through a public hearing (transcript attached). The revision to the State Implementation Plan as it applies to the above dry cleaners has been duly adopted by this Cabinet.

It is requested that the U.S. Environmental Protection Agency favorably consider the approval of this revision and publish same in the Federal Register. If you have any questions, please contact Mr. T. Michael Taimi, Commissioner, Department for Environmental Protection.

Sincerely,


Jackie Swigart, Secretary

JS:kk

Enclosures: Public Hearing Transcript
 SIP Revision
 Public Hearing Publication Proof

V. COPY OF PERMIT



Kentucky Natural Resources and Environmental Protection Cabinet
 Department for Environmental Protection
 Division of Air Pollution Control

PERMIT

PERFECT CLEANERS
 801 Highway
 Covington, Kentucky 41011

Pursuant to your application which was concluded by this office to be complete on November 9, 1982, the Natural Resources and Environmental Protection Cabinet, by authority of Kentucky Revised Statutes Chapter 224, issues this permit for the operation of the equipment specified herein in accordance with the plans, specifications, and other information submitted with your application. This permit is subject to all conditions and operating limitations contained herein.

| <u>POINT OF EMISSION</u> | <u>AFFECTED FACILITY</u> | <u>CONDITIONS</u> |
|--------------------------|----------------------------------|---|
| 01 (1) | Perchloroethylen
Dry Cleaning | Maximum thruput of perchloroethylene shall not exceed 585 gallons/yr. |

GENERAL CONDITIONS:

- All control devices shall be properly maintained, kept in good operating condition, and used in conjunction with their associated processes at all times.
- The requirements of Section 3(2) and (3) of Regulation 401 KAR 61:160, Existing Perchloroethylene Dry Cleaning Plants, are hereby waived. However the permittee is hereby required to adhere to all other requirements in Section 3.
- In no way does this permit relieve the company from the responsibility of controlling emissions at all times in accordance with the Fugitive Emissions Regulation, 401 KAR 63:010.

No deviation from the plans and specifications submitted with your application or the conditions specified herein is permitted, unless authorized in writing by the Division of Air Pollution Control. This permit shall become null and void at any time the terms and conditions contained herein are violated. All rights of inspection by the representatives of the Division of Air Pollution Control are reserved. Responsibility of satisfactory conformance to all Air Pollution Control Regulations must be borne by the permittee.

Issued this 12th day of January 19 83

PERMIT NUMBER: 0-82-259

FILE NUMBER: 079-2020-0129

REGION: Cincinnati

COUNTY: Kenton

SIC CODE: 7216

Jackie Swigart
 Secretary, Natural Resources & Environmental Protection Cabinet

[Signature]
 Director, Division of Air Pollution Control

PERMIT NUMBER: 0-82-259

PERMIT - Continued

4. The company shall maintain and make available for inspection by this Division all production records necessary to assure that the allowable annual production rate will not be exceeded.
5. Maintain good housekeeping practices which would include leak preventions and cleanup of solvent spills immediately.
6. ✓ The emission limitations specified herein shall become effective at such time as the U.S. Environmental Protection Agency approves this State Implementation Plant (SIP) Revision.

VI. OPERATING PERMIT 0-81-73



**Kentucky Department for Natural Resources and
Environmental Protection**
Division of Air Pollution Control

Community Cleaners
1506 Holman
Covington, Kentucky 41011

RE: Same as above

Pursuant to your application received by this office on April 21, 1981 the Division of Air Pollution, by authority of Kentucky Revised Statutes Chapter 224, authorizes the issuance of this operating permit for the operation of the equipment specified herein in accordance with the plans, specifications, and other information submitted with your application. This permit is subject to all conditions and operating limitations contained herein.

| <u>Point of Emission</u> | <u>Affected Facility</u> | <u>Conditions</u> |
|--------------------------|--|--|
| 01 (1 & 2) | Perchloroethylene Dry Cleaning Systems | Annual usage of perchloroethylene shall not exceed 1.4 tons/yr (206 gallons/yr). |

GENERAL CONDITIONS:

1. All control devices shall be properly maintained, kept in good operating condition, and used in conjunction with their associated processes at all times.
2. The permittee is hereby required to contact the Division of Water and the Division of Waste Management in order to satisfy the requirements of those Divisions.
3. In no way does this permit relieve the permittee from compliance with all applicable emission and air quality standards.
4. Compliance with the provisions of 401 KAR 61:160, Existing perchloroethylene dry cleaning systems shall be demonstrated no later than December 31, 1982.
5. Good housekeeping procedures shall be practiced which include leak preventions and cleanup of solvent spills immediately.
6. The Company shall maintain and make available for inspection by this Division all production records necessary to assure that the allowable annual perchloroethylene usage rate will not be exceeded.

(GENERAL CONDITIONS CONTINUED ON REVERSE SIDE)

No deviation from the plans and specifications submitted with your application or the conditions specified herein is permitted, unless authorized in writing by the Division of Air Pollution. This permit shall become null and void at any time the terms and conditions contained herein are violated. All rights of inspection by the representatives of this Division of Air Pollution are reserved. Responsibility of satisfactory conformance to all Air Pollution Control Regulations must be borne by the permittee.

PERMIT NUMBER: 0-81-75

Issued this 4th day of June 19 81

FILE NUMBER: 079-2020-0117

REGION: Cincinnati

COUNTY: Kenton

SIC CODE: 7218

Jackie Swigart
Secretary, Department for Natural Resources
and Environmental Protection

Norman E. Schell
Director, Division of Air Pollution Control

GENERAL CONDITIONS: (Continued)

7. This permit shall become null and void at any time the permittee fails to complete a compliance schedule step date on or before the date indicated by the attached compliance schedule unless otherwise authorized in writing by the Director.
8. This permit shall become null and void at any time the permittee fails to report the completion of a compliance schedule step date within five (5) days following such completion unless otherwise authorized in writing by the Director.

MARY HELEN MILLER
SECRETARY



MARTHA LAYNE COLLINS
GOVERNOR

COMMONWEALTH OF KENTUCKY
NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET

OFFICE OF THE SECRETARY
FRANKFORT, KENTUCKY 40601

TELEPHONE (502) 564-3350

June 29, 1987

Mr. Jack Ravan
Administrator
U.S. Environmental Protection Agency
Region IV
345 Courtland Street, N.E.
Atlanta, Georgia 30365

RE: Tennessee Valley Authority (TVA)
Paradise Steam Plant
I.D.# 072-2960-0006

Dear Mr. Ravan:

In compliance with the Clean Air Act Amendments of 1977, a revision to the State Implementation Plan (SIP) for the attainment and maintenance of the National Ambient Air Quality Standards is hereby submitted to the U.S. Environmental Protection Agency for the purpose of granting the redistribution of allowable sulfur dioxide emissions to the TVA - Paradise Steam Plant. This revision has been prepared in accordance with 40 CFR 51 and the guidance documents issued by the U.S. Environmental Protection Agency.

This letter should serve to certify that all procedural requirements for adoption of this plan by the Commonwealth of Kentucky have been met. Opportunity for public participation and input has been provided through a public hearing (transcript enclosed). The revision to the State Implementation Plan as it applies to the above referenced company has been duly adopted by this Cabinet pursuant to the provisions of Regulation 401 KAR 61:015, Section 3.

It is requested that the U.S. Environmental Protection Agency favorably consider the approval of this revision and publish the same in the Federal Register. If you have any questions, please contact Mr. Roger B. McCann, Director, Division for Air Quality.

Sincerely,

Mary Helen Miller
Secretary

MHM:kk

Enclosures

RECEIVED
MAY 5 11 18 AM '87
AIR QUALITY CONTROL





**Kentucky Natural Resources and Environmental Protection Cabinet
Department for Environmental Protection
Division for Air Quality**

PERMIT

**TENNESSEE VALLEY AUTHORITY
201 Summer Place Building
Knoxville, Tennessee 37902**

RE: Paradise Steam Plant

Pursuant to your application which was determined to be complete by this office on **December 5, 1986**, the Natural Resources and Environmental Protection Cabinet issues this permit for the **operation** of the equipment specified herein in accordance with the plans, specifications, and other information submitted with your application. This permit has been issued under the provisions of KRS Chapter 224.033 and regulations promulgated pursuant thereto and is subject to all conditions and operating limitations contained herein. Issuance of this permit does not relieve the permittee from the responsibility of obtaining any other permits, licenses, or approvals required by this Cabinet and/or other state, federal, and local agencies.

| <u>POINT OF EMISSION</u> | <u>AFFECTED FACILITY</u> | <u>CONDITIONS</u> |
|--------------------------|--|---|
| 01 (01) | Indirect Heat Exchanger (Unit 1) | 6,305 mmBTU/hr maximum heat input. |
| 02 (02) | Indirect Heat Exchanger (Unit 2) | 6,305 mmBTU/hr maximum heat input. |
| 03 (03) | Indirect Heat Exchanger (Unit 3) | 10,390 mmBTU/hr maximum heat input. |
| 04 (20) | Coal Conveying Transfer Point (Transfer Station A) | 1. 2,000 tons/hr and 13,000,000 tons/yr maximum coal throughputs.
2. Particulate emissions shall not exceed 0.45 lb/hr and 1.48 tons/yr. |

No deviation from the plans and specifications submitted with your application or the conditions specified herein is permitted, unless authorized in writing by the Division for Air Quality. This permit shall become null and void at any time the terms and conditions contained herein are violated. All rights of inspection by the representatives of the Division for Air Quality are reserved. Responsibility for satisfactory conformance with all Air Quality Regulations must be borne by the permittee.

PERMIT NUMBER: O-87-012
FILE NUMBER: 072-2960-0006
REGION: Paducah/Cairo
COUNTY: Muhlenberg
SIC CODE: 4911

Issued this 29th day of June 19 87



Roger B. McCann, Director
Division for Air Quality

PERMIT - Continued

| <u>POINT OF EMISSION</u> | <u>AFFECTED FACILITY</u> | <u>CONDITIONS</u> |
|--------------------------|--|--|
| 05 (21) | Coal Crusher
(Transfer Station B) | <ol style="list-style-type: none"> 1. 2,000 tons/hr and 6,500,000 tons/yr maximum coal throughputs. 2. Particulate emissions shall not exceed 7.02 lbs/hr and 11.41 tons/yr. |
| 06 (22) | Coal Conveying Transfer Point (Transfer Station G) | <ol style="list-style-type: none"> 1. 2,000 tons/hr and 13,000,000 tons/yr maximum coal throughputs. 2. Particulate emissions shall not exceed 0.31 lb/hr and 1.02 tons/yr. |
| 07 (23) | Coal Conveying Transfer Point (Transfer Station H) | <ol style="list-style-type: none"> 1. 2,000 tons/hr and 13,000,000 tons/yr maximum coal throughputs. 2. Particulate emissions shall not exceed 0.31 lb/hr and 1.02 tons/yr. |
| 08 (24,25) | Coal Storage Silo | <ol style="list-style-type: none"> 1. 2,000 tons/hr and 6,500,000 tons/yr maximum coal throughputs. 2. Particulate emissions shall not exceed 0.45 lb/hr and 0.74 ton/yr. |
| 09 (26,27) | Coal Storage Silo | <ol style="list-style-type: none"> 1. 2,000 tons/yr and 6,500,000 tons/yr maximum coal throughputs. 2. Particulate emissions shall not exceed 0.22 lb/hr and 0.36 ton/yr. |
| 10 (28) | Coal Conveying Transfer Point (Transfer Station J) | <ol style="list-style-type: none"> 1. 2,000 tons/hr and 13,000,000 tons/yr maximum coal throughputs. 2. Particulate emissions shall not exceed 0.27 lb/hr and 0.88 ton/yr. |
| 11 (29) | Coal Reclaim Hopper | <ol style="list-style-type: none"> 1. 2,000 tons/hr and 6,500,000 tons/yr maximum coal throughputs. 2. Particulate emissions shall not exceed 0.27 lb/hr and 0.44 ton/yr. |
| 12 (30) | Coal Conveying Transfer Point (Transfer Station K) | <ol style="list-style-type: none"> 1. 2,000 tons/hr and 13,000,000 tons/yr maximum coal throughputs. 2. Particulate emissions shall not exceed 0.27 lb/hr and 0.88 ton/yr. |
| 13 (31) | Coal Conveying Transfer Point (Transfer Station M) | <ol style="list-style-type: none"> 1. 1,800 tons/hr and 13,000,000 tons/yr maximum coal throughputs. 2. Particulate emissions shall not exceed 0.24 lb/hr and 0.88 tons/yr. |

PERMIT NUMBER:

PERMIT - Continued

| <u>POINT OF EMISSION</u> | <u>AFFECTED FACILITY</u> | <u>CONDITIONS</u> |
|--------------------------|---|---|
| 14 (32) | Coal Crusher
(Transfer Station L) | 1. 1,800 tons/hr and 13,000,000 tons/yr
maximum coal throughputs.
2. Particulate emissions shall not
exceed 1.58 lbs/hr and 5.7 tons/yr. |
| 15 (06,9c) | Three Coal Receiving Hoppers
And Reclaim Hopper | 3,000 tons/hr and 17,000,000 tons/yr
maximum coal throughputs. |
| 16 (07,8c) | Three Coal Breakers
and Five Conditioners | 2,000 tons/hr and 17,000,000 tons/yr
maximum coal throughputs. |
| 17 (8a,b & d) | Coal Conveying and
Bunker Room | 2,000 tons/hr and 17,000,000 tons/yr
maximum coal throughputs. |
| 18 (9a, b & d, 10) | Coal Stockpile | 2,000 tons/hr and 17,000,000 tons/yr
maximum coal throughputs. |
| 19 (11a & b) | Two Lime Storage Silos | 5 tons/hr and 120 tons/yr maximum
lime throughputs, each. |
| 20 (12,13) | Limestone Receiving | 900 tons/hr and 919,800 tons/yr
maximum limestone throughputs. |
| 21 (14) | Limestone Conveying
Transfer Point | 900 tons/hr and 919,800 tons/yr
maximum limestone throughputs. |
| 22 (15,19) | Limestone Stock-out Conveyor
and Storage | 900 tons/hr and 919,800 tons/yr
maximum limestone throughputs. |
| 23 (16) | Limestone Silo Loading | 900 tons/hr and 919,800 tons/yr
maximum limestone throughputs. |
| 24 (17) | Limestone Silo Unloading
(Vibrating Feeders) | 240 tons/hr and 919,800 tons/yr
maximum limestone throughputs. |
| 25 (18) | Limestone Surge Hopper
and Weigh Hopper | 300 tons/hr and 919,800 tons/yr
maximum limestone throughputs. |
| 26 (4) | Two Heating Indirect Heat
Exchangers A & B (#2 Fuel Oil) | 25.8 mmBTU/hr maximum heat input,
each. |
| 27 (5) | Two Auxiliary Indirect Heat
Exchangers A & B (#2 Fuel Oil) | 320 mmBTU/hr maximum heat input,
each. |

PERMIT NUMBER:

PERMIT - Continued

| <u>POINT OF EMISSION</u> | <u>AFFECTED FACILITY</u> | <u>CONDITIONS</u> |
|--------------------------|---|--------------------------------------|
| 28 (-) | Heating Indirect Heat Exchanger (#2 Fuel Oil) | 25.8 mmBTU/hr maximum heat input. |
| 29 (33-43) | Eleven Dravo #2 Oil-Fired Space Heaters | 2 mmBTU/hr maximum heat input, each. |
| 30 (-) | Ash Handling System | |
| 32 (-) | Nineteen Degreasing Stations | |

GENERAL CONDITIONS:

1. The permittee shall maintain and make available for inspection by this Division all records necessary to assure that the allowable production and emission rates will not be exceeded.
2. In no way does this permit relieve the permittee from compliance with all applicable emission and air quality standards.
3. All air pollution control equipment shall be properly maintained, kept in good operating conditions at all times, and in use at all times when its associated affected facility is operating.
4. Malfunction and shut down of air pollution control equipment shall be promptly reported to the Division in accordance with Regulation 401 KAR 50:055, Section 1.
5. Except as otherwise specified, fugitive emissions shall be controlled in accordance with Regulation 401 KAR 63:010.
6. Opacity and sulfur dioxide emissions from the coal-fired indirect heat exchangers (Em.Pt. 01(01), 02(02), and 03(03)) shall be monitored and reported in accordance with Regulation 401 KAR 61:005, Section 3 and/or 61:015, Section 6.
7. Particulate emissions from the coal-fired indirect heat exchangers (Em.Pt. 01(01), 02(02), and 03(03)) shall not exceed 0.11 lbs/mmBTU.
8. Sulfur dioxide emissions from the coal-fired indirect heat exchangers (Em.Pt. 01(01) and 02(02)) shall not exceed 1.2 lbs/mmBTU, each.
9. Sulfur dioxide emissions from the coal-fired indirect heat exchanger (Em.Pt. 03(03)) shall not exceed 5.4 lbs/mmBTU.
10. Emissions from the #2 oil fired indirect heat exchangers (Em.Pt. 26(4), 27(5), and 28(-)) shall not exceed the following limitations:
 - a) Particulate - 0.11 lbs/mmBTU
 - b) Sulfur Dioxide - 2.1 lbs/mmBTU

PERMIT - Continued

11. Emissions from the Dravo #2 oil-fired space heaters (Em.Pt. 29(33-43)) shall not exceed the following limitations:

- a) Particulate - 0.1 lbs/mmBTU
 b) Sulfur Dioxide - 0.8 lbs/mmBTU

12. Particulate emissions shall not exceed the following limits:

| <u>Emission Point</u> | <u>lbs/hr</u> | <u>tons/yr</u> |
|-----------------------|---------------|----------------|
| 16 (07,8c) | 92.7 | 263 |
| 17 (8a, b & d) | 86.9 | 369 |
| 19 (11a & b) | 9.74 (each) | 0.117 (each) |

13. The total particulate emissions from the coal washing plant (Em.Pt. 04(20) through 14(32)) shall not equal or exceed 100 lbs/hr, 1,000 lbs/day, and 50 tons/yr.
14. The total particulate emissions from the limestone handling facilities (Em.Pts. 20(12,13) through 25(18)) shall not equal or exceed 25 tons/yr.
15. Visible emissions from Em.Pt. 04(20) through 14(32), 19(11a & b) through 21(14) and 23(16) through 25(18) shall not equal or exceed 20% opacity.
16. Visible emissions from Em.Pt. 16(07,8c) and 17(8a,b&d) shall not equal or exceed 40% opacity.
17. Visible emissions from Em.Pt. 03(03), 26(4), 27(5), 28(-), and 29(33-43) shall not exceed 20% opacity.
18. Visible emissions from the coal-fired indirect heat exchanger (Em.Pt. 01(01)) shall not exceed 61% opacity.
19. Visible emissions from the coal-fired indirect heat exchanger (Em.Pt. 02(02)) shall not exceed 50% opacity.
20. The adjusted opacity standard for the coal-fired indirect heat exchangers (Em.Pt. 01(01) and 02(02)) shall not become effective until final approval is published in the Code of Federal Regulations by the United States Environmental Protection Agency. Until that time, opacity from all units shall not exceed 20%.
21. The alternate sulfur dioxide limits for the coal-fired indirect heat exchangers (Em.Pt. 01(01), 02(02), and 03(03)) shall not become effective until final approval is published in the Code of Federal Regulations by the United States Environmental Protection Agency. Until that time, sulfur dioxide emissions shall not exceed 3.1 lbs/mmBTU.
22. Within thirty (30) days following the conclusion of each month, the permittee shall submit a report indicating the amount of limestone processed in the limestone handling facilities (Em. Pts. 20(12,13) through 25(18)).

O-87-012

PERMIT NUMBER:

PERMIT - Continued

23. Limitations on emissions of particulate matter and sulfur dioxide shall be as measured by only such methods as may be specified or approved by the EPA and the Division.
24. The annual emission and production limits listed on this permit shall be based on emission and production during any consecutive 12 month period.

CHARLOTTE E. BALDWIN
SECRETARY

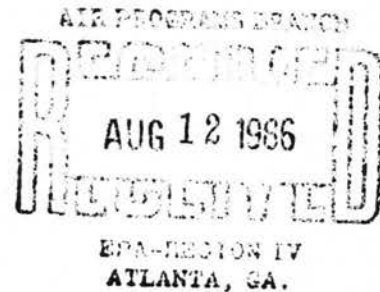


MARTHA LAYNE COLLINS
GOVERNOR

COMMONWEALTH OF KENTUCKY
NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET
OFFICE OF THE SECRETARY
FRANKFORT, KENTUCKY 40601
TELEPHONE (502) 564-3350
August 6, 1986

Mr. Jack Ravan
Administrator
U.S. Environmental Protection Agency
Region IV
345 Courtland Street, N.E.
Atlanta, Georgia 30365

RE: Tennessee Valley Authority (TVA)
Paradise Steam Plant
I.D.# 072-2960-0006



Dear Mr. Ravan:

Jack -

In compliance with the Clean Air Act Amendments of 1977, a revision to the State Implementation Plan (SIP) for the attainment and maintenance of the National Ambient Air Quality Standards is hereby submitted to the U.S. Environmental Protection Agency for the purpose of granting an opacity variance and the redistribution of allowable sulfur dioxide emissions to the TVA - Paradise Steam Plant. This revision has been prepared in accordance with 40 CFR 51 and the guidance documents issued by the U.S. Environmental Protection Agency.

This letter should serve to certify that all procedural requirements for adoption of this plan by the Commonwealth of Kentucky have been met. Opportunity for public participation and input has been provided through a public hearing (transcript enclosed). The revision to the State Implementation Plan as it applies to the above referenced company has been duly adopted by this Cabinet pursuant to the provisions of Regulations 401 KAR 50:055, Section 2(6) and 401 KAR 61:015, Section 3.

It is requested that the U.S. Environmental Protection Agency favorably consider the approval of this revision and publish the same in the Federal Register. If you have any questions, please contact Mr. Roger B. McCann, Director, Division of Air Pollution Control.

Sincerely,

Charlotte E. Baldwin
Charlotte E. Baldwin, Secretary
Secretary

CB:kk

Enclosures



**Kentucky Natural Resources and Environmental Protection Cabinet
Department for Environmental Protection
Division of Air Pollution Control**

PERMIT

**TENNESSEE VALLEY AUTHORITY
201 Summer Place Building
Knoxville, Tennessee 37902**

RE: Paradise Steam Plant

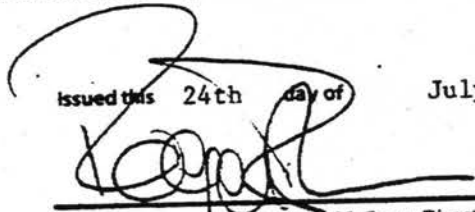
Pursuant to your application which was determined to be complete by this office on **February 11, 1985** the Natural Resources and Environmental Protection Cabinet issues this permit for the **operation** of the equipment specified herein in accordance with the plans, specifications, and other information submitted with your application. This permit has been issued under the provisions of KRS Chapter 224.033 and regulations promulgated pursuant thereto and is subject to all conditions and operating limitations contained herein. Issuance of this permit does not relieve the permittee from the responsibility of obtaining any other permits, licenses, or approvals required by this Cabinet and/or other state, federal, and local agencies.

| <u>POINT OF EMISSION</u> | <u>AFFECTED FACILITY</u> | <u>CONDITIONS</u> |
|--------------------------|--|---|
| 01 (01) | Indirect Heat Exchanger (Unit 1) | 6,305 mmBTU/hr maximum heat input. |
| 02 (02) | Indirect Heat Exchanger (Unit 2) | 6,305 mmBTU/hr maximum heat input. |
| 03 (03) | Indirect Heat Exchanger (Unit 3) | 10,390 mmBTU/hr maximum heat input. |
| 04 (20) | Coal Conveying Transfer Point (Transfer Station A) | 1. 2,000 tons/hr and 13,000,000 tons/yr maximum coal throughputs.
2. Particulate emissions shall not exceed 0.45 lb/hr and 1.48 tons/yr. |

No deviation from the plans and specifications submitted with your application or the conditions specified herein is permitted, unless authorized in writing by the Division of Air Pollution Control. This permit shall become null and void at any time the terms and conditions contained herein are violated. All rights of inspection by the representatives of the Division of Air Pollution Control are reserved. Responsibility for satisfactory conformance with all Air Pollution Control Regulations must be borne by the permittee.

PERMIT NUMBER: O-86-75
FILE NUMBER: 072-2960-0006
REGION: Paducah/Cairo
COUNTY: Muhlenberg
SIC CODE: 4911

Issued this 24th day of July 19 86



Roger B. McCann, Director
Division of Air Pollution Control

| <u>POINT OF EMISSION</u> | <u>AFFECTED FACILITY</u> | <u>CONDITIONS</u> |
|--------------------------|--|--|
| 05 (21) | Coal Crusher
(Transfer Station B) | <ol style="list-style-type: none"> 1. 2,000 tons/hr and 6,500,000 tons/yr maximum coal throughputs. 2. Particulate emissions shall not exceed 7.02 lbs/hr and 11.41 tons/yr. |
| 06 (22) | Coal Conveying Transfer Point (Transfer Station G) | <ol style="list-style-type: none"> 1. 2,000 tons/hr and 13,000,000 tons/yr maximum coal throughputs. 2. Particulate emissions shall not exceed 0.31 lb/hr and 1.02 tons/yr. |
| 07 (23) | Coal Conveying Transfer Point (Transfer Station H) | <ol style="list-style-type: none"> 1. 2,000 tons/hr and 13,000,000 tons/yr maximum coal throughputs. 2. Particulate emissions shall not exceed 0.31 lb/hr and 1.02 tons/yr. |
| 08 (24,25) | Coal Storage Silo | <ol style="list-style-type: none"> 1. 2,000 tons/hr and 6,500,000 tons/yr maximum coal throughputs. 2. Particulate emissions shall not exceed 0.45 lb/hr and 0.74 ton/yr. |
| 09 (26,27) | Coal Storage Silo | <ol style="list-style-type: none"> 1. 2,000 tons/yr and 6,500,000 tons/yr maximum coal throughputs. 2. Particulate emissions shall not exceed 0.22 lb/hr and 0.36 ton/yr. |
| 10 (28) | Coal Conveying Transfer Point (Transfer Station J) | <ol style="list-style-type: none"> 1. 2,000 tons/hr and 13,000,000 tons/yr maximum coal throughputs. 2. Particulate emissions shall not exceed 0.27 lb/hr and 0.88 ton/yr. |
| 11 (29) | Coal Reclaim Hopper | <ol style="list-style-type: none"> 1. 2,000 tons/hr and 6,500,000 tons/yr maximum coal throughputs. 2. Particulate emissions shall not exceed 0.27 lb/hr and 0.44 ton/yr. |
| 12 (30) | Coal Conveying Transfer Point (Transfer Station K) | <ol style="list-style-type: none"> 1. 2,000 tons/hr and 13,000,000 tons/yr maximum coal throughputs. 2. Particulate emissions shall not exceed 0.27 lb/hr and 0.88 ton/yr. |
| 13 (31) | Coal Conveying Transfer Point (Transfer Station M) | <ol style="list-style-type: none"> 1. 1,800 tons/hr and 13,000,000 tons/yr maximum coal throughputs. 2. Particulate emissions shall not exceed 0.24 lb/hr and 0.88 tons/yr. |

| <u>POINT OF EMISSION</u> | <u>AFFECTED FACILITY</u> | <u>CONDITIONS</u> |
|--------------------------|---|---|
| 14 (32) | Coal Crusher
(Transfer Station L) | 1. 1,800 tons/hr and 13,000,000 tons/yr
maximum coal throughputs.
2. Particulate emissions shall not exceed
1.58 lbs/hr and 5.7 tons/yr. |
| 15 (06,9c) | Three Coal Receiving Hoppers
And Reclaim Hopper | 3,000 tons/hr and 17,000,000 tons/yr
maximum coal throughputs. |
| 16 (07,8c) | Three Coal Breakers
and Four Conditioners | 3,000 tons/hr and 17,000,000 tons/yr
maximum coal throughputs. |
| 17 (8a,b & d) | Coal Conveying and
Bunker Room | 2,000 tons/hr and 17,000,000 tons/yr
maximum coal throughputs. |
| 18 (9a, b & d, 10) | Coal Stockpile | 2,000 tons/hr and 17,000,000 tons/yr
maximum coal throughputs. |
| 19 (11a & b) | Two Lime Storage Silos | 5 tons/hr and 120 tons/yr maximum
lime throughputs, each. |
| 20 (12,13) | Limestone Receiving | 900 tons/hr and 919,800 tons/yr
maximum limestone throughputs. |
| 21 (14) | Limestone Conveying
Transfer Point | 900 tons/hr and 919,800 tons/yr
maximum limestone throughputs. |
| 22 (15,19) | Limestone Stock-out Conveyor
and Storage | 900 tons/hr and 919,800 tons/yr
maximum limestone throughputs. |
| 23 (16) | Limestone Silo Loading | 900 tons/hr and 919,800 tons/yr
maximum limestone throughputs. |
| 24 (17) | Limestone Silo Unloading
(Vibrating Feeders) | 240 tons/hr and 919,800 tons/yr
maximum limestone throughputs. |
| 25 (18) | Limestone Surge Hopper
and Weigh Hopper | 300 tons/hr and 919,800 tons/yr
maximum limestone throughputs. |
| 26 (4) | Two Heating Indirect Heat
Exchangers A & B (#2 Fuel Oil) | 25.8 mmBTU/hr maximum heat input,
each. |
| 27 (5) | Two Auxiliary Indirect Heat
Exchangers A & B (#2 Fuel Oil) | 320 mmBTU/hr maximum heat input,
each. |

| <u>POINT OF EMISSION</u> | <u>AFFECTED FACILITY</u> | <u>CONDITIONS</u> |
|--------------------------|---|--------------------------------------|
| 28 (-) | Heating Indirect Heat Exchanger (#2 Fuel Oil) | 25.8 mmBTU/hr maximum heat input. |
| 29 (33-43) | Eleven Dravo #2 Oil-Fired Space Heaters | 2 mmBTU/hr maximum heat input, each. |
| 30 (-) | Ash Handling System | |

GENERAL CONDITIONS:

1. The permittee shall maintain and make available for inspection by this Division all records necessary to assure that the allowable production and emission rates will not be exceeded.
2. In no way does this permit relieve the permittee from compliance with all applicable emission and air quality standards.
3. All air pollution control equipment shall be properly maintained, kept in good operating conditions at all times, and in use at all times when its associated affected facility is operating.
4. Malfunction and shut down of air pollution control equipment shall be promptly reported to the Division in accordance with Regulation 401 KAR 50:055, Section 1.
5. Except as otherwise specified, fugitive emissions shall be controlled in accordance with Regulation 401 KAR 63:010.
6. Opacity and sulfur dioxide emissions from the coal-fired indirect heat exchangers (Em.Pt. 01(01), 02(02), and 03(03)) shall be monitored and reported in accordance with Regulation 401 KAR 61:005, Section 3.
7. Particulate emissions from the coal-fired indirect heat exchangers (Em.Pt. 01(01), 02(02), and 03(03)) shall not exceed 0.11 lbs/mmBTU.
8. Sulfur dioxide emissions from the coal-fired indirect heat exchangers (Em.Pt. 01(01) and 02(02)) shall not exceed 0.9 lbs/mmBTU.
9. Sulfur dioxide emissions from the coal-fired indirect heat exchanger (Em.Pt. 03(03)) shall not exceed 5.7 lbs/mmBTU.
10. Emissions from the #2 oil fired indirect heat exchangers (Em.Pt. 26(4), 27(5), and 28(-)) shall not exceed the following limitations:
 - a) Particulate - 0.11 lbs/mmBTU
 - b) Sulfur Dioxide - 2.1 lbs/mmBTU

11. Emissions from the Dravo #2 oil-fired space heaters (Em.Pt. 29(33-43)) shall not exceed the following limitations:

- a) Particulate - 0.1 lbs/mmBTU
- b) Sulfur Dioxide - 0.8 lbs/mmBTU

12. Particulate emissions shall not exceed the following limits:

| <u>Emission Point</u> | <u>lbs/hr</u> | <u>tons/yr</u> |
|-----------------------|---------------|----------------|
| 16 (07,8c) | 92.7 | 263 |
| 17 (8a, b & d) | 86.9 | 369 |
| 19 (11a & b) | 9.74 (each) | 0.117 (each) |

13. The total particulate emissions from the coal washing plant (Em.Pt. 04(20) through 14(32)) shall not equal or exceed 100 lbs/hr, 1,000 lbs/day, and 50 tons/yr.

14. The total particulate emissions from the limestone handling facilities (Em.Pts. 20(12,13) through 25(18)) shall not equal or exceed 25 tons/yr.

15. Visible emissions from Em.Pt. 04(20) through 14(32), 19(11a & b) through 21(14) and 23(16) through 25(18) shall not equal or exceed 20% opacity.

16. Visible emissions from Em.Pt. 16(07,8c) and 17(8a,b&d) shall not equal or exceed 40% opacity.

17. Visible emissions from Em.Pt. 03(03), 26(4), 27(5), 28(-), and 29(33-43) shall not exceed 20% opacity.

18. Visible emissions from the coal-fired indirect heat exchanger (Em.Pt. 01(01)) shall not exceed 61% opacity.

19. Visible emissions from the coal-fired indirect heat exchanger (Em.Pt. 02(02)) shall not exceed 50% opacity.

20. The adjusted opacity standard for the coal-fired indirect heat exchangers (Em.Pt. 01(01) and 02(02)) shall not become effective until final approval is published in the Code of Federal Regulations by the United States Environmental Protection Agency. Until that time, opacity from all units shall not exceed 20%.

21. The alternate sulfur dioxide limits for the coal-fired indirect heat exchangers (Em.Pt. 01(01), 02(02), and 03(03)) shall not become effective until final approval is published in the Code of Federal Regulations by the United States Environmental Protection Agency. Until that time, sulfur dioxide emissions shall not exceed 3.1 lbs/mmBTU.

22. Within thirty (30) days following the conclusion of each month, the permittee shall submit a report indicating the amount of limestone processed in the limestone handling facilities (Em. Pts. 20(12,13) through 25(18)).

PERMIT NUMBER:

O-86-75

PERMIT - Continued

23. Limitations on emissions of particulate matter and sulfur dioxide shall be as measured by only such methods as may be specified or approved by the EPA and the Division.
24. The annual emission and production limits listed on this permit shall be based on emission and production during any consecutive 12 month period and not on a calendar year.



Handwritten mark
CARL H. BRADLEY
SECRETARY

WALLACE G. WILKINSON
GOVERNOR

COMMONWEALTH OF KENTUCKY
NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET

OFFICE OF THE SECRETARY
FRANKFORT KENTUCKY 40601
TELEPHONE: (502) 564-3350

July 28, 1989

Mr. Greer C. Tidwell
Regional Administrator
U.S. Environmental Protection Agency
Region IV
345 Courtland Street, N.E.
Atlanta, Georgia 30365

Dear Mr. Tidwell:

Enclosed for your consideration is a proposed revision of the Kentucky SIP. The revision relates to Alcan Foil Products in Jefferson County. The proposed bubble meets the requirements of the emission trading policy published in the Federal Register, 51 FR 43814-43860. A public hearing was held at the Jefferson County Board meeting on March 15, 1989, and the revision was approved. Since all procedural and policy requirements have been met, the Cabinet requests that EPA publish its approval of this revision to the Kentucky SIP at its earliest convenience.

For your further information, although the proposed revision does not consider any emission reductions that may be required by the Post '87 Ozone SIP, Jefferson County is committed to requiring additional reductions at Alcan if necessary to attain the NAAQS for ozone.

Since some of the information in the Appendices is trade secret, the company has submitted two copies of this document: one marked "Confidential" and the other "Public Copy". The company requests that the confidential copy not be released for public review since it contains ink formulation data.

If you have any questions, please contact Mr. William Eddins, Director, Division for Air Quality, at (502)564-3382.

Respectfully,

Carl H. Bradley
Carl H. Bradley

Enclosures



AIR POLLUTION CONTROL DISTRICT OF JEFFERSON COUNTY



914 East Broadway • Louisville, Kentucky 40204

CONDITIONAL OPERATING PERMIT

Permit No. 103-74 Effective Date Feb 28, 1990 Expiration Date Feb 28, 1992
 Permit Fee \$50.00 EIS Plant 0015 EIS Emission Pt(s) 02

Permission is hereby given by the Air Pollution Control District of Jefferson County to OPERATE PROCESS equipment located at:

Alcan Foil Products, Laminating Plt, 1225 W Burnett St, Louisville, KY

in accordance with plans and specifications on file with the District and under the conditions stipulated on the reverse hereof. Permit covers:

LAMINATORS #6 and #14, Inta-Roto Inc., Model # GM-1000, each equipped with a rotogravure printing (or coating) station.

Max Permitted Cap 420 and 400 ft/min Permitted Oper Schedule *

Fuels Used: Primary Natural gas Secondary NA

| Allowable Emissions | TSP | SO ₂ | VOC | CO | NO _x | Other | Basis: | % Rated Capacity | Max Permitted Oper Hrs/Yr |
|---------------------|-------|-----------------|-----|-------|-----------------|-------|--------|------------------|---------------------------|
| Lbs/Hr | _____ | _____ | * | _____ | _____ | _____ | | _____ | _____ |
| Tons/Yr | _____ | _____ | * | _____ | _____ | _____ | | _____ | _____ |

Applicable Regulation(s) *

The requirements of Regulation 1.04 shall be followed for any source testing.

Control Reference NA *See Additional Conditions

Neither EMISSIONS OFFSET nor PSD applicable in the granting of this permit.

Emissions Bank Code Ref. 43101-031W

Bubble Reference SIP Revision Appl. - Dec 1988 (Revised Apr 1989)

Applicant for Permit Albert Risen, Jr.

Title General Mgr & Vice President Application Dated Jan 1, 1974

John C. McCarthy
 Reviewing Engineer (03)

Havel M. Rogers
 Air Pollution Control Officer

AIR POLLUTION CONTROL DISTRICT OF JEFFERSON COUNTY
Permit No. 103-74 Page 2 EIS Plant 0015

ADDITIONAL CONDITIONS

This permit has been issued under the following conditions:

1. The USEPA's emission trading policy statement (ETPS) requires a net emissions reduction of 20% from the lowest-of-actual, -SIP-allowable, -or- RACT-allowable emissions determined over an established baseline period. The plant has prepared and submitted a State Implementation Plan Revision application (SIP Revision, December 1988, revised April 1989) to address the requirements of the ETPS. The conditions and provisions of the emissions bubble as described in the SIP Revision application shall be the applicable regulation.
2. The nine rotogravure printing/coating machines at the plant (Machine numbers 6, 7, 8, 9, 10 (formerly 13), 11, 14, 15, and 16) shall be treated as one affected facility combined under a bubble when determining compliance with the emissions bubble.

The overcontrol achieved from the use of water-borne coatings/inks (extra low in VOC) can be used for credit during the baseline determination for this bubble. This credit taken for water-borne coatings/inks used during the baseline period cannot be used during post-baseline emission calculations. However, credit can be taken for water-borne or high solids coatings/inks developed and used after the baseline period.

The control achieved from recirculating the air through the oven on Machine #16 can be used when calculating the pounds of VOC after the application of any control measures. A control efficiency of 40% shall be used in the calculations until a new value is obtained and approved as specified below. If retested, the actual removal efficiency achieved in Machine #16 shall be determined and shall be utilized by Alcan after approval and acceptance by the District and the USEPA. Testing and report submittal shall be completed within the four months after approval and acceptance by the USEPA of the test protocol and the December 1988 SIP Revision Application (revised April 1989). If the company chooses to waive retesting or if the company does not properly perform the testing within the required time frame, the removal efficiency will be assumed to be 0% until the reports are submitted and approved by the District.

The new removal efficiency value will be incorporated into the Plant's Management Plan for compliance with the emission limits. Possible modifications to provide compliance, should the efficiency be less than the currently documented 40%, shall include limiting emissions through reduction of capacity utilization, hours of operation, or substituting a greater fraction of water-borne or high solids content coatings/inks.

The Plant shall be further limited as the number of VOC operating days shall be limited to 246 days per year. A VOC operating day shall be defined as a day in which a solvent-borne coating/ink is run on a machine within the bubble or a day in which greater than 100 pounds of VOC are emitted within the bubble from water-borne or high solids coatings/inks as defined in Regulation 6.29, Section 6, (a) and (c) respectively.

AIR POLLUTION CONTROL DISTRICT OF JEFFERSON COUNTY

Permit No. 103-74

Page 3

EIS Plant 0015

The company shall follow the production scheduling and the recordkeeping procedures specified in the December 1988 SIP Revision Application (revised April 1989).

3. The company may use in the bubble 214.0 tons/year of VOC emission reduction credits (267.5 tons/year of VOC emission credits purchased from the Federal Paper Board Company, less a 20 percent reduction). These credits, after subtracting 3.4 tons per year adjustment for makeup solvent usage, shall be equally distributed over the 246 VOC operating production days. (As more accurate data is gathered concerning fugitive emissions, there could be revisions to the 3.4 tons per year value as approved by the District.) A total of 1712 pounds VOC ERC per day are available.
4. The company shall use a daily averaging period (three 8-hour shift operation) to demonstrate compliance.
5. The company shall supply such information, as required by the District, to demonstrate compliance on a daily basis. The company shall continue using the present compliance reporting system, as specified in the December 1988 SIP Revision Application (revised April 1989), unless changes to the system are approved or requested by the District. For each rotogravure product produced on a machine within the emissions bubble, accurate records shall be maintained of 1) the date, 2) the machine number, 3) the yards run, 4) the output width, 5) the output laydown rate (pounds of coatings used for specified area), and 6) the coating used. The company shall verify the accuracy of the laydown rates according to Attachment 2 of the December 1988 SIP Revision Application (revised April 1989) or as required by the District. (This may include comparing the computer generated emissions to emissions calculated from actual ink and solvent usages over either short or long term periods.) The actual measured laydown value from each master roll produced shall be used in determining the actual emissions for each day. (In the limited cases where the amount of solids applied to the base material is too low to allow an accurate measurement, the laydown value shall be determined from empirical data.) The "TABLE VOC", "TABLE SLD", and "TABLE GAL" shall be determined by using the applicable ASTM or federal methods as specified in Condition 10. The "GAL OF COAT", "GAL OF SOLIDS", "BEFORE LBS VOC", "AFTER LBS VOC", "ALLOW LBS VOC", "CREDIT + ALLOW", and other parameters such as makeup solvent usage, shall be calculated as specified in Sections 3, 4, and Attachment 1 of the December 1988 SIP Revision Application (revised April 1989). Records shall be maintained of the daily emissions (a total of the first, second, and third shifts) from the nine rotogravure printing/coating machines. Compliance reports shall be submitted for each calendar month and are to be submitted to the District within 20 calendar days following the end of each month.
6. The nine rotogravure printing/coating machines at the plant shall not emit more than 2164 pounds VOC per day (the adjusted baseline emission limit plus the available emission reduction credits). Also, the nine rotogravure printing/coating machines at the plant shall not emit more than 266.1 tons/year. (This includes VOC emissions from all solvent-borne, water-borne, and high solids coatings/inks on both VOC and non-VOC operating days.)

AIR POLLUTION CONTROL DISTRICT OF JEFFERSON COUNTY

Permit No. 103-74

Page 4

EIS Plant 0015

7. The nine rotogravure printing/coating machines at the plant shall comply with a daily "RACT-allowable" which is equivalent to: 65% by weight control for solvent-based inks run on the machines within the bubble, usage of 75% water by volume in the volatile portion of water-based coatings/inks, and usage of high solids content coatings/inks with greater than 60% nonvolatile material on a water-free basis.
8. As specified in Regulation 1.04, Regulation 6.01, Section 4, and Regulation 6.29, Section 4, the company shall perform any additional compliance testing as required by the District. This testing shall be performed using test methods as approved by the District. As requested by the District, EPA Test Methods 1, 2, 3, 4, 24, 24A, 25, and 25A as specified in the Code of Federal Regulations (CFR) Title 40, Part 60, Appendix A, shall be used in order to determine the efficiency of control devices.
9. If additional VOC control equipment is installed at the Plant, a performance test shall be conducted within 60 days of startup of the new equipment.
10. The company shall implement the following program to periodically certify the accuracy of their coating data:
 - (a) The VOC, water, and solids content of the coatings shall be determined by using the following test methods: ASTM D1475, ASTM D2369, ASTM D3792, ASTM D4017, or those test methods which are approved by the District and EPA.
 - (b) Any new production coating/ink shall be tested prior to usage.
 - (c) In the event of a change or modification in the formulation of an existing coating/ink, a test shall be completed and submitted to the District within 90 days of this change.
 - (d) As a quality assurance program, the following test plan shall be conducted:
 - (i) All coatings/inks that represent 10% of the total gallons used in the bubble for the previous calendar year shall be tested quarterly.
 - (ii) All coatings/inks that represent 5% of the total gallons used in the bubble for the previous calendar year shall be tested semiannually.
 - (iii) All coatings/inks that represent 1% of the total gallons used in the bubble for the previous calendar year shall be tested annually.
 - (iv) All coatings/inks that represent greater than 50 gallons of usage but less than 1% of the total gallons used in the bubble for the previous calendar year shall be tested biennially.
 - (e) If after testing, the VOC content of a coating/ink is found to vary more than 10% from the manufacturer's stated value, the higher value shall be used until the discrepancy is resolved to the District's satisfaction.

AIR POLLUTION CONTROL DISTRICT OF JEFFERSON COUNTY

Permit No. 103-74

Page 5

EIS Plant 0015

- (f) If it is determined upon reviewing the coating/ink usage for the previous calendar year that a coating/ink is overdue for testing due to being redesignated to a more restrictive schedule, this testing shall be completed by April 1st of the new calendar year.
11. Additional VOC emission reductions may be imposed on the rotogravure printing/coating operations at the plant as a result of the future revisions which will be made to the State Implementation Plan for ozone.



AIR POLLUTION CONTROL DISTRICT OF JEFFERSON COUNTY



914 East Broadway • Louisville, Kentucky 40204

CONDITIONAL OPERATING PERMIT

Permit No. 104-74 Effective Date Feb 28, 1990 Expiration Date Feb 28, 1992
 Permit Fee \$50.00 EIS Plant 0015 EIS Emission Pt(s) 02

Permission is hereby given by the Air Pollution Control District of Jefferson County to OPERATE PROCESS equipment located at:

Alcan Foil Products, Laminating Plt, 1225 W Burnett St, Louisville, KY

in accordance with plans and specifications on file with the District and under the conditions stipulated on the reverse hereof. Permit covers:

LAMINATORS #7 and #10 (formerly #13), Schmutz Mfg., each equipped with a rotogravure printing (or coating) station.

Max Permitted Cap 800 & 400 ft/min Permitted Oper Schedule *

Fuels Used: Primary Natural gas Secondary NA

| Allowable Emissions | TSP | SO ₂ | VOC | CO | NO _x | Other | Basis: % Rated Capacity | Max Permitted Oper Hrs/Yr |
|---------------------|-------|-----------------|-----|-------|-----------------|-------|-------------------------|---------------------------|
| Lbs/Hr | _____ | _____ | * | _____ | _____ | _____ | _____ | _____ |
| Tons/Yr | _____ | _____ | * | _____ | _____ | _____ | _____ | _____ |

Applicable Regulation(s) *

The requirements of Regulation 1.04 shall be followed for any source testing.

Control Reference NA *See Additional Conditions

Neither EMISSIONS OFFSET nor PSD applicable in the granting of this permit.

Emissions Bank Code Ref. 43101-031W

Bubble Reference SIP Revision Appl. - Dec 1988 (Revised Apr 1989)

Applicant for Permit Albert Risen, Jr.

Title General Mgr & Vice President Application Dated Jan 1, 1974

John C. McCarthy
 Reviewing Engineer (03)

Harvel M. Rogers, Jr.
 Air Pollution Control Officer

Additional conditions applicable to this permit are attached hereto and made part

AIR POLLUTION CONTROL DISTRICT OF JEFFERSON COUNTY

Permit No. 104-74

Page 2

EIS Plant 0015

ADDITIONAL CONDITIONS

(See permit conditions on Permit no. 103-74).

(2252-3569-10113)



AIR POLLUTION CONTROL DISTRICT OF JEFFERSON COUNTY



914 East Broadway • Louisville, Kentucky 40204

CONDITIONAL OPERATING PERMIT

Permit No. 105-74 Effective Date Feb 28, 1990 Expiration Date Feb 28, 1992
 Permit Fee \$50.00 EIS Plant 0015 EIS Emission Pt(s) 02

Permission is hereby given by the Air Pollution Control District of Jefferson County to OPERATE PROCESS equipment located at:

Alcan Foil Products, Laminating Plt, 1225 W Burnett St, Louisville, KY

in accordance with plans and specifications on file with the District and under the conditions stipulated on the reverse hereof. Permit covers:

LAMINATORS #8 and #9, Miesel Press Co.: #8-equipped with 1 rotogravure printing (or coating) station; #9 - equipped with 2 rotogravure printing (or coating) stations.

Max Permitted Cap 1000 ft/min each Permitted Oper Schedule *

Fuels Used: Primary Natural gas Secondary NA

| Allowable Emissions | TSP | SO ₂ | VOC | CO | NO _x | Other | Basis: % Rated Capacity | Max Permitted Oper Hrs/Yr |
|---------------------|-------|-----------------|-----|-------|-----------------|-------|-------------------------|---------------------------|
| Lbs/Hr | _____ | _____ | * | _____ | _____ | _____ | _____ | _____ |
| Tons/Yr | _____ | _____ | * | _____ | _____ | _____ | _____ | _____ |

Applicable Regulation(s) *

The requirements of Regulation 1.04 shall be followed for any source testing.

Control Reference NA *See Additional Conditions

Neither EMISSIONS OFFSET nor PSD applicable in the granting of this permit.

Emissions Bank Code Ref. 43101-031W

Bubble Reference SIP Revision Appl. - Dec 1988 (Revised Apr 1989)

Applicant for Permit Albert Bisen, Jr.

Title General Mgr & Vice President Application Dated Jan 1, 1974

John C. McCarthy
 Reviewing Engineer (03)

Harold M. Rogers, Jr.
 Air Pollution Control Engineer

Additional conditions applicable to this permit are attached hereto and are part of this permit.

AIR POLLUTION CONTROL DISTRICT OF JEFFERSON COUNTY

Permit No. 105-74

Page 2

EIS Plant 0015

ADDITIONAL CONDITIONS

(See permit conditions on Permit no. 103-74).

(2252-3569-10113)



AIR POLLUTION CONTROL DISTRICT OF JEFFERSON COUNTY



914 East Broadway • Louisville, Kentucky 40204

CONDITIONAL OPERATING PERMIT

Permit No. 106-74 Effective Date Feb 28, 1990 Expiration Date Feb 28, 1992
 Permit Fee \$50.00 EIS Plant 0015 EIS Emission Pt(s) 02

Permission is hereby given by the Air Pollution Control District of Jefferson County to OPERATE PROCESS equipment located at:

Alcan Foil Products, Laminating Plt., 1225 W Burnett St., Louisville, KY

in accordance with plans and specifications on file with the District and under the conditions stipulated on the reverse hereof. Permit covers:

LAMINATOR No. 11, Anaconda & Fisher Klosterman, equipped with a rotogra-
vure printing (or coating) station.

Max Permitted Cap 1000 ft/min Permitted Oper Schedule *

Fuels Used: Primary Natural gas Secondary NA

| Allowable Emissions | <u>TSP</u> | <u>SO2</u> | <u>VOC</u> | <u>CO</u> | <u>NOx</u> | <u>Other</u> | Basis: % Rated Capacity | Max Permitted Oper Hrs/Yr |
|---------------------|------------|------------|------------|-----------|------------|--------------|-------------------------|---------------------------|
| Lbs/Hr | _____ | _____ | * | _____ | _____ | _____ | _____ | _____ |
| Tons/Yr | _____ | _____ | * | _____ | _____ | _____ | _____ | _____ |

Applicable Regulation(s) *

The requirements of Regulation 1.04 shall be followed for any source testing.

Control Reference NA *See Additional Conditions

Neither EMISSIONS OFFSET nor PSD applicable in the granting of this permit.

Emissions Bank Code Ref. 43101-031W

Bubble Reference SIP Revision Appl. - Dec 1988 (Revised Apr 1989)

Applicant for Permit Albert Eissen, Jr.

Title General Mgr & Vice President Application Dated Jan 1, 1974

John C. McCarthy
Reviewing Engineer (03)

Harold M. Rogers
Air Pollution Control Officer

Additional conditions applicable to this permit are attached hereto and made part

AIR POLLUTION CONTROL DISTRICT OF JEFFERSON COUNTY

Permit No. 106-74

Page 2

EIS Plant 0015

ADDITIONAL CONDITIONS

(See permit conditions on Permit no. 103-74).

(2262-3569-10113)



AIR POLLUTION CONTROL DISTRICT OF JEFFERSON COUNTY



914 East Broadway * Louisville, Kentucky 40204

CONDITIONAL OPERATING PERMIT

Permit No. 110-74 Effective Date Feb 28, 1990 Expiration Date Feb 28, 1992
 Permit Fee \$50.00 EIS Plant 0016 EIS Emission Pt(s) 02

Permission is hereby given by the Air Pollution Control District of Jefferson County to OPERATE PROCESS equipment located at:

Alcan Foil Products, Laminating Plt, 1225 W Burnett St, Louisville, KY

in accordance with plans and specifications on file with the District and under the conditions stipulated on the reverse hereof. Permit covers:

1 COATER, WALDRON, Hartig & Ross, Machine #15, equipped with a roto-gravure printing (or coating) station.

Max Permitted Cap 1000 ft/min Permitted Oper Schedule *

Fuels Used: Primary Natural gas Secondary NA

| Allowable Emissions | <u>TSP</u> | <u>SO2</u> | <u>VOC</u> | <u>CO</u> | <u>NOx</u> | <u>Other</u> | Basis: | <u>X Rated Capacity</u> | <u>Max Permitted Oper Hrs/Yr</u> |
|---------------------|------------|------------|------------|-----------|------------|--------------|--------|-------------------------|----------------------------------|
| Lbs/Hr | _____ | _____ | * | _____ | _____ | _____ | | _____ | _____ |
| Tons/Yr | _____ | _____ | * | _____ | _____ | _____ | | _____ | _____ |

Applicable Regulation(s) *

The requirements of Regulation 1.04 shall be followed for any source testing.

Control Reference NA *See Additional Conditions

Neither EMISSIONS OFFSET nor PSD applicable in the granting of this permit.

Emissions Bank Code Ref. 43101-031W

Bubble Reference SIP Revision Appl. - Dec 1988 (Revised Apr 1989)

Applicant for Permit Albert Risen, Jr.

Title General Mgr & Vice President

Application Dated Jan 1, 1974

John C. McCarthy
 Reviewing Engineer (03)

Harold M. Rogers Jr
 Air Pollution Control Officer

Additional conditions applicable to this permit are attached hereto and made part

AIR POLLUTION CONTROL DISTRICT OF JEFFERSON COUNTY

Permit No. 110-74

Page 2

EIS Plant 0015

ADDITIONAL CONDITIONS

(See permit conditions on Permit no. 103-74).

(2252-3569-10113)



AIR POLLUTION CONTROL DISTRICT OF JEFFERSON COUNTY



914 East Broadway • Louisville, Kentucky 40204

CONDITIONAL OPERATING PERMIT

Permit No. 111-74 Effective Date Feb 28, 1990 Expiration Date Feb 28, 1992
 Permit Fee \$50.00 EIS Plant 0015 EIS Emission Pt(s) 02

Permission is hereby given by the Air Pollution Control District of Jefferson County to OPERATE PROCESS equipment located at:

Alcan Foil Products, Laminating Plt, 1225 W Burnett St, Louisville, KY

in accordance with plans and specifications on file with the District and under the conditions stipulated on the reverse hereof. Permit covers:

1 TWO SIDE COATER, Dusenbury Co., Machine #16, equipped with two roto-gravure printing (or coating) stations.

Max Permitted Cap 1000 ft/min Permitted Oper Schedule *

Fuels Used: Primary Natural gas Secondary NA

| Allowable Emissions | TSP | SO ₂ | VOC | CO | NO _x | Other | Basis: % Rated Capacity | Max Permitted Oper Hrs/Yr |
|---------------------|-------|-----------------|-----|-------|-----------------|-------|-------------------------|---------------------------|
| Lbs/Hr | _____ | _____ | * | _____ | _____ | _____ | _____ | _____ |
| Tons/Yr | _____ | _____ | * | _____ | _____ | _____ | _____ | _____ |

Applicable Regulation(s) *

The requirements of Regulation 1.04 shall be followed for any source testing.

Control Reference NA *See Additional Conditions

Neither EMISSIONS OFFSET nor PSD applicable in the granting of this permit.

Emissions Bank Code Ref. 43101-031W

Bubble Reference SIP Revision Appl. - Dec 1988 (Revised Apr 1989)

Applicant for Permit Albert Risen, Jr.

Title General Mgr & Vice President Application Dated Jan 1, 1974

John C. McCarthy
 Reviewing Engineer (03)

Howard
 Air Pollution Control Officer

AIR POLLUTION CONTROL DISTRICT OF JEFFERSON COUNTY

Permit No. 111-74

Page 2

EIS Plant 0015

ADDITIONAL CONDITIONS

(See permit conditions on Permit no. 103-74).

(2252-3569-10113)

PHILLIP J. SHEPHERD
SECRETARY

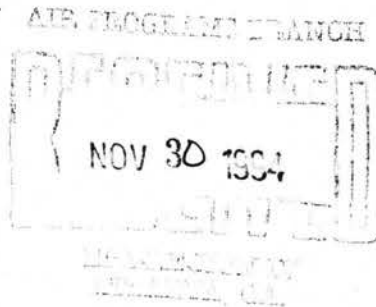


BRERETON C. JONES
GOVERNOR

COMMONWEALTH OF KENTUCKY
NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION
DIVISION FOR AIR QUALITY
803 Schenkel Lane
Frankfort, Kentucky 40601-1403

November 23, 1994

Mr. John H. Hankinson
U.S. EPA Region IV
345 Courtland Street, N.E.
Atlanta, Georgia 30365



Dear Mr. Hankinson:

On September 29, 1994, the Division for Air Quality conducted a public hearing to receive comments on a proposed source-specific revision to Kentucky's State Implementation Plan (SIP). This proposed revision requires a determination that the Calgon Carbon Corporation facility have Reasonably Available Control Technology for volatile organic compound emissions and that the facility's operating permit be federally-enforceable. The Boyd County facility is located in the Huntington-Ashland moderate ozone nonattainment area.

As an official SIP submittal to the U.S. EPA, Region IV, the Commonwealth of Kentucky hereby encloses the following documentation relating to the subject revision: a copy of the notice of public hearing, proof of publication of the notice of public hearing in a newspaper, the Response to Comments document prepared to address comments received on the proposal, and a copy of the revised permit.

If you have any questions or comments, please contact Mr. Kenneth Hines of the Division for Air Quality at (502) 573-3382.

Sincerely,

A handwritten signature in cursive script that reads "Phillip J. Shepherd".

Phillip J. Shepherd

PJS:jmf
Enclosures

cc: Doug Neeley ✓





Natural Resources and Environmental Protection Cabinet
 Kentucky Department for Environmental Protection
 Division for Air Quality

File

PERMIT

CALGON CARBON CORPORATION
 Big Sandy Plant
 Box 664
 Catlettsburg, Kentucky 41129

Pursuant to your application which was determined to be complete by this office on November 29, 1993, the Natural Resources and Environmental Protection Cabinet issues this permit for the operation of the equipment specified herein in accordance with the plans, specifications, and other information submitted with your application. This permit has been issued under the provisions of KRS Chapter 224.033 and regulations promulgated pursuant thereto and is subject to all conditions and operating limitations contained herein. Issuance of this permit does not relieve the permittee from the responsibility of obtaining any other permits, licenses, or approvals required by this Cabinet and/or other state, federal, and local agencies.

POINT OF EMISSION

AFFECTED FACILITY

CONDITIONS

01 (A-02,
03,04)

A, B & C lines coal
Storage Silo

1. Particulate emissions shall not exceed 35.62 lbs/hr and 119.19 TPY.
2. Opacity of visible emissions shall not equal or exceed forty percent (40%).
3. Process throughput shall not exceed 25.2 TPH and 168,640 TPY.

No deviation from the plans and specifications submitted with your application or the conditions specified herein is permitted, unless authorized in writing by the Division for Air Quality. Violations of the terms and conditions contained herein shall be grounds for the Department to seek revocation of this permit. All rights of inspection by the representatives of the Division for Air Quality are reserved. Responsibility for satisfactory conformance with all Air Quality Regulations must be borne by the permittee.

PERMIT NUMBER: O-94-020

FILE NUMBER: 103-0340-0014

REGION: Huntington/Ashland

COUNTY: Boyd

SIC CODE: 2819

Issued this 17th day of November 1994

John E. Hornback

John E. Hornback, Director

Robert W. Logan

Robert W. Logan, Commissioner



Natural Resources and Environmental Protection Cabinet
 Kentucky Department for Environmental Protection
 Division for Air Quality

PERMIT

CALGON CARBON CORPORATION
 Big Sandy Plant
 Box 664
 Catlettsburg, Kentucky 41129

Pursuant to your application which was determined to be complete by this office on **November 29, 1993**, the Natural Resources and Environmental Protection Cabinet issues this permit for the **operation** of the equipment specified herein in accordance with the plans, specifications, and other information submitted with your application. This permit has been issued under the provisions of KRS Chapter 224.033 and regulations promulgated pursuant thereto and is subject to all conditions and operating limitations contained herein. Issuance of this permit does not relieve the permittee from the responsibility of obtaining any other permits, licenses, or approvals required by this Cabinet and/or other state, federal, and local agencies.

| <u>POINT OF EMISSION</u> | <u>AFFECTED FACILITY</u> | <u>CONDITIONS</u> |
|--------------------------|----------------------------------|--|
| 01 (A-02, 03,04) | A, B & C lines coal Storage Silo | <ol style="list-style-type: none"> 1. Particulate emissions shall not exceed 35.62 lbs/hr and 119.19 TPY. 2. Opacity of visible emissions shall not equal or exceed forty percent (40%). 3. Process throughput shall not exceed 25.2 TPH and 168,640 TPY. |

No deviation from the plans and specifications submitted with your application or the conditions specified herein is permitted, unless authorized in writing by the Division for Air Quality. Violations of the terms and conditions contained herein shall be grounds for the Department to seek revocation of this permit. All rights of inspection by the representatives of the Division for Air Quality are reserved. Responsibility for satisfactory conformance with all Air Quality Regulations must be borne by the permittee.

PERMIT NUMBER: O-94-020

Issued this _____ day of _____ 19__

FILE NUMBER: 103-0340-0014

John E. Hornback
 John E. Hornback, Director

REGION: Huntington/Ashland

Robert W. Logan
 Robert W. Logan, Commissioner

COUNTY: Boyd

SIC CODE: 2819

POINT OF EMISSION

AFFECTED FACILITY CONDITIONS

| | | |
|---------------------|--|--|
| 02 (A-05) | A-Line Coal & Pitch preparation area | <ol style="list-style-type: none">1. Particulate emissions shall not exceed 15.39 lbs/hr and 46.81 TPY.2. Opacity of visible emissions shall not equal or exceed forty percent (40%).3. Process throughput shall not exceed 7.2 TPH and 43,800 TPY. |
| 03 (A-01) | A-Line preparation area to Baker elevator | <ol style="list-style-type: none">1. Particulate emissions shall not exceed 15.39 lbs/hr and 46.81 TPY.2. Opacity of visible emissions shall not equal or exceed forty percent (40%).3. Process throughput shall not exceed 7.2 TPH and 43,800 TPY. |
| 04 (A-06) | A-Line Bakers
-Afterburner
-Scrubber | <ol style="list-style-type: none">1. Particulate emissions shall not exceed 10.38 lbs/hr and 45.46 TPY.2. Opacity of visible emissions shall not equal or exceed forty percent (40%).3. Process throughput shall not exceed 4 TPH and 35,040 TPY.4. See General Condition 12.5. See General Condition 13.6. See General Condition 27. |
| 05 (A-12,
13,14) | A-Line Baker Heaters | |

POINT OF EMISSION

AFFECTED FACILITY CONDITIONS

| | | |
|---------------|--------------------------------------|---|
| 06 (A-07) | A-Line Baker to Activators elevator | <ol style="list-style-type: none">1. Particulate emissions shall not exceed 10.38 lbs/hr and 45.46 TPY.2. Opacity of visible emissions shall not equal or exceed forty percent (40%).3. Process throughput shall not exceed 4 TPH and 35,040 TPY. |
| 07 (A-07, 08) | A-Line Activators | <ol style="list-style-type: none">1. Particulate emissions shall not exceed 5.38 lbs/hr and 23.56 TPY per activator.2. Opacity of visible emissions shall not equal or exceed forty percent (40%).3. Individual activator input shall not exceed 1.5 TPH and 13,140 TPY.4. See General Condition 12.5. See General Condition 13.6. See General Condition 27. |
| 08 (A-10) | A-Line Packaging | <ol style="list-style-type: none">1. Particulate emissions shall not exceed 6.52 lbs/hr and 28.57 TPY.2. Opacity of visible emissions shall not equal or exceed forty percent (40%).3. Process throughput shall not exceed 2.0 TPH and 17,520 TPY. |
| 09 (B-01) | B-Line Coal & Pitch preparation area | <ol style="list-style-type: none">1. Particulate emissions shall not exceed 0.75 lbs/hr and 3.29 TPY.2. Opacity of visible emissions shall not equal or exceed twenty percent (20%).3. Process throughput shall not exceed 9.0 TPH and 78,840 TPY. |

POINT OF EMISSION

AFFECTED FACILITY CONDITIONS

- | | | |
|---------------|---|---|
| 10 (-) | B-Line preparation area to Baker elevator | <ol style="list-style-type: none">1. Particulate emissions shall not exceed 17.87 lbs/hr and 78.27 TPY.2. Opacity of visible emissions shall not equal or exceed forty percent (40%).3. Process throughput shall not exceed 9 TPH and 78,840 TPY. |
| 11 (B-02) | B-Line Bakers
-Afterburner
-Waste Heat Boiler
51MM BTU/hour
-Scrubber | <ol style="list-style-type: none">1. Particulate emissions shall not exceed 4.90 lbs/hr and 21.46 TPY.2. Sulfur Dioxide emissions shall not exceed 8.9 lbs/hr and 39 TPY.3. Opacity of visible emissions shall not equal or exceed twenty percent (20%)4. Process throughput shall not exceed 6.6 TPH and 48,618 TPY.5. Natural gas usage in the Bakers shall not exceed 59 mmft³/year.6. See General Condition 12.7. See General Condition 13.8. See General Condition 27. |
| 12 (B-08, 09) | B-Line Baker Heaters | |
| 13 (B-03) | B-Line Baker to Baker elevator | <ol style="list-style-type: none">1. Particulate emissions shall not exceed 12 lbs/hr and 52.42 TPY.2. Opacity of visible emissions shall not equal or exceed forty percent (40%).3. Process throughput shall not exceed 5 TPH and 43,680 TPY. |

POINT OF EMISSION

AFFECTED FACILITY CONDITIONS

| | | |
|------------------|--------------------------------------|---|
| 14 (B-04,
05) | B-Line Activators | <ol style="list-style-type: none">1. Particulate emissions shall not exceed 5.38 lbs/hr and 23.56 TPY per activator.2. Opacity of visible emissions shall not equal or exceed forty percent (40%).3. Individual activator input shall not exceed 1.5 TPH and 13,140 TPY.4. See General Condition 12.5. See General Condition 13.6. See General Condition 27. |
| 15 (B-06) | B-Line Packaging | <ol style="list-style-type: none">1. Particulate emissions shall not exceed 6.52 lbs/hr and 28.57 TPY.2. Opacity of visible emissions shall not equal or exceed forty percent (40%).3. Process throughput shall not exceed 2.0 TPH and 17,520 TPY. |
| 16 (C-01) | C-Line Coal & Pitch preparation area | <ol style="list-style-type: none">1. Particulate emissions shall not exceed 17.87 lbs/hr and 45.67 TPY.2. Opacity of visible emissions shall not equal or exceed forty percent (40%).3. Process throughput shall not exceed 9.0 TPH and 46,000 TPY. |

POINT OF EMISSION

AFFECTED FACILITY CONDITIONS

17 (-)

C-Line preparation area
to Baker elevator

1. Particulate emissions shall not exceed 17.87 lbs/hr and 45.67 TPY.
2. Opacity of visible emissions shall not equal or exceed forty percent (40%).
3. Process throughput shall not exceed 9.0 TPH and 46,000 TPY

18 (C-02)

C-Line Bakers
-Afterburner
-Waste Heat Boiler
66MM BTU/hour
-Scrubber

1. Particulate emissions shall not exceed 12.45 lbs/hr and 51.93 TPY.
2. Sulfur Dioxide emissions shall not exceed 4.62 pounds per million BTU actual heat input and 1,272 TPY.
3. Opacity of visible emissions shall not equal or exceed twenty percent (20%).
4. Process throughput shall not exceed 5.25 TPH and 43,800 TPY.
5. See General Condition 12.
6. See General Condition 13.
7. See General Condition 27.

19 (C-07,
08)

C-Line Baker
Heaters

20 (C-03)

C-Line Baker to
to Activators elevator

1. Particulate emissions shall not exceed 12.45 lbs/hr and 51.93 TPY.
2. Opacity of visible emissions shall not equal or exceed forty percent (40%).
3. Process throughput shall not exceed 5.25 TPH and 43,800 TPY.

POINT OF EMISSION

AFFECTED FACILITY CONDITIONS

| | | |
|------------------|---------------------------------|---|
| 21 (C-04,
05) | C-Line Activators | <ol style="list-style-type: none">1. Particulate emissions shall not exceed 6.52 lbs/hr and 28.56 TPY per activator.2. Opacity of visible emissions shall not equal or exceed forty percent (40%).3. Individual activator input shall not exceed 2.0 TPH and 17,520 TPY.4. See General Condition 12.5. See General Condition 13.6. See General Condition 27. |
| 22 (C-06) | C-Line Packaging | <ol style="list-style-type: none">1. Particulate emissions shall not exceed 10.38 lbs/hr and 45.46 TPY.2. Opacity of visible emissions shall not equal or exceed forty percent (40%).3. Process throughput shall not exceed 4.0 TPH and 35,040 TPY. |
| 23 (M-01,
05) | Railroad Car Thawers | |
| 24 (M-02) | Package Boiler
13MM BTU/hour | <ol style="list-style-type: none">1. Particulate emissions shall not exceed 0.3441 pound per million BTU actual heat input and 19.59 TPY.2. Sulfur Dioxide emissions shall not exceed 4.62 pounds per million BTU actual heat input and 263.06 TPY. |

POINT OF EMISSION

AFFECTED FACILITY CONDITIONS

3. Opacity of visible emissions shall not equal or exceed twenty percent (20%).

25 (M-03)

Acid Wash Transfer & Packaging system

1. Particulate emissions shall not exceed 0.075 lb/hr and 0.33 TPY.

2. Opacity of visible emissions shall not equal or exceed twenty percent (20%).

26 (M-04)

Acid Wash Dryer

1. Particulate emissions shall not exceed 1.99 lbs/hr and 8.75 TPY.

2. Opacity of visible emissions shall not equal or exceed twenty percent (20%).

3. Process throughput shall not exceed 2.28 TPH and 20,000 TPY.

4. The HCl concentration of the acid wash solution shall not exceed 3% HCl by weight.

27 (-)

Lime Storage Silo

1. Particulate emissions shall not exceed 1.35 lbs/hr and 5.91 TPY.

2. Opacity of visible emissions shall not equal or exceed twenty percent (20%).

28 (D-02)

D & E lines coal Storage Silo

1. Particulate emissions shall not exceed 28.43 lbs/hr and 97.14 TPY.

2. Opacity of visible emissions shall not equal or exceed forty percent (40%).

3. Process throughput shall not exceed 18 TPH and 123,000 TPY.

PERMIT - Continued

POINT OF EMISSION

AFFECTED FACILITY CONDITIONS

| | | |
|---------------|--|---|
| 29 (D-04) | D-Line Coal & Pitch preparation area | <ol style="list-style-type: none">1. Particulate emissions shall not exceed 17.87 lbs/hr and 61.06 TPY.2. Opacity of visible emissions shall not equal or exceed forty percent (40%).3. Process throughput shall not exceed 9.0 TPH and 61,500 TPY. |
| 30 (D-01) | D-Line preparation area to Baker elevator | <ol style="list-style-type: none">1. Particulate emissions shall not exceed 17.87 lbs/hr and 61.06 TPY.2. Opacity of visible emissions shall not equal or exceed forty percent (40%).3. Process throughput shall not exceed 9.0 TPH and 61,500 TPY. |
| 31 (D-05) | D-Line Bakers
-Afterburner
-Scrubber | <ol style="list-style-type: none">1. Particulate emissions shall not exceed 14.52 lbs/hr and 63.6 TPY.2. Opacity of visible emissions shall not equal or exceed forty percent (40%).3. Process throughput shall not exceed 6.6 TPH and 57,816 TPY.4. See General Condition 12.5. See General Condition 13.6. See General Condition 27. |
| 32 (D-12, 13) | D-Line Baker Heaters | |
| 33 (D-06) | D-Line Baker to Activators elevator | <ol style="list-style-type: none">1. Particulate emissions shall not exceed 14.52 lbs/hr and 63.6 TPY. |

POINT OF EMISSION

AFFECTED FACILITY CONDITIONS

2. Opacity of visible emissions shall not equal or exceed forty percent (40%).
3. Process throughput shall not exceed 6.6 TPH and 57,816 TPY.

34 (D-08,
09)

D-Line Activators

1. Particulate emissions shall not exceed 6.95 lbs/hr and 30.44 TPY per activator.
2. Opacity of visible emissions shall not equal or exceed forty percent (40%).
3. Individual activator input shall not exceed 2.2 TPH and 19,272 TPY.
4. See General Condition 12.
5. See General Condition 13.
6. See General Condition 27.

35 (D-10)

D-Line Packaging

1. Particulate emissions shall not exceed 12.0 lbs/hr and 52.56 TPY.
2. Opacity of visible emissions shall not equal or exceed forty percent (40%).
3. Process throughput shall not exceed 5.0 TPH and 43,800 TPY.

36 (-)

D & E Activator
to Packaging
Conveyor

1. Particulate emissions shall not exceed 19.2 lbs/hr and 83.87 TPY.
2. Opacity of visible emissions shall not equal or exceed forty percent (40%).

POINT OF EMISSION

AFFECTED FACILITY CONDITIONS

| | | |
|-----------|---|--|
| 37 (E-01) | E-Line Coal & Pitch preparation area | 3. Process throughput shall not exceed 10.0 TPH and 87,360 TPY. |
| 38 (-) | E-Line preparation area to Baker elevator | 1. Particulate emissions shall not exceed 17.87 lbs/hr and 61.06 TPY.
2. Opacity of visible emissions shall not equal or exceed forty percent (40%).
3. Process throughput shall not exceed 9.0 TPH and 61,500 TPY. |
| 39 (E-02) | E-Line Bakers
-Afterburner
-Waste Heat Boiler
78.5MM BTU/hour
-Scrubber | 1. Particulate emissions shall not exceed 14.52 lbs/hr and 63.6 TPY.
2. Sulfur Dioxide emissions shall not exceed 4.62 pounds per million BTU actual heat input and 333 TPY.
3. Opacity of visible emissions shall not equal or exceed twenty percent (20%).
4. Process throughput shall not exceed 6.6 TPH and 57,816 TPY.
5. See General Condition 12.
6. See General Condition 13.
7. See General Condition 27. |

POINT OF EMISSION

AFFECTED FACILITY CONDITIONS

| | | | |
|----|---------------|---|---|
| 40 | (E-09,
10) | E-Line Baker
Heaters | |
| 41 | (E-04) | E-Line Baker to
to Activators elevator | <ol style="list-style-type: none">1. Particulate emissions shall not exceed 14.52 lbs/hr and 63.6 TPY.2. Opacity of visible emissions shall not equal or exceed forty percent (40%).3. Process throughput shall not exceed 6.6 TPH and 57,816 TPY. |
| 42 | (E-05,
06) | E-Line Activators | <ol style="list-style-type: none">1. Particulate emissions shall not exceed 6.95 lbs/hr and 30.44 TPY per activator.2. Opacity of visible emissions shall not equal or exceed forty percent (40%).3. Individual activator input shall not exceed 2.2 TPH and 19,272 TPY.4. See General Condition 12.5. See General Condition 13.6. See General Condition 27. |
| 43 | (E-07) | E-Line Packaging | <ol style="list-style-type: none">1. Particulate emissions shall not exceed 12.0 lbs/hr and 49.39 TPY.2. Opacity of visible emissions shall not equal or exceed forty percent (40%).3. Process throughput shall not exceed 5.0 TPH and 41,160 TPY. |

POINT OF EMISSION

PERMIT - Continued
AFFECTED FACILITY CONDITIONS

44 (M-6)

D & E bulk load out
System

1. Particulate emissions shall not exceed 4.72 lbs/hr and 20.67 TPY.
2. Opacity of visible emissions shall not equal or exceed forty percent (40%).
3. Process throughput shall not exceed 1.233 TPH and 10,797 TPY.

45 (CAS-01)

Reactivation Furnace
- Dry Scrubber
- Baghouse

1. Spent carbon feed rate not exceed 3.0 TPH and shall 26,280 TPY.
2. See General Condition #09
3. No radioactive material above normal background levels shall be processed. The equipment and procedures used to measure radioactivity contained in the spent carbon shall be approved by Kentucky's Human Resources Cabinet.
4. Spent carbon containing any amount of polychlorinated biphenyl's (PCBs) shall not be processed.
5. Visible emissions from the baghouse shall not exceed 10% opacity.
6. There shall be no visible emissions from the transfer point baghouse to enclosed containers subsequently transferred to a landfill.
7. Calgon shall operate and maintain furnace feed shutdown systems that are activated if:
 - a. The scrubber atomizer wheel stops.

PERMIT NUMBER: O-94-020

POINT OF EMISSION

PERMIT - Continued
AFFECTED FACILITY CONDITIONS

- b. The spray dryer outlet temperature exceeds the maximum continuous service temperature rating of the dust collector bags.
- c. The furnace afterburner system stack temperature falls below 1600F.
- 8. Calgon shall operate and maintain continuous temperature recording devices as follows:
 - a. Spray dryer outlet
 - b. Baghouse outlet
 - c. Afterburner stack
- 9. Calgon shall operate and maintain process alarms that are activated if:
 - a. The furnace afterburner system stack temperature falls below 1700F.
 - b. The baghouse outlet temperature falls below 200F.
 - c. The spray dryer outlet temperature falls below 200F.
 - d. The spray dryer and Joy baghouse catch disposal silo fills to within twelve (12) inches of its top.
- 10. Calgon shall operate and maintain a continuous sulfur dioxide emission monitor in the baghouse outlet stack. Process input shall be controlled to insure sulfur dioxide emissions do not exceed 21.04 lbs/hr. A

POINT OF EMISSION

AFFECTED FACILITY CONDITIONS

written report of all hourly exceedances shall be submitted every three months to the Director within 30 days following the end of the reporting period. The report shall include a description of the nature and cause of the exceedence and measures taken to correct same.

11. Calgon shall maintain records of the following information for each new carbon source that is to be processed:
 - a. A complete organic analysis of the spent carbon used at a RCRA site.
 - b. A certification from all sources stating that no PCB or dioxin adsorption has occurred on the spent carbon forwarded to Calgon for reactivation.
 - c. If the spent carbon has a chloride content of greater than 4.0 percent by weight, then the permittee shall submit a written notice to the Division Director, with a copy to the Ashland Regional Office, of the intent to process such carbon at least 5 days prior to processing.

POINT OF EMISSION

AFFECTED FACILITY CONDITIONS

The notice shall contain the following information:

- i. Source of the spent carbon;
- ii. Chlorine and Sulfur content;
- ii. Maximum processing rate of carbon to ensure that HCl emissions do not exceed 2.55 lbs/hr.

| | | |
|-------------|-------------------------------------|--|
| 46 (CAS-02) | Furnace feedtank & Dewatering screw | <ol style="list-style-type: none">1. Volatile organic compound emissions shall not exceed 0.0004 lb/hr.2. Activated carbon canister shall be changed quarterly. |
| 47 (CAS-03) | Waste Water Storage Tank | <ol style="list-style-type: none">1. Volatile organic compound emissions shall not exceed 0.0003 lb/hr.2. Activated carbon canister shall be changed quarterly. |
| 48 (CAS-06) | Waste Disposal Silo | <ol style="list-style-type: none">1. Particulate emissions shall not exceed 8.56 lbs/hr and 37.39 TPY.2. Opacity of visible emissions shall not equal or exceed forty percent (40%).3. Process throughput shall not exceed 3.0 TPH and 26,208 TPY. |
| 49 (CAS-07) | Soda Ash Storage Silo | <ol style="list-style-type: none">1. Particulate emissions shall not exceed 8.56 lbs/hr and 37.39 TPY.2. Opacity of visible emissions shall not equal or exceed forty percent (40%). |

POINT OF EMISSION

AFFECTED FACILITY CONDITIONS

| | | |
|-------------|--|---|
| 50 (A-15) | A-Line Packaging
fines collection
system | <p>3. Process throughput shall not exceed 3.0 TPH and 26,208 TPY.</p> <p>1. Particulate emissions shall not exceed 8.56 lbs/hr and 35.95 TPY.</p> <p>2. Opacity of visible emissions shall not equal or exceed forty percent (40%).</p> <p>3. Process throughput shall not exceed 3.0 TPH and 25,200 TPY.</p> |
| 51 (C-09) | A, B; C & Acid Wash
fines packaging
system | <p>1. Particulate emissions shall not exceed 4.10 lbs/hr and 17.96 TPY.</p> <p>2. Opacity of visible emissions shall not equal or exceed forty percent (40%).</p> <p>3. Process throughput shall not exceed 1.0 TPH and 8,760 TPY.</p> |
| 52 (F-01) | Activated Carbon
Fine Mesh Production | <p>1. Particulate emissions shall not exceed 2.83 lbs/hr and 12.42 TPY.</p> <p>2. Opacity of visible emissions shall not equal or exceed twenty percent (20%).</p> <p>3. Production of Fine Mesh Activated Carbon (12 x 40 mesh) shall not exceed 2.0 TPH and 17,520 TPY.</p> |
| 53 (CAS-09) | Reactivation Process
for custom product | <p>1. Particulate emissions shall not exceed 0.56 lb/hr and 2.48 TPY.</p> |

PERMIT NUMBER: O-94-020

PERMIT - Continued

POINT OF EMISSION

AFFECTED FACILITY CONDITIONS

2. Opacity of visible emissions shall not equal or exceed twenty percent (20%).
3. Production of Reactivation Carbons shall not exceed 1.66 TPH and 14,600 TPY.

GENERAL CONDITIONS:

1. In no way does this permit relieve the permittee from compliance with all applicable emission and air quality standards.
2. No deviation from the plans and specifications submitted with Calgon's application or the conditions specified herein is permitted, unless authorized in writing by the Director, Division for Air Quality and the U.S. EPA Administrator. This permit shall become null and void at any time the terms and conditions contained herein are violated.
3. The permittee shall maintain and make available for inspection by this Division all production records necessary to assure that the allowable annual production and emission rates will not be exceeded.
4. Pursuant to State Regulations 401 KAR 50:012, General application, Section 1(1) and 401 KAR 50:055, General compliance requirements, Section 2(5), all air pollution control equipment and all pollution control measures proposed by the application in response to which this permit is issued shall be in place, properly maintained, and in operation at any time an affected facility for which the equipment and measures are designed is operated, except as provided by State Regulation 401 KAR 50:055, Section 1.
5. The permittee shall abide by the terms and conditions of 401 KAR 50:055, entitled, "General compliance requirements".
6. The permittee shall not allow the emission of potentially hazardous matter or toxic substances in such quantities or duration as to be harmful to the health and welfare of humans, animals, and plants.
7. Emissions from the source shall not cause an exceedance of any ambient air quality standard contained in Regulation 401 KAR 53:010, Ambient air quality standards.

GENERAL CONDITIONS:

- 8. In no way does this permit relieve the permittee from the responsibility of controlling emissions at all times in accordance with 401 KAR 63:010, Fugitive emissions.
- 9. The following emission rates shall not be exceeded at Emission Point #45, Reactivation Furnace:

| Pollutant | Emission Rate
(lbs/hr) |
|-------------------------|---------------------------|
| Particulate | 7.01 |
| Sulfur Dioxide | 21.04 |
| Volatile Organic Cmpds. | 1.8 |
| Nitrogen Oxides | 26.90 |
| Hydrogen Fluoride | 0.5 |
| Lead | 2.58 |

- 10. In no way does this permit relieve the permittee from the responsibility of controlling odorous emissions in accordance with the ambient odor standard in Regulation 401 KAR 53:010.
- 11. Upon the effective date of this permit, all previous operating permits issued to this source at this location shall hereby be null and void.
- 12. A minimum firebox temperature of 1400F and a residence time of 0.1 second shall be maintained at all times in each baker and activator afterburner.
- 13. A firebox temperature chart recorder shall be installed for each baker and activator afterburner, properly maintained, and kept in good operating condition.
- 14. The permittee shall comply with all conditions of this permit. Noncompliance shall be (a) violation(s) of State Regulation 401 KAR 50:035, Permits, Section 4 and Federal Statute 42 USC 7401 through 7671q (the Clean Air Act) and is grounds for an enforcement action including but not limited to the termination, revocation and reissuance, or revision of this permit.
- 15. Any deviations from permit requirements, including those due to upset conditions, shall be promptly reported to the Division's Ashland Regional Office. In accordance with State Regulation 401 KAR 50:055, General compliance requirements, Section 1, the reports shall describe the probable cause of the deviations and corrective actions or preventative measures taken.
- 16. Any condition or portion of this permit which becomes suspended or is ruled invalid as a result of any legal or other action shall not invalidate any other portion or condition of this permit.

GENERAL CONDITIONS:

17. The permittee shall not use as a defense in an enforcement action, the contention that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance.
18. This permit does not convey property rights or exclusive privileges.
19. The permittee shall furnish to the Division, in writing, information that the Division may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. Upon request, the permittee shall also furnish to the Division copies of records, reports, and other information required by the permit to be kept.
20. The permittee shall allow the Cabinet or an authorized representative to perform the following:
 - a. Enter upon the premises where a source is located or emissions-related activity is conducted, or where records are kept;
 - b. Have access to and copy, at reasonable times, any records required by the permit;
 1. During normal office hours, and
 2. During periods of emergency when prompt access to records is essential to proper assessment by the Cabinet;
 - c. Inspect, at reasonable times, any facilities, equipment (including monitoring and pollution control equipment), practices, or operations required by the permit. Reasonable times shall include, but are not limited to the following:
 1. During all hours of operation at the source,
 2. For all sources operated intermittently, during all hours of operation at the source and the hours between 8:00 a.m. and 4:30 p.m., Monday through Friday, excluding holidays, and
 3. During an emergency.
 - d. Sample or monitor, at reasonable times, substances or parameters to assure compliance with the permit or any applicable requirements. Reasonable times shall include, but are not limited to the following:
 1. During all hours of operation at the source,
 2. For all sources operated intermittently, during all hours of operation at the source and the hours between 8:00 a.m. and 4:30 p.m., Monday through Friday, excluding holidays, and
 3. During an emergency. 401 KAR 50:035, Permits, Section 5(4). Emergency orders.
21. Nothing in this permit shall alter or affect the liability of the permittee for any violation of applicable requirements prior to or at the time of permit issuance.

GENERAL CONDITIONS:

22. Pursuant to State Regulation 401 KAR 50:035, Permits, Section 4(7), an emergency shall constitute an affirmative defense to an action brought for noncompliance with the technology-based emission limitations if the permittee demonstrates through properly signed contemporaneous operating logs or other relevant evidence that:
 - a. An emergency occurred and the permittee can identify the cause of the emergency;
 - b. The permitted facility was at the time being properly operated;
 - c. During an emergency, the permittee took all reasonable steps to minimize levels of emissions that exceeded the emissions standards or other requirements in the permit; and
 - d. The permittee notified the Division as promptly as possible and submitted written notice of the emergency to the Division within two working days after the time when emission limitations were exceeded due to the emergency if the notice met the requirement of State Regulation 401 KAR 50:035, permits, Section 4(1)(c)3.b., and included a description of the emergency, steps taken to mitigate emissions, and corrective actions taken.
23. In an enforcement proceeding, the permittee seeking to establish the occurrence of an emergency shall have the burden of proof.
24. Except as provided in State Regulation 401 KAR 50:035, Permits, compliance by the affected facilities listed herein with the conditions of this permit shall be deemed to be compliance with all applicable requirements as of the date of the issuance of this permit.
25. Visible, particulate, sulfur dioxide, and VOC emissions as measured by methods referenced in State Regulation 401 KAR 50:015, Documents incorporated by reference, Section 1, shall not exceed the respective emission limitations specified herein.
26. All terms and conditions contained herein shall be enforceable by the U.S. EPA and citizens, except those permit conditions identified as state-origin in this permit.
27. The permittee shall maintain up-to-date, readily accessible continuous record of the following operating parameters:
 - a. The firebox temperature of 1400F
 - b. The volumetric flow rateThese records shall be maintained for at least two (2) years after date of recording and shall be made available to the cabinet and the U.S. EPA for inspection upon request.
28. The throughputs and emissions from the affected facilities shall remain subject to the applicable VOC/RACT provisions even if they fall below the applicability threshold.

PERMIT NUMBER: O-94-020

PERMIT - Continued

GENERAL CONDITIONS:

29. An Emission Reduction Credit (ERC) for the following pollutants due to the installment of new wet scrubber has been banked and recorded in accordance with Regulation 401 KAR 51:055.

| Pollutant | Emissions banked |
|-----------|------------------|
| PM | 35.1 Tons/yr |
| SO2 | 158.5 Tons/yr |

PIR
KY-096
4/5
LAL



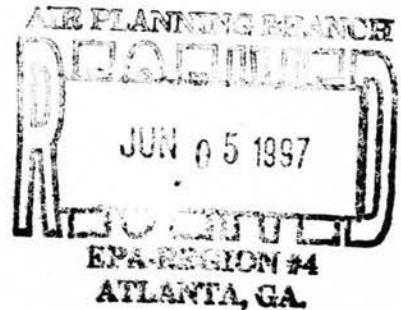
JAMES E. BICKFORD
SECRETARY

PAUL E. PATTON
GOVERNOR

COMMONWEALTH OF KENTUCKY
NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET
OFFICE OF THE SECRETARY
FRANKFORT, KENTUCKY 40601
TELEPHONE: (502) 564-3350

May 20, 1997

Mr. John H. Hankinson
Regional Administrator
U.S. EPA, Region IV
Atlanta Federal Center
100 Alabama St., S.W.
Atlanta, Georgia 30303



Dear Mr. Hankinson:

Enclosed are five copies of a request from the Air Pollution Control District of Jefferson County (District) for a source specific State Implementation Plan (SIP) revision to the Jefferson County portion of the State Implementation Plan.

The current Reynolds source-specific SIP, which was approved by EPA on May 16, 1990, identifies a bubble for the nine rotogravure printing/coating machines at this stationary source. This bubble includes a daily and annual volatile organic compound (VOC) limit and a limit on the number of days of operation. Reynolds has requested that the daily VOC limit be reduced by 706 pounds per day to allow for 365-day-per year operation while still maintaining the current annual VOC limit. This change would provide flexibility for plant operations so that customer demands can be satisfied, and is made possible by increased use of water-borne inks and coatings. While this change results in a reduction of the SIP-allowed VOC emissions for these emissions units, the District is not, at this time, recognizing these reductions in the requirements for the Louisville ozone nonattainment area.

Your prompt consideration of this request is appreciated. If you have any questions or comments, please contact Mr. Arthur L. Williams at (502) 574-6000.

Sincerely,

James E. Bickford
Secretary

JEB:mhk



JEFFERSON COUNTY, KENTUCKY
DEPARTMENT OF PLANNING AND ENVIRONMENTAL MANAGEMENT
AIR POLLUTION CONTROL DISTRICT

DAVID L. ARMSTRONG
County Judge/Executive

May 8, 1997

ADRIAN P. FREUND, AICP
Department Director

Mr. John E. Hornback, Director
Division for Air Quality
803 Schenkel Lane
Frankfort, Kentucky 40601-1403

RECEIVED RECEIVED

ARTHUR L. WILLIAMS
District Director

MAY 13 1997

MAY 12 1997

Dear Mr. Hornback:

Program Planning & Administration Branch
Division for Air Quality
DIRECTOR'S OFFICE
DIVISION FOR AIR QUALITY

The Air Pollution Control District of Jefferson County (District) requests that the enclosed material be submitted to the United States Environmental Protection Agency as a revision to the Jefferson County portion of the State Implementation Plan (SIP). The material for this proposed SIP revision is comprised of 5 copies of a Board Order and supporting information for a revision to the current source-specific SIP for Reynolds Metals Company, Laminating Plant (Reynolds).

The current Reynolds source-specific SIP, which was approved by EPA on May 16, 1990, identifies a bubble for the nine rotogravure printing/coating machines at this stationary source. This bubble includes a daily and annual volatile organic compound (VOC) limit and a limit on the number of days of operation. Reynolds has requested that the daily VOC limit be reduced by 706 pounds per day to allow for 365-day-per year operation while still maintaining the current annual VOC limit. This change would provide flexibility for plant operations so that customer demands can be satisfied, and is made possible by increased use of water-borne inks and coatings. While this change results in a reduction of the SIP-allowed VOC emissions for these emissions units, the District is not, at this time, recognizing these reductions in the requirements for the Louisville ozone nonattainment area.

If you have any questions regarding this matter, please do not hesitate to contact Ms. Melanie Davis, Air Pollution Technical Coordinator, at (502) 574-7217 or me.

Sincerely,

Arthur L. Williams
Director
(502) 574-8689

Enclosures

ALW/MSD:jt

cc: Mr. Adrian Freund
Ms. Melanie Davis

850 Barret Avenue
LOUISVILLE, KENTUCKY 40204
(502) 574-6000 • FAX (502) 574-5306

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STAFF RECOMMENDATION

COMPANY:

Reynolds Metals Company (FORMERLY ALCAN FOIL PRODUCTS)
Laminating Plant
1225 W. Burnett Ave
Louisville, KY 40210

AFFECTED FACILITIES:

Nine rotogravure printing/coating machines (Machine nos. 6, 7, 8, 9, 10, 11, 14, 15, and 16).

POLLUTANT AND APPLICABLE REGULATION:

Volatile Organic Compounds (VOCs)
State Implementation Plan (SIP) Revision Application - Dec. 1988 (Revised Apr. 1989)

BACKGROUND:

On May 16, 1990, EPA approved a source specific SIP revision which allows nine rotogravure printing/coating machines at the plant to achieve compliance with the applicable VOC reasonably available control technology (RACT) regulations by using a plan which averages emissions and emission reduction credits within the facility.

The company has requested changes to the plan which would allow more flexibility for plant operations so that customer demands can be satisfied.

The SIP revision, approved in 1990, limits the emissions from the 9 machines to a maximum of 2,164 pounds of VOC per day and 266.2 tons per year with 246 operating days per year. (Not included in these figures are an additional 3.4 tons of VOC per year allowed in the plan to account for makeup/cleanup solvent usage). The company has proposed that the 9 machines be limited instead to 1,458 pounds of VOC per day with the 266.2 tons per year value remaining the same and with the operating days increasing to 365. This proposal will reduce the daily limit by 706 pounds of VOC and allow the plant the flexibility to operate more days per year.

The SIP revision, approved in 1990, also incorporated the District operating permits which specified a maximum operating speed for each machine. The company has proposed that the maximum operating speeds be removed from the operating permits since this was not part of the original SIP submittal strategy for ensuring compliance with the plan and since machine speeds are not a suitable VOC emission surrogate when a facility uses both water-based and solvent-based inks and coatings. A large portion of the plant's business relies heavily on water - based inks and coatings. Removing the speed limits will not cause an increase in emissions above the current allowable level nor reduce the enforceability of the emissions limits which are thoroughly tracked and documented.

RECOMMENDATION:

The staff recommends that the following proposals be approved and submitted as a revision to the State Implementation Plan:

- 1) Machine Nos. 6, 7, 8, 9, 10, 11, 14, 15, and 16 are included in the VOC emissions cap in the SIP revision plan. Annual emissions from the machines within the cap shall be limited to 266.2 tons per year. Daily emissions shall be limited to 1,458 pounds. (Not included in these figures are an additional 3.4 tons of VOC per year allowed in the plan to account for makeup/cleanup solvent usage). The operating day limitation shall be rescinded.

- 2) The operating speed limitations for the machines shall be rescinded.

c:\wpwin60\engineer\mccarthy\reynolds:da



AIR POLLUTION CONTROL DISTRICT OF JEFFERSON COUNTY



914 East Broadway • Louisville, Kentucky 40204

CONDITIONAL OPERATING PERMIT

Permit No. 103-74 Effective Date Feb 28, 1989 Expiration Date Feb 28, 1990
 Permit Fee \$25.00 EIS Plant 0015 EIS Emission Pt(s) 02

Permission is hereby given by the Air Pollution Control District of Jefferson County to OPERATE PROCESS equipment located at:

Alcan Foil Products, Laminating Plt, 1225 W Burnett St, Louisville, KY

in accordance with plans and specifications on file with the District and under the conditions stipulated on the reverse hereof.

Permit covers:

LAMINATORS #6 and #14, Inta-Roto Inc., Model # GM-1000, each equipped with a rotogravure printing (or coating) station.

Max Permitted Cap NA ~~420 and 480 ft/min~~ Permitted Oper Schedule *

Fuels Used: Primary Natural gas Secondary NA

| Allowable Emissions | Basis: % Rated Capacity | | | | | | Max Permitted Oper Hrs/Yr |
|---------------------|-------------------------|-------|-----|-------|-------|-------|---------------------------|
| | TSP | SO2 | VOC | CO | NOx | Other | |
| Lbs/Hr | _____ | _____ | * | _____ | _____ | _____ | _____ |
| Tons/Yr | _____ | _____ | * | _____ | _____ | _____ | _____ |

Applicable Regulation(s) *

Control Reference NA *See Additional Conditions

Neither EMISSIONS OFFSET nor PSD applicable in the granting of this permit.

Emissions Bank Code Ref. 43101-031W

Bubble Reference SIP Revision Appl. - Dec 1988 (Revised Apr 1989)

Applicant for Permit Albert Risen, Jr.

Title General Mgr & Vice President

Application Dated Jan 1, 1974

John C. McCarthy
 Reviewing Engineer (03)

Hazel M. Rogers Jr.
 Air Pollution Control Officer

Additional conditions applicable to this permit are attached hereto and made part hereof on pages 2 - 5. (01759-0000- 9100)

ADDITIONAL CONDITIONS

This permit has been issued under the following conditions:

- 1) The USEPA's emission trading policy statement (ETPS) requires a net emissions reduction of 20% from the lowest-of-actual, -SIP-allowable, -or- RACT-allowable emissions determined over an established baseline period. The plant has prepared and submitted a State Implementation Plan Revision application (SIP Revision, December 1988, revised April 1989) to address the requirements of the ETPS. The conditions and provisions of the emissions bubble as described in the SIP Revision application shall be the applicable regulation.
- 2) The nine rotogravure printing/coating machines at the plant (Machine numbers 6, 7, 8, 9, 10 (formerly 13), 11, 14, 15, and 16) shall be treated as one affected facility combined under a bubble when determining compliance with the emissions bubble.

The overcontrol achieved from the use of water-borne coatings/inks (extra low in VOC) can be used for credit during the baseline determination for this bubble. This credit taken for water-borne coatings/inks used during the baseline period cannot be used during post-baseline emission calculations. However, credit can be taken for water-borne or high solids coatings/inks developed and used after the baseline period.

The control achieved from recirculating the air through the oven on Machine #16 can be used when calculating the pounds of VOC after the application of any control measures. A control efficiency of 50% shall be used in the calculations based on the performance testing which was conducted in January of 1991.

365

The Plant shall be further limited as the number of VOC operating days shall be limited to ~~246~~ days per year. A VOC operating day shall be defined as a day in which a solvent-borne coating/ink is run on a machine within the bubble or a day in which greater than 100 pounds of VOC are emitted within the bubble from water-borne or high solids coatings/inks as defined in Regulation 6.29, Section 6, (a) and (c) respectively.

The company shall follow the production scheduling and the recordkeeping procedures specified in the December 1988 SIP Revision Application (revised April 1989).

- 3) The company may use in the bubble 214.0 tons/year of VOC emission reduction credits (267.5 tons/year of VOC emission credits purchased from the Federal Paper Board Company, less a 20 percent reduction). These credits, after subtracting 3.4 tons per year adjustment for makeup solvent usage, shall be equally distributed over the ~~246~~ VOC operating production days. (As more accurate data is gathered concerning fugitive emissions, there could be revisions to the 3.4 tons per year value as approved by the District.) A total of ~~1712~~ pounds VOC ERC per day are available.

365

1154

- 4) The company shall use a daily averaging period (three 8-hour shift operation) to demonstrate compliance.

5) The company shall supply such information, as required by the District, to demonstrate compliance on a daily basis. The company shall continue using the present compliance reporting system, as specified in the December 1988 SIP Revision Application (revised April 1989), unless changes to the system are approved or requested by the District. For each rotogravure product produced on a machine within the emissions bubble, accurate records shall be maintained of 1) the date, 2) the machine number, 3) the yards run, 4) the output width, 5) the output laydown rate (pounds of coatings used for specified area), and 6) the coating used. The company shall verify the accuracy of the laydown rates according to Attachment 2 of the December 1988 SIP Revision Application (revised April 1989) or as required by the District. (This may include comparing the computer generated emissions to emissions calculated from actual ink and solvent usages over either short or long term periods.) The actual measured laydown value from each master roll produced shall be used in determining the actual emissions for each day. (In the limited cases where the amount of solids applied to the base material is too low to allow an accurate measurement, the laydown value shall be determined from empirical data.) The "TABLE VOC", "TABLE SLD", and "TABLE GAL" shall be determined by using the applicable ASTM or federal methods as specified in Condition 10. The "GAL OF COAT", "GAL OF SOLIDS", "BEFORE LBS VOC", "AFTER LBS VOC", "ALLOW LBS VOC", "CREDIT + ALLOW", and other parameters such as makeup solvent usage, shall be calculated as specified in Sections 3, 4, and Attachment 1 of the December 1988 SIP Revision Application (revised April 1989). Records shall be maintained of the daily emissions (a total of the first, second, and third shifts) from the nine rotogravure printing/coating machines. Compliance reports shall be submitted for each calendar month and are to be submitted to the District within 20 calendar days following the end of each month.

1458

6) The nine rotogravure/printing/coating machines at the plant shall not emit more than ~~2164~~ pounds VOC per day (the adjusted baseline emission limit plus the available emission reduction credits). Also, the nine rotogravure printing/coating machines at the plant shall not emit more than ~~266.1~~ tons/year. (This includes VOC emissions from all solvent-borne, water-borne, and high solids coatings/inks on both VOC and non-VOC operating days.)

266.2
 ↑
 Correct no.
 from SIP Rev.
 Appl. 7)

7) The nine rotogravure printing/coating machines at the plant shall comply with a daily "RACT-allowable" which is equivalent to: 65% by weight control for solvent-based inks run on the machines within the bubble, usage of 75% water by volume in the volatile portion of water-based coatings/inks, and usage of high solids content coatings/inks with greater than 60% nonvolatile material on a water-free basis.

8) As specified in Regulation 1.04, Regulation 6.01, Section 4, and Regulation 6.29, Section 4, the company shall perform any additional compliance testing as required by the District. This testing shall be performed using test methods as approved by the District. As requested by the District, EPA Test Methods 1, 2, 3, 4, 24, 24A, 25, and 25A as specified in the Code of Federal Regulations (CFR) Title 40, Part 60, Appendix A, and Procedures F.1, L, and T as specified in the EPA "Guidelines for Developing Capture Efficiency Protocols" shall be used in order to determine the efficiency of control devices.

- 9) If additional VOC control equipment is installed at the Plant, a performance test shall be conducted within 60 days of startup of the new equipment.
- 10) The company shall implement the following program to periodically certify the accuracy of their coating data:
 - (a) The VOC, water, and solids content of the coatings shall be determined by using the following test methods: ASTM D1475, ASTM D2369, ASTM D3792, ASTM D4017, or those test methods which are approved by the District and EPA.
 - (b) Any new production coating/ink shall be tested prior to usage.
 - (c) In the event of a change or modification in the formulation of an existing coating/ink, a test shall be completed and submitted to the District within 90 days of this change.
 - (d) As a quality assurance program, the following test plan shall be conducted:
 - (i) All coatings/inks that represent 10% of the total gallons used in the bubble for the previous calendar year shall be tested quarterly.
 - (ii) All coatings/inks that represent 5% of the total gallons used in the bubble for the previous calendar year shall be tested semiannually.
 - (iii) All coatings/inks that represent 1% of the total gallons used in the bubble for the previous calendar year shall be tested annually.
 - (iv) All coatings/inks that represent greater than 50 gallons of usage but less than 1% of the total gallons used in the bubble for the previous calendar year shall be tested biennially.
 - (e) If after testing, the VOC content of a coating/ink is found to vary more than 10% from the manufacturer's stated value, the higher value shall be used until the discrepancy is resolved to the District's satisfaction.
 - (f) If it is determined upon reviewing the coating/ink usage for the previous calendar year that a coating/ink is overdue for testing due to being redesignated to a more restrictive schedule, this testing shall be completed by April 1st of the new calendar year.
- 11) Additional VOC emission reductions may be imposed on the rotogravure printing/coating operations at the plant as a result of the future revisions which will be made to the State Implementation Plan for ozone.
- 12) The company shall perform recordkeeping in accordance with District Regulation 1.05 to determine compliance with the daily emissions standard.



**AIR POLLUTION CONTROL DISTRICT
OF JEFFERSON COUNTY**



914 East Broadway • Louisville, Kentucky 40204

CONDITIONAL OPERATING PERMIT

Permit No. 104-74 Effective Date Feb 28, 1989 Expiration Date Feb 28, 1990
 Permit Fee \$25.00 EIS Plant 0015 EIS Emission Pt(s) 02

Permission is hereby given by the Air Pollution Control District of Jefferson County to OPERATE PROCESS equipment located at:

Alcan Foil Products, Laminating Plt., 1225 W Burnett St., Louisville, KY

in accordance with plans and specifications on file with the District and under the conditions stipulated on the reverse hereof.

Permit covers:

LAMINATORS #7 and #10(formerly #13), Schmutz Mfg., each equipped with a rotogravure printing (or coating) station.

Max Permitted Cap NA ~~800 & 400 ft/min~~ Permitted Oper Schedule *

Fuels Used: Primary Natural gas Secondary NA

| Allowable Emissions | Basis: | | | | | | Max Permitted Oper Hrs/Yr |
|---------------------|--------|-------|-----|-------|-------|-------|---------------------------|
| | TSP | SO2 | VOC | CO | NOx | Other | |
| Lbs/Hr | _____ | _____ | * | _____ | _____ | _____ | _____ |
| Tons/Yr | _____ | _____ | * | _____ | _____ | _____ | _____ |

Applicable Regulation(s) *

Control Reference NA *See Additional Conditions

Neither EMISSIONS OFFSET nor PSD applicable in the granting of this permit.

Emissions Bank Code Ref. 43101-031W

Bubble Reference SIP Revision Appl. - Dec 1988 (Revised Apr 1989)

Applicant for Permit Albert Eisen, Jr.

Title General Mgr & Vice President

Application Dated Jan 1, 1974

John C. McCarthy
Reviewing Engineer (03)

Hazel M. Rogers Jr.
Air Pollution Control Officer

Additional conditions applicable to this permit are attached hereto and made part hereof on page 2. (01759-0000- 9100)

AIR POLLUTION CONTROL DISTRICT OF JEFFERSON COUNTY

Permit No. 104-74

Page 2

EIS Plant 0015

ADDITIONAL CONDITIONS

(See permit conditions on Permit no. 103-74).

(01759-3123- 9100)



AIR POLLUTION CONTROL DISTRICT OF JEFFERSON COUNTY



914 East Broadway • Louisville, Kentucky 40204

CONDITIONAL OPERATING PERMIT

Permit No. 105-74 Effective Date Feb 28, 1989 Expiration Date Feb 28, 1990
 Permit Fee \$25.00 EIS Plant 0015 EIS Emission Pt(s) 02

Permission is hereby given by the Air Pollution Control District of Jefferson County to OPERATE PROCESS equipment located at:

Alcan Foil Products, Laminating Plt, 1225 W Burnett St, Louisville, KY

in accordance with plans and specifications on file with the District and under the conditions stipulated on the reverse hereof.

Permit covers:

LAMINATORS #8 and #9, Miesel Press Co.: #8-equipped with 1 rotogravure printing (or coating) station; #9 - equipped with 2 rotogravure printing (or coating) stations.

Max Permitted Cap NA ~~1000 ft/min each~~ Permitted Oper Schedule *

Fuels Used: Primary Natural gas Secondary NA

| Allowable Emissions | Basis: | | | | | | % Rated Capacity | Max Permitted Oper Hrs/Yr |
|---------------------|--------|-----|-----|----|-----|-------|------------------|---------------------------|
| | TSP | SO2 | VOC | CO | NOx | Other | | |
| Lbs/Hr | — | — | * | — | — | — | — | |
| Tons/Yr | — | — | * | — | — | — | — | |

Applicable Regulation(s) *

Control Reference NA *See Additional Conditions

Neither EMISSIONS OFFSET nor PSD applicable in the granting of this permit.

Emissions Bank Code Ref. 43101-031W

Bubble Reference SIP Revision Appl. - Dec 1988 (Revised Apr 1989)

Applicant for Permit Albert Risen, Jr.

Title General Mgr & Vice President

Application Dated Jan 1, 1974

John C. McCarthy
 Reviewing Engineer (03)

Hamel M. Rogers Jr.
 Air Pollution Control Officer

Additional conditions applicable to this permit are attached hereto and made part hereof on page 2. (01759-0000- 9100)

AIR POLLUTION CONTROL DISTRICT OF JEFFERSON COUNTY

Permit No. 105-74

Page 2

EIS Plant 0015

ADDITIONAL CONDITIONS

(See permit conditions on Permit no. 103-74).

(01759-3123- 9100)



AIR POLLUTION CONTROL DISTRICT OF JEFFERSON COUNTY



914 East Broadway • Louisville, Kentucky 40204

CONDITIONAL OPERATING PERMIT

Permit No. 106-74 Effective Date Feb 28, 1989 Expiration Date Feb 28, 1990
 Permit Fee \$25.00 EIS Plant 0015 EIS Emission Pt(s) 02

Permission is hereby given by the Air Pollution Control District of Jefferson County to OPERATE PROCESS equipment located at:

Alcan Foil Products, Laminating Plt, 1225 W Burnett St, Louisville, KY

in accordance with plans and specifications on file with the District and under the conditions stipulated on the reverse hereof.

Permit covers:

LAMINATOR No. 11, Anaconda & Fisher Klosterman, equipped with a rotogravure printing (or coating) station.

Max Permitted Cap NA ~~1990 ft/min~~ Permitted Oper Schedule *

Fuels Used: Primary Natural gas Secondary NA

| Allowable Emissions | TSP | SO2 | VOC | CO | NOx | Other | Basis: % Rated Capacity | Max Permitted Oper Hrs/Yr |
|---------------------|-------|-------|-----|-------|-------|-------|-------------------------|---------------------------|
| Lbs/Hr | _____ | _____ | * | _____ | _____ | _____ | _____ | _____ |
| Tons/Yr | _____ | _____ | * | _____ | _____ | _____ | _____ | _____ |

Applicable Regulation(s) *

Control Reference NA *See Additional Conditions

Neither EMISSIONS OFFSET nor PSD applicable in the granting of this permit.

Emissions Bank Code Ref. 43101-031W

Bubble Reference SIP Revision Appl. - Dec 1988 (Revised Apr 1989)

Applicant for Permit Albert Risen, Jr.

Title General Mgr & Vice President Application Dated Jan 1, 1974

John C. McCarthy
Reviewing Engineer (03)

Hamel M. Rogers Jr.
Air Pollution Control Officer

Additional conditions applicable to this permit are attached hereto and made part hereof on page 2. (01759-0000- 9100)

AIR POLLUTION CONTROL DISTRICT OF LEFFERSON COUNTY

Permit No. 106-74

Page 2

EIS Plant 0015

ADDITIONAL CONDITIONS

(See permit conditions on Permit no. 103-74).

(01759-3123- 9100)



**AIR POLLUTION CONTROL DISTRICT
OF JEFFERSON COUNTY**



914 East Broadway - Louisville, Kentucky 40204

CONDITIONAL OPERATING PERMIT

Permit No. 110-74 Effective Date Feb 28, 1989 Expiration Date Feb 28, 1990
 Permit Fee \$25.00 EIS Plant 0015 EIS Emission Pt(s) 02

Permission is hereby given by the Air Pollution Control District of Jefferson County to OPERATE PROCESS equipment located at:

Alcan Foil Products, Laminating Plt, 1225 W Burnett St, Louisville, KY

in accordance with plans and specifications on file with the District and under the conditions stipulated on the reverse hereof.

Permit covers:

1 COATER, WALDRON, Hartig & Ross, Machine #15, equipped with a roto-gravure printing (or coating) station.

Max Permitted Cap NA ~~1000 ft/min~~ Permitted Oper Schedule *

Fuels Used: Primary Natural gas Secondary NA

| Allowable Emissions | Basis: | | | | | | % Rated Capacity | Max Permitted Oper Hrs/Yr |
|---------------------|--------|-------|-----|-------|-------|-------|------------------|---------------------------|
| | TSP | SO2 | VOC | CO | NOx | Other | | |
| Lbs/Hr | _____ | _____ | * | _____ | _____ | _____ | _____ | |
| Tons/Yr | _____ | _____ | * | _____ | _____ | _____ | _____ | |

Applicable Regulation(s) *

Control Reference NA *See Additional Conditions

Neither EMISSIONS OFFSET nor PSD applicable in the granting of this permit.

Emissions Bank Code Ref. 43101-031W

Bubble Reference SIP Revision Appl. - Dec 1988 (Revised Apr 1989)

Applicant for Permit Albert Risen, Jr.

Title General Mgr & Vice President

Application Dated Jan 1, 1974

John C. McCarthy
 Reviewing Engineer (03)

Harvel M. Rogers Jr
 Air Pollution Control Officer

Additional conditions applicable to this permit are attached hereto and made part hereof on page 2. (01759-0000- 9100)

AIR POLLUTION CONTROL DISTRICT OF JEFFERSON COUNTY

Permit No. 110-74

Page 2

EIS Plant 0015

ADDITIONAL CONDITIONS

(See permit conditions on Permit no. 103-74).

(01759-3123- 9100)



AIR POLLUTION CONTROL DISTRICT OF JEFFERSON COUNTY



914 East Broadway • Louisville, Kentucky 40204

CONDITIONAL OPERATING PERMIT

Permit No. 111-74 Effective Date Feb 28, 1989 Expiration Date Feb 28, 1990
 Permit Fee \$25.00 EIS Plant 0015 EIS Emission Pt(s) 02

Permission is hereby given by the Air Pollution Control District of Jefferson County to OPERATE PROCESS equipment located at:

Alcan Foil Products, Laminating Plt, 1225 W Burnett St, Louisville, KY

in accordance with plans and specifications on file with the District and under the conditions stipulated on the reverse hereof.

Permit covers:

1 TWO SIDE COATER, Dusenbury Co., Machine #16, equipped with two roto-gravure printing (or coating) stations.

Max Permitted Cap NA ~~1000 ft/min~~ Permitted Oper Schedule *

Fuels Used: Primary Natural gas Secondary NA

| Allowable Emissions | Basis: | | | | | | % Rated Capacity | Max Permitted Oper Hrs/Yr |
|---------------------|--------|-----|-----|-----|-----|-------|------------------|---------------------------|
| | TSP | SO2 | VOC | CO | NOx | Other | | |
| Lbs/Hr | --- | --- | * | --- | --- | --- | --- | |
| Tons/Yr | --- | --- | * | --- | --- | --- | --- | |

Applicable Regulation(s) *

Control Reference NA *See Additional Conditions

Neither EMISSIONS OFFSET nor PSD applicable in the granting of this permit.

Emissions Bank Code Ref. 43101-031W

Bubble Reference SIP Revision Appl. - Dec 1988 (Revised Apr 1989)

Applicant for Permit Albert Risen, Jr.

Title General Mgr & Vice President

Application Dated Jan 1, 1974

John C. McCarthy
Reviewing Engineer (03)

Harrel M. Rogers Jr
Air Pollution Control Officer

Additional conditions applicable to this permit are attached hereto and made part hereof on page 2. (01759-0000- 9100)

Permit No. 111-74

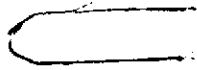
Page 2

EIS Plant 0015

ADDITIONAL CONDITIONS

(See permit conditions on Permit no. 103-74).

(01759-3123- 9100)



Key
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9/15
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JAMES E. BICKFORD
SECRETARY

PAUL E. PATTON
GOVERNOR

COMMONWEALTH OF KENTUCKY
NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET

OFFICE OF THE SECRETARY
FRANKFORT, KENTUCKY 40601
TELEPHONE: (502) 564-3350

RECEIVED
SEP 16 1999
AIR PLANNING BRANCH

September 7, 1999

Mr. John H. Hankinson
Regional Administrator
U.S. EPA, Region 4
61 Forsyth Street
Atlanta, Georgia 30303-3104

Dear Mr. Hankinson:

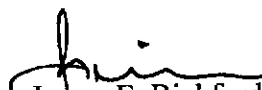
The Natural Resources and Environmental Protection Cabinet hereby submits for final approval a source specific revision to Kentucky's State Implementation Plan (SIP). This revision allows American Greetings Corporation to have an alternative averaging period other than that specified by Kentucky air quality regulations 59:212 and 50:016. Kentucky's regulations require a 24-hour averaging period. This revision allows the source to use a 30-day averaging period. After a thorough review, U.S. Environmental Protection Agency (EPA) agreed with the analysis made by the Division for Air Quality that the alternate averaging period will not jeopardize maintenance of the National Ambient Air Quality Standards in the Laurel County area.

The Commonwealth of Kentucky requests that EPA approve the submission of following terms and conditions of the final permit as an approved part of Kentucky's State Implementation Plan:

1. Section B. Number 5. Specific Record Keeping Requirements; and
2. Section F. Monitoring, Record Keeping, and Reporting Requirements; Number 1 through 7.

This submittal includes five sets of the revision package, including selected portions of the permit, public hearing notice, and proof of publication. No comments were received during the public review period. If you have questions regarding this SIP submittal, please contact Mr. John Hornback, Director, Division for Air Quality at (502) 573-3382.

Sincerely,


James E. Bickford
Secretary

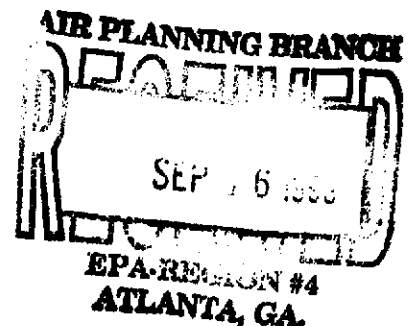
JEB/SMW/dcb

Enclosures

c: Linda Anderson-Carnahan



AN EQUAL OPPORTUNITY EMPLOYER M/F/D



Commonwealth of Kentucky
Natural Resources and Environmental Protection Cabinet
Department for Environmental Protection
Division for Air Quality
803 Schenkel Lane
Frankfort, Kentucky 40601
(502) 573-3382

AIR QUALITY PERMIT

Permittee Name: American Greetings Corporation
Mailing Address: P.O. Box 1570
Corbin, Kentucky 40702-3570

Source Name: same as above
Mailing Address: same as above

Source Location: American Greetings Road
Corbin, Kentucky 40701-9803

Permit Type: Federally-enforceable
Review Type: Title V/Synthetic Minor

Permit Number: V-98-049
Log Number: F454
Application
Complete Date: February 6, 1998

KYEIS ID #: 101-2120-0035
AFS Plant ID #: 21-125-00035
SIC Code: 2771

Region: Appalachian
County: Laurel

Issuance Date: July 29, 1999
Expiration Date: July 29, 2004

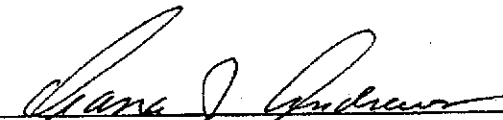

John E. Hornback, Director
Division for Air Quality

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AFFECTED EMISSION POINT
SECTION B
30 (B1.1) F&K FLEXO PRESS

AMERICAN GREETINGS CORPORATION
SOURCE-SPECIFIC SIP REVISION
1999

TITLE V OPERATING PERMIT
I.D.# 101-2120-0035

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (continued)

- 30 (B1.1) F & K Flexo Press
31 (B1.2) six-color flexographic press with topcoat applicator
installed June 1994
32 (B1.3) Three natural gas-fired ovens
totalling 2.3 mmBTU/hr for the entire press

Monthly record keeping shall be performed at this emission point

APPLICABLE REGULATIONS: Regulation 401 KAR 59:212, New graphic arts facilities using rotogravure and flexography applies to this printing press. However, it should be noted that Section 3 of the regulation is not applicable to this printing operation as the company has chosen to comply with an exemption as listed in Section 6 of the regulation.

Regulation 401 KAR 63:060, List of hazardous air pollutants, petitions process, lesser quantity designations, and source category list also apply to these presses. There are not any requirements associated with this regulation at this affected facility at this time.

This press is not subject to the federal MACT standard, 40 CFR 63, Subpart KK, National Emission Standards for the Printing and Publishing Industry as the company is committing to meet the criteria discussed in 40 CFR 63:820 in establishing itself as an area source. See the record keeping requirements listed below. The state has adopted the federal regulation by reference under state regulation 401 KAR 63:820.

1. **Operating Limitations:** The limits listed here preclude the company from the applicability of regulation 401 KAR 51:017, Prevention of significant deterioration of air quality.
 1. Waterbase inks usage rate shall not exceed 300 pounds/hour.
 2. The inks and coatings shall not exceed 10% VOC content.
 3. Topcoat lacquer coating usage rate shall not exceed 200 pounds/hour.
 4. The VOC emissions from this press shall not exceed 39.31 tons/year.
 5. The hours of operation shall not exceed 6,585 hours per year.
 - a. In order to be exempt from Section 3, Control provisions, of regulation 59:212, the company has chosen to comply with paragraph (1) of Section 6 of the regulation (Use of water-borne ink whose volatile portion consists of seventy-five (75) volume percent water and twenty-five (25) volume percent organic solvent (or a lower VOC content) in all printing units).

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (continued)**Compliance Demonstration Method:**

If deemed necessary, the Cabinet shall obtain samples of the inks used at this affected facility to verify that the inks meet these requirements. The calculation performed to show compliance with the hourly usage rate limitations listed above shall be the total material usage per month divided by the machine run hours per month.

Records of ink composition may also be used (this method shall not be used to replace sampling). All inks used by the permittee can demonstrate content through the use of MSDS information. If MSDS claims hazardous components are a trade secret, then some other form of documentation will be needed to demonstrate content.

2. **Emission Limitations:** None
3. **Testing Requirements:** None
4. **Specific Monitoring Requirements:**
The hours of operation on the press shall be monitored with an hour meter for each month.
5. **Specific Record Keeping Requirements:**
Daily record keeping required by State Regulation 401 KAR 59:212, Section 4(6), may be changed to monthly upon EPA's approval of the SIP revision request. These records shall include, but not be limited to, the following:
 - (a) Applicable regulation number;
 - (b) Application method and substrate type;
 - (c) Amount and type of graphic arts material or solvent used at each point of application, including exempt compounds;
 - (d) The VOC content as applied in each graphic arts material or solvent;
 - (e) The date for each application for graphic arts material or solvent; and
 - (f) The amount of surface preparation, clean-up, or wash-up solvent (including exempt compounds) used and the VOC content of each;

For the operation of this press the permittee shall keep records of the pounds of each ink and topcoat lacquer used and corresponding VOC contents and hours of operation. At the end of each month VOC emissions shall be calculated and the emission totals shall be summarized and recorded in tons per month and tons per 12 months. Tons per 12 months shall represent a 12 month rolling total. A summary shall be prepared each month showing the pounds per hour, pounds per month and pounds per 12 months of ink and topcoat lacquer used. These records, as well as purchase orders and invoices for the inks shall be made available for inspection upon request by any duly authorized representative of the Division for Air Quality.

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (continued)

In order to maintain the company as an area source with regards to the HAP's record keeping shall be performed in accordance with 40 CFR 63.829 (d). This requires a monthly accounting of the mass of the HAPs used and the mass fraction of HAPs in each HAP-containing material.

6. **Specific Reporting Requirements:** See Section F-7.
Reports containing the summary records discussed above under Specific Record Keeping Requirements shall be filed within 30 days following the end of each calendar quarter.
7. **Specific Control Equipment Operating Conditions:** None
8. **Alternate Operating Scenarios:** None

AFFECTED EMISSION POINT
SECTION B
33 (B2.1) SERV-O-TEC FLEXO PRESSES (2)

AMERICAN GREETINGS CORPORATION
SOURCE-SPECIFIC SIP REVISION
1999

TITLE V OPERATING PERMIT
I.D.# 101-2120-0035

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (continued)

- 33 (B2.1) Serv-o-tec Flexo Presses (2)
34 (B2.2) six-color flexographic presses each with topcoat applicator presses installed July 1994 and June 1997 with two infrared dryers

Monthly record keeping shall be performed at this emission point

APPLICABLE REGULATIONS: Regulation 401 KAR 59:212, New graphic arts facilities using rotogravure and flexography applies to these printing presses. However, it should be noted that Section 3 of the regulation is not applicable to the flexographic and rotogravure printing operations as the company has chosen to comply with an exemption as listed in Section 6 of the regulation.

Regulation 401 KAR 63:060, List of hazardous air pollutants, petitions process, lesser quantity designations, and source category list also apply to these presses. There are not any requirements associated with this regulation at this affected facility at this time.

Regulation 401 KAR 63:022 (state-origin requirement), New or modified sources emitting toxic air pollutants, applies to the toxic air pollutants being emitted from these two presses. An hourly allowable for the ammonia has been calculated and listed below limiting the emissions of ammonia.

These presses are not subject to the federal MACT standard, 40 CFR 63 Subpart KK, National Emission Standards for the Printing and Publishing Industry as the company is committing to meet the criteria discussed in 40 CFR 63:820 in establishing itself as an area source. See the record keeping requirements listed below. The state has adopted the federal regulation by reference under state regulation 401 KAR 63:820.

1. **Operating Limitations:** The limits listed here preclude the company from the applicability of regulation 401 KAR 51:017, Prevention of significant deterioration of air quality.
 1. The printing ink usage shall not exceed 250 pounds/hour for each press.
 2. The hours of operation shall not exceed 6,559 hours/year for each press.
 3. The inks and coatings shall not exceed 10% VOC content.
 4. The VOC emissions from this point shall not exceed 34.9 tons/year for each press.
 - a. In order to be exempt from Section 3, Control provisions, of regulation 59:212, the company has chosen to comply with paragraph (1) of Section 6 of the regulation (Use of water-borne ink whose volatile portion consists of seventy-five (75) volume percent water and twenty-five (25) volume percent organic solvent (or a lower VOC content) in all printing units).

Compliance Demonstration Method:

If deemed necessary, the Cabinet shall obtain samples of the inks used at an affected facility to verify that the inks meet these requirements. The calculation performed to show compliance with the hourly usage rate limitations listed above shall be the total material usage

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (continued)

rate per month divided by the machine run hours per month.

Records of ink composition may also be used (this method shall not be used to replace sampling). All inks used by the permittee can demonstrate content through the use of MSDS information. If MSDS claims hazardous components are a trade secret, then some other form of documentation will be needed to demonstrate content.

2. **Emission Limitations:**

Emissions of ammonia shall not exceed 3.81 pounds/hour for each press (state-origin requirement).

3. **Testing Requirements:** None

4. **Specific Monitoring Requirements:**

The hours of operation on the press shall be monitored with an hour meter for each month.

5. **Specific Record Keeping Requirements:**

Daily record keeping required by State Regulation 401 KAR 59:212, Section 4(6), may be changed to monthly upon EPA's approval of the SIP revision request. These records shall include, but not be limited to, the following:

- (a) Applicable regulation number;
- (b) Application method and substrate type;
- (c) Amount and type of graphic arts material or solvent used at each point of application, including exempt compounds;
- (d) The VOC content as applied in each graphic arts material or solvent;
- (e) The date for each application for graphic arts material or solvent; and
- (f) The amount of surface preparation, clean-up, or wash-up solvent (including exempt compounds) used and the VOC content of each;

For the operation of this press the permittee shall keep records of the pounds of each ink used and corresponding VOC contents and hours of operation. At the end of each month VOC emissions shall be calculated and the emission totals shall be summarized and recorded in tons per month and tons per 12 months. Tons per 12 months shall represent a 12 month rolling total. A summary shall be prepared each month showing the pounds per hour, pounds per month and pounds per 12 months of ink used. These records, as well as purchase orders and invoices for the inks shall be made available for inspection upon request by any duly authorized representative of the Division for Air Quality.

In order to maintain the company as an area source with regards to the HAP's record keeping shall be performed in accordance with 40 CFR 63.829 (d). This requires a monthly accounting of the mass of the HAPs used and the mass fraction of HAPs in each HAP-containing material.

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (continued)

6. **Specific Reporting Requirements:** See Section F-7.
Reports containing the summary records discussed above under Specific Record Keeping Requirements shall be filed within 30 days following the end of each calendar quarter.
7. **Specific Control Equipment Operating Conditions:** None
8. **Alternate Operating Scenarios:** None

AFFECTED EMISSION POINT
SECTION B
35 (B3.1) MARK ANDY FLEXO PRESS

AMERICAN GREETINGS CORPORATION
SOURCE-SPECIFIC SIP REVISION
1999

TITLE V OPERATING PERMIT
I.D.# 101-2120-0035

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (continued)

35 (B3.1) Mark Andy Flexo Press
six-color flexographic label press
installed August 1983
with electric oven

APPLICABLE REGULATIONS: Regulation 401 KAR 59:212, New graphic arts facilities using rotogravure and flexography applies to these printing presses. However, it should be noted that Section 3 of the regulation is not applicable to the flexographic and rotogravure printing operations as the company has chosen to comply with an exemption as listed in Section 6 of the regulation.

Regulation 401 KAR 63:060, List of hazardous air pollutants, petitions process, lesser quantity designations, and source category list also apply to these presses. There are not any requirements associated with this regulation at this affected facility at this time.

1. **Operating Limitations:**

a. In order to be exempt from Section 3, Control provisions, of regulation 59:212, the company has chosen to comply with paragraph (1) of Section 6 of the regulation (Use of water-borne ink whose volatile portion consists of seventy-five (75) volume percent water and twenty-five (25) volume percent organic solvent (or a lower VOC content) in all printing units).

2. **Emission Limitations:** None

3. **Testing Requirements:** None

4. **Specific Monitoring Requirements:** None

5. **Specific Record Keeping Requirements:**

Daily record keeping required by State Regulation 401 KAR 59:212, Section 4(6), may be changed to monthly upon EPA's approval of the SIP revision request. These records shall include, but not be limited to, the following:

- (a) Applicable regulation number;
- (b) Application method and substrate type;
- (c) Amount and type of graphic arts material or solvent used at each point of application, including exempt compounds;
- (d) The VOC content as applied in each graphic arts material or solvent;
- (e) The date for each application for graphic arts material or solvent; and
- (f) The amount of surface preparation, clean-up, or wash-up solvent (including exempt compounds) used and the VOC content of each;

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (continued)

6. **Specific Reporting Requirements:** See Section F-7
7. **Specific Control Equipment Operating Conditions:** None
8. **Alternate Operating Scenarios:** None

AFFECTED EMISSION POINT
SECTION B
36 (B4.1) KIDDER FLEXO PRESS
(KIDDER STACY CENTRAFLEX 672)

AMERICAN GREETINGS CORPORATION
SOURCE-SPECIFIC SIP REVISION
1999

TITLE V OPERATING PERMIT
I.D.# 101-2120-0035

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (continued)

36 (B4.1) Kidder Flexo Press (Kidder Stacy Centraflex 672)
six-color flexographic printing press
one natural gas-fired drying oven
1.6 mmBTU/hr heat input
press installed December 1978

Monthly record keeping shall be performed at this emission point

APPLICABLE REGULATIONS: Regulation 401 KAR 59:212, New graphic arts facilities using rotogravure and flexography applies to these printing presses. However, it should be noted that Section 3 of the regulation is not applicable to the flexographic and rotogravure printing operations as the company has chosen to comply with an exemption as listed in Section 6 of the regulation.

Regulation 401 KAR 63:060, List of hazardous air pollutants, petitions process, lesser quantity designations, and source category list also apply to these presses. There are not any requirements associated with this regulation at this affected facility at this time.

Regulation 401 KAR 63:022 (state-origin requirement), New or modified sources emitting toxic air pollutants, applies to the toxic air pollutants being emitted from these two presses. An hourly allowable for the ammonia has been calculated and listed below limiting the emissions of ammonia.

This press is not subject to the federal MACT standard, Subpart KK, National Emission Standards for the Printing and Publishing Industry as the company is committing to meet the criteria discussed in 40 CFR 63:820 in establishing itself as an area source. See the record keeping requirements listed below. The state has adopted the federal regulation by reference under state regulation 401 KAR 63:820.

1. Operating Limitations:

1. Ammonia content of the ink shall not exceed 4% by weight.

a. In order to be exempt from Section 3, Control provisions, of regulation 59:212, the company has chosen to comply with paragraph (1) of Section 6 of the regulation (Use of water-borne ink whose volatile portion consists of seventy-five (75) volume percent water and twenty-five (25) volume percent organic solvent (or a lower VOC content) in all printing units).

2. Emission Limitations:

Emissions of ammonia shall not exceed 25.2 pounds/hour (state-origin requirement).

Compliance Demonstration Method:

If deemed necessary, the Cabinet shall obtain samples of the inks used at this affected facility to verify that the ammonia content of the ink meets these requirements. The calculation performed to demonstrate compliance with the hourly allowable emission rate limitations listed above for ammonia shall be the total material usage rate per month divided by the machine run hours per month multiplied by the percentage of ammonia content in the ink.

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (continued)

That calculated value shall not exceed 25.2 pounds per hour.

3. **Testing Requirements:** None
 4. **Specific Monitoring Requirements:**
The machine run hours shall be monitored in order to determine compliance with the ammonia hourly allowable.
 5. **Specific Record Keeping Requirements:**
Daily record keeping required by State Regulation 401 KAR 59:212, Section 4(6), may be changed to monthly upon EPA's approval of the SIP revision request. These records shall include, but not be limited to, the following:
 - (a) Applicable regulation number;
 - (b) Application method and substrate type;
 - (c) Amount and type of graphic arts material or solvent used at each point of application, including exempt compounds;
 - (d) The VOC content as applied in each graphic arts material or solvent;
 - (e) The date for each application for graphic arts material or solvent; and
 - (f) The amount of surface preparation, clean-up, or wash-up solvent (including exempt compounds) used and the VOC content of each;
 6. **Specific Reporting Requirements:** See Section F-7.
 7. **Specific Control Equipment Operating Conditions:** None
 8. **Alternate Operating Scenarios:** None
- In order to maintain the company as an area source with regards to the HAP's record keeping shall be performed in accordance with 40 CFR 63.829 (d). This requires a monthly accounting of the mass of the HAPs used and the mass fraction of HAPs in each HAP-containing material.

**AFFECTED EMISSION POINT
SECTION B
B5 (B5.1) AQUAFLEX STICKER PRESS**

**AMERICAN GREETINGS CORPORATION
SOURCE-SPECIFIC SIP REVISION
1999**

**TITLE V OPERATING PERMIT
I.D.# 101-2120-0035**

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (continued)

- B5 (B5.1) Aquaflex Sticker Press
seven-color flexographic printing press
(Printing stations 1-5 are lithographic and are not subject to regulation)
(Printing stations 6 and 7 are flexographic and are subject to 59:212)
and electric oven
installed September 1995

Monthly record keeping shall be performed at this emission point

APPLICABLE REGULATIONS: Regulation 401 KAR 59:212, New graphic arts facilities using rotogravure and flexography applies to these printing presses. However, it should be noted that Section 3 of the regulation is not applicable to the flexographic and rotogravure printing operations as the company has chosen to comply with an exemption as listed in Section 6 of the regulation.

Regulation 401 KAR 63:060, List of hazardous air pollutants, petitions process, lesser quantity designations, and source category list also apply to these presses. There are not any requirements associated with this regulation at this affected facility at this time.

1. **Operating Limitations:**

1. The hours of operation shall not exceed 5,949 hours/year for this press.
2. The VOC emissions from this point shall not exceed 16.4 tons/year for each press.

a. In order to be exempt from Section 3, Control provisions, of regulation 59:212, the company has chosen to comply with paragraph (1) of Section 6 of the regulation (Use of water-borne ink whose volatile portion consists of seventy-five (75) volume percent water and twenty-five (25) volume percent organic solvent (or a lower VOC content) in all printing units).

2. **Emission Limitations:** None

3. **Testing Requirements:** None

4. **Specific Monitoring Requirements:** None

5. **Specific Record Keeping Requirements:**

Daily record keeping required by State Regulation 401 KAR 59:212, Section 4(6), may be changed to monthly upon EPA's approval of the SIP revision request. These records shall include, but not be limited to, the following:

- (a) Applicable regulation number;
- (b) Application method and substrate type;
- (c) Amount and type of graphic arts material or solvent used at each point of application, including exempt compounds;
- (d) The VOC content as applied in each graphic arts material or solvent;

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (continued)

- (e) The date for each application for graphic arts material or solvent; and
 - (f) The amount of surface preparation, clean-up, or wash-up solvent (including exempt compounds) used and the VOC content of each;
6. **Specific Reporting Requirements:** See Section F-7.
 7. **Specific Control Equipment Operating Conditions:** None
 8. **Alternate Operating Scenarios:** None

AFFECTED EMISSION POINT
SECTION B
50 (C1.1) KOMORI LITHO PRESSES (2)

AMERICAN GREETINGS CORPORATION
SOURCE-SPECIFIC SIP REVISION
1999

TITLE V OPERATING PERMIT
I.D.# 101-2120-0035

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (continued)

| | |
|-----------|--|
| 50 (C1.1) | Komori Litho Presses (2) |
| 51 (C1.2) | with flexographic stations (2) |
| 52 (C1.3) | with electric ovens (2) |
| 53 (C1.4) | presses installed May 1996 and December 1997 |
| 54 (C1.5) | Starch Powder Collection |

Monthly record keeping shall be performed at this emission point

APPLICABLE REGULATIONS: Regulation 401 KAR 59:212, New graphic arts facilities using rotogravure and flexography applies to these printing presses. However, it should be noted that Section 3 of the regulation is not applicable to the flexographic and rotogravure printing operations as the company has chosen to comply with an exemption as listed in Section 6 of the regulation.

Regulation 401 KAR 63:060, List of hazardous air pollutants, petitions process, lesser quantity designations, and source category list also apply to these presses. There are not any requirements associated with this regulation at this affected facility at this time.

Regulation 401 KAR 59:010, New process operations, applies to the PM emissions from the starch collection systems at emission points C1, C2 and C3.

These presses are not subject to the federal MACT standard, Subpart KK, National Emission Standards for the Printing and Publishing Industry as the company is committing to meet the criteria discussed in 40 CFR 63:820 in establishing itself as an area source. See the record keeping requirements listed below. The state has adopted the federal regulation by reference under state regulation 401 KAR 63:820.

1. **Operating Limitations:** The limits listed here preclude the company from the applicability of regulation 401 KAR 51:017, Prevention of significant deterioration of air quality.

1. Maximum litho ink usage rates shall not exceed 32.5 pounds/hour/station.
2. Maximum UV coating usage rates shall not exceed 52 pounds/hour/station.
3. Maximum waterbase specialized ink usage rates shall not exceed 35 pounds/hour/station.
4. The waterbase inks and coatings shall not exceed 10% VOC content.
5. The VOC emissions from this point shall not exceed 28.49 tons/year for each press.
6. The hours of operation shall not exceed 6,459 hours per year for each press.

a. In order to be exempt from Section 3, Control provisions, of regulation 59:212, the company has chosen to comply with paragraph (1) of Section 6 of the regulation (Use of water-borne ink whose volatile portion consists of seventy-five (75) volume percent water and twenty-five (25) volume percent organic solvent (or a lower VOC content) in all printing units).

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (continued)**Compliance Demonstration Method:**

If deemed necessary, the Cabinet shall obtain samples of the inks used at an affected facility to verify that the inks meet these requirements. Compliance with the usage rate limitations shall be demonstrated monthly by dividing the total pounds of individual material used by the product of the total press run hours and the number of stations on each press. Records of ink composition may also be used (this method shall not be used to replace sampling). All inks used by the permittee can demonstrate content through the use of MSDS information. If MSDS claims hazardous components are a trade secret, then some other form of documentation will be needed to demonstrate content.

2. Emission Limitations: Regulation 401 KAR 59:010, Section 3

1. Particulate emissions shall not exceed 2.34 pounds/hour as required by this regulation.
2. Visible emissions shall not equal or exceed 20% opacity.
3. VOC emissions shall not equal or exceed 40 tons during any 12 consecutive month period.

3. Testing Requirements: None**4. Specific Monitoring Requirements:**

The hours of operation on the press shall be monitored with an hour meter for each month.

5. Specific Record Keeping Requirements:

Daily record keeping required by State Regulation 401 KAR 59:212, Section 4(6), may be changed to monthly upon EPA's approval of the SIP revision request. These records shall include, but not be limited to, the following:

- (a) Applicable regulation number;
- (b) Application method and substrate type;
- (c) Amount and type of graphic arts material or solvent used at each point of application, including exempt compounds;
- (d) The VOC content as applied in each graphic arts material or solvent;
- (e) The date for each application for graphic arts material or solvent; and
- (f) The amount of surface preparation, clean-up, or wash-up solvent (including exempt compounds) used and the VOC content of each;

For the operation of this press the permittee shall keep records of the pounds of each type of ink, coating, wash, and thinning agent used and corresponding VOC contents and hours of operation. At the end of each month VOC emissions shall be calculated and the emission totals shall be summarized and recorded in tons per month and tons per 12 months. Tons per 12 months shall represent a 12 month rolling total. A summary shall be prepared each month showing the pounds per hour, pounds per month and pounds per 12 months of the aforementioned materials used. These records, as well as purchase orders and invoices

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (continued)

In order to maintain the company as an area source with regards to the HAP's record keeping shall be performed in accordance with 40 CFR 63.829 (d). This requires a monthly accounting of the mass of the HAPs used and the mass fraction of HAPs in each HAP-containing material.

6. Specific Reporting Requirements: See Section F-7.
Reports containing the summary records discussed above under Specific Record Keeping Requirements shall be filed within 30 days following the end of each calendar quarter.
7. Specific Control Equipment Operating Conditions: None
8. Alternate Operating Scenarios: None

AFFECTED EMISSION POINT
SECTION B
54 (C2.1) KOMORI LITHO PRESSES (3)

AMERICAN GREETINGS CORPORATION
SOURCE-SPECIFIC SIP REVISION
1999

TITLE V OPERATING PERMIT
I.D.# 101-2120-0035

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (continued)

- 54 (C2.1) Komori Litho Presses (3)
(C2.2) with flexographic stations (3)
(C2.3) with electric ovens (3)
air makeup unit
presses installed November 1991, April 1994, July 1994
(C2.4) Starch Powder Collection

Monthly record keeping shall be performed at this emission point

APPLICABLE REGULATIONS: Regulation 401 KAR 59:212, New graphic arts facilities using rotogravure and flexography applies to these printing presses. However, it should be noted that Section 3 of the regulation is not applicable to the flexographic and rotogravure printing operations as the company has chosen to comply with an exemption as listed in Section 6 of the regulation.

Regulation 401 KAR 63:060, List of hazardous air pollutants, petitions process, lesser quantity designations, and source category list also apply to these presses. There are not any requirements associated with this regulation at this affected facility at this time.

Regulation 401 KAR 59:010, New process operations, applies to the PM emissions from the starch collection systems at emission points C1, C2 and C3.

These presses are not subject to the federal MACT standard, Subpart KK, National Emission Standards for the Printing and Publishing Industry as the company is committing to meet the criteria discussed in 40 CFR 63:820 in establishing itself as an area source. See the record keeping requirements listed below. The state has adopted the federal regulation by reference under state regulation 401 KAR 63:820.

1. **Operating Limitations:**
 - a. In order to be exempt from Section 3, Control provisions, of regulation 59:212, the company has chosen to comply with paragraph (1) of Section 6 of the regulation (Use of water-borne ink whose volatile portion consists of seventy-five (75) volume percent water and twenty-five (25) volume percent organic solvent (or a lower VOC content) in all printing units).
2. **Emission Limitations:** Regulation 401 KAR 59:010, Section 3.
 1. Particulate emissions shall not exceed 2.34 pounds/hour as required by this regulation.
 2. Visible emissions shall not equal or exceed 20% opacity.
3. **Testing Requirements:** None
4. **Specific Monitoring Requirements:** None
5. **Specific Record Keeping Requirements:**
Daily record keeping required by State Regulation 401 KAR 59:212, Section 4(6), may be changed to monthly upon EPA's approval of the SIP revision request.

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (continued)

These records shall include, but not be limited to, the following:

- (a) Applicable regulation number;
- (b) Application method and substrate type;
- (c) Amount and type of graphic arts material or solvent used at each point of application, including exempt compounds;
- (d) The VOC content as applied in each graphic arts material or solvent;
- (e) The date for each application for graphic arts material or solvent; and
- (f) The amount of surface preparation, clean-up, or wash-up solvent (including exempt compounds) used and the VOC content of each;

In order to maintain the company as an area source with regards to the HAP's record keeping shall be performed in accordance with 40 CFR 63.829 (d). This requires a monthly accounting of the mass of the HAPs used and the mass fraction of HAPs in each HAP-containing material.

6. **Specific Reporting Requirements:** See Section F-7.
7. **Specific Control Equipment Operating Conditions:** None
8. **Alternate Operating Scenarios:** None

AFFECTED EMISSION POINT
SECTION B
54 (C3.1) NEBIOLO LITHO PRESSES (2)

AMERICAN GREETINGS CORPORATION
SOURCE-SPECIFIC SIP REVISION
1999

TITLE V OPERATING PERMIT
I.D.# 101-2120-0035

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (continued)

- 54 (C3.1) Nebiolo Litho Presses (2)
(C3.3) with flexographic stations (2)
with electric ovens (2)
air makeup unit
presses installed in 1984 and 1985
(C3.2, C3.4) Starch Powder Collection

APPLICABLE REGULATIONS: Regulation 401 KAR 59:212, New graphic arts facilities using rotogravure and flexography applies to these printing presses. However, it should be noted that Section 3 of the regulation is not applicable to the flexographic and rotogravure printing operations as the company has chosen to comply with an exemption as listed in Section 6 of the regulation.

Regulation 401 KAR 63:060, List of hazardous air pollutants, petitions process, lesser quantity designations, and source category list also apply to these presses. There are not any requirements associated with this regulation at this affected facility at this time.

Regulation 401 KAR 59:010, New process operations, applies to the PM emissions from the starch collection systems at emission points C1, C2 and C3.

1. **Operating Limitations:**

a. In order to be exempt from Section 3, Control provisions, of regulation 59:212, the company has chosen to comply with paragraph (1) of Section 6 of the regulation (Use of water-borne ink whose volatile portion consists of seventy-five (75) volume percent water and twenty-five (25) volume percent organic solvent (or a lower VOC content) in all printing units).

2. **Emission Limitations:** Regulation 401 KAR 59:010, Section 3.

1. Particulate emissions shall not exceed 2.34 pounds/hour as required by this regulation.
2. Visible emissions shall not equal or exceed 20% opacity.

3. **Testing Requirements:** None

4. **Specific Monitoring Requirements:** None

5. **Specific Record Keeping Requirements:**

Daily record keeping required by State Regulation 401 KAR 59:212, Section 4(6), may be changed to monthly upon EPA's approval of the SIP revision request. These records shall include, but not be limited to, the following:

- (a) Applicable regulation number;
- (b) Application method and substrate type;
- (c) Amount and type of graphic arts material or solvent used at each point of application, including exempt compounds;

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (continued)

- (d) The VOC content as applied in each graphic arts material or solvent;
 - (e) The date for each application for graphic arts material or solvent; and
 - (f) The amount of surface preparation, clean-up, or wash-up solvent (including exempt compounds) used and the VOC content of each;
6. Specific Reporting Requirements: See Section F-7.
 7. Specific Control Equipment Operating Conditions: None
 8. Alternate Operating Scenarios: None

SECTION F
MONITORING, RECORD KEEPING, AND REPORTING
REQUIREMENTS

AMERICAN GREETINGS CORPORATION
SOURCE-SPECIFIC SIP REVISION
1999

TITLE V OPERATING PERMIT
I.D.# 101-2120-0035

SECTION F - MONITORING, RECORD KEEPING, AND REPORTING REQUIREMENTS

1. When continuing compliance is demonstrated by periodic testing or instrumental monitoring, the permittee shall compile records of required monitoring information that include:
 - a) Date, place as defined in this permit, and time of sampling or measurements.
 - b) Analyses performance dates;
 - c) Company or entity that performed analyses;
 - d) Analytical techniques or methods used;
 - e) Analyses results; and
 - f) Operating conditions during time of sampling or measurement;

2. Records of all required monitoring data and support information, including calibrations, maintenance records, and original strip chart recordings, and copies of all reports required by the Division for Air Quality, shall be retained by the permittee for a period of five years and shall be made available for inspection upon request by any duly authorized representative of the Division for Air Quality.

3. In accordance with the requirements of Regulation 401 KAR 50:035, Permits Section 7(2)(c) the permittee shall allow the Cabinet or authorized representatives to perform the following:
 - a) Enter upon the premises where a source is located or emissions-related activity is conducted, or where records are kept;
 - b) Have access to and copy, at reasonable times, any records required by the permit:
 - i) During normal office hours, and
 - ii) During periods of emergency when prompt access to records is essential to proper assessment by the Cabinet;
 - c) Inspect, at reasonable times, any facilities, equipment (including monitoring and pollution control equipment), practices, or operations required by the permit. Reasonable times shall include, but are not limited to the following:
 - i) During all hours of operation at the source,
 - ii) For all sources operated intermittently, during all hours of operation at the source and the hours between 8:00 a.m. and 4:30 p.m., Monday through Friday, excluding holidays, and
 - iii) During an emergency; and
 - d) Sample or monitor, at reasonable times, substances or parameters to assure compliance with the permit or any applicable requirements. Reasonable times shall include, but are not limited to the following:
 - i) During all hours of operation at the source,
 - ii) For all sources operated intermittently, during all hours of operation at the source and the hours between 8:00 a.m. and 4:30 p.m., Monday through Friday, excluding holidays, and
 - iii) During an emergency.

SECTION F - MONITORING, RECORD KEEPING, AND REPORTING REQUIREMENTS (continued)

4. No person shall obstruct, hamper, or interfere with any Cabinet employee or authorized representative while in the process of carrying out official duties. Refusal of entry or access may constitute grounds for permit revocation and assessment of civil penalties.
5. Reports of any monitoring required by this permit shall be reported to the Division's London Regional Office no later than the six month anniversary date of this permit and every six months thereafter during the life of this permit, unless otherwise specifically stated in this permit. All reports shall be certified by a responsible official pursuant to Section 6(1) of Regulation 401 KAR 50:035, Permits. All deviations from permit requirements shall be clearly identified in the reports.
6.
 - a. In accordance with the provisions of Regulation 401 KAR 50:055, Section 1, the owner or operator shall notify the Division for Air Quality's London Regional Office concerning startups, shutdowns, or malfunctions as follows:
 1. When emissions during any planned shutdowns and ensuing startups will exceed the standards notification shall be made no later than three (3) days before the planned shutdown, or immediately following the decision to shut down, if the shutdown is due to events which could not have been foreseen three (3) days before the shutdown.
 2. When emissions due to malfunctions, unplanned shutdowns and ensuing startups are or may be in excess of the standards notification shall be made as promptly as possible by telephone (or other electronic media) and shall cause written notice upon request.
 - b. In accordance with the provisions of Regulation 401 KAR 50:035, Section 7(1)(e)2, the owner or operator shall report deviations from permit requirements including those attributed to upset conditions (other than emission exceedances covered by general condition 6 a. above) to the Division for Air Quality's London Regional Office with the required quarterly reports (emission points 30, 33 and 50). Pertaining to deviations for which a reporting frequency is not elsewhere specified in this permit the semi-annual reports according to general condition No. 5 listed above will suffice during the life of this permit.
7. Pursuant to Regulation 401 KAR 50:035, Permits, Section 7(2)(b), the permittee shall certify compliance with the terms and conditions contained in this permit, annually on the permit issuance anniversary date by completing and returning a Compliance Certification Form (DEP 7007CC) or an approved alternative to the Division for Air Quality's London Regional Office and the U.S. EPA in accordance with the following requirements:
 - a) Identification of each term or condition of the permit that is the basis of the certification;
 - b) The compliance status regarding each term or condition of the permit;
 - c) Whether compliance was continuous or intermittent; and
 - d) The method used for determining the compliance status for the source, currently and over the reporting period, pursuant to 401 KAR 50:035, Section 7(1)(c), (d), and (e).
 - e) Other facts the Division may require to determine the compliance status of the source; and
 - f) The certification shall be postmarked by the thirtieth (30) day following the applicable permit issuance anniversary date.

SECTION F - MONITORING, RECORD KEEPING, AND REPORTING REQUIREMENTS (continued)

Annual compliance certifications should be mailed to the following addresses:

Division for Air Quality
London Regional Office
85 State Police Road
Reg. St. Office Bldg.
London, Kentucky 40741-9008

U.S. EPA Region IV
Air Enforcement Branch
Atlanta Federal Center
61 Forsyth St.
Atlanta, Georgia 30303-8960

Division for Air Quality
Central Files
803 Schenkel Lane
Frankfort, Kentucky 40601

8. In accordance with Regulation 401 KAR 50:035, Section 23, the permittee shall provide the division with all information necessary to determine its subject emissions within thirty (30) days of the date the KYEIS emission report is mailed to the permittee.
9. Pursuant to Section VII.3 of the policy manual of the Division for Air Quality as referenced by Regulation 401 KAR 50:016, Section 1(1), results of any performance test shall be submitted to the Division by the source or its representative within forty-five days after the completion of the fieldwork.

JAMES E. BICKFORD
SECRETARY



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APP
PAUL E. PATTON
GOVERNOR

COMMONWEALTH OF KENTUCKY
NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET
OFFICE OF THE SECRETARY
FRANKFORT, KENTUCKY 40601
TELEPHONE: (502) 564-3350

October 7, 2001

Mr. Stanley Meiburg
Acting Regional Administrator
U.S. EPA, Region 4
Atlanta Federal Center
61 Forsyth Street, S.W.
Atlanta, Georgia 30303-8960

Dear Mr. Meiburg:

The Kentucky Natural Resources and Environmental Protection Cabinet hereby submits to the U.S. Environmental Protection Agency (EPA) a formal source specific SIP revision that addresses a Non-CTG VOC Reasonably Available Control Technology (RACT) determination for the Marathon Ashland Petroleum Marine Repair Terminal (ID# 21-019-00016).

The marine repair terminal has already complied with the Division for Air Quality's Non-CTG VOC RACT requirement under 401 KAR 50:012, by installing, this summer, vapor collection and control equipment for its barge cleaning operation with an overall efficiency of 90 percent. The control of the VOC emissions from the source's barge cleaning operation is significant, since based on 2000 emissions data the barge cleaning operation represents an estimated 87 percent of the source's total VOC emissions. In addition, the overall control efficiency required at the source is consistent with controls at similar operations in the country (i.e., Louisiana and Texas). Therefore, the Cabinet requests that EPA approve this source specific SIP revision for the Marathon Ashland Petroleum Marine Repair Terminal. Five copies of this revision with relevant information are enclosed.

The Division for Air Quality solicited comments and afforded the opportunity for a public hearing regarding the source's draft Title V permit which included the Non-CTG VOC RACT requirement. A notice was published in an Ashland newspaper on August 11, 1999. No one requested a public hearing on the matter; however, the company submitted comments. Response to comment information and a copy of the public notice as published in the newspaper are enclosed.

Your prompt consideration of this request is appreciated. If you have any questions or comments concerning this matter, please contact Lona Brewer at the Division for Air Quality at (502) 573-3382.

Sincerely,

James E. Bickford
James E. Bickford
Secretary

JEB:mrl
Enclosures
cc: Kay Prince



*Mike APP
sem*



JAMES E. BICKFORD
SECRETARY

PAUL E. PATTON
GOVERNOR

COMMONWEALTH OF KENTUCKY
NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET
OFFICE OF THE SECRETARY
FRANKFORT, KENTUCKY 40601
TELEPHONE: (502) 564-3350

July 3, 2001

Mr. Stanley Meiburg
Acting Regional Administrator
U.S. EPA, Region 4
Atlanta Federal Center
61 Forsyth Street, S.W.
Atlanta, Georgia 30303-8960

Dear Mr. Meiburg:

The Kentucky Natural Resources and Environmental Protection Cabinet hereby submits to the U.S. Environmental Protection Agency (EPA) the final source specific SIP revision that addresses a Non-CTG VOC Reasonably Available Control Technology (RACT) determination for the Publishers Printing Company (ID# 21-029-00019). The Cabinet requests that EPA approve this SIP revision. Publishers Printing is a major source of VOC located in the moderate ozone nonattainment portion of Bullitt County. Five copies of the Publishers Printing Non-CTG VOC RACT determination with relevant information are enclosed.

A public hearing on the RACT determination for Publishers Printing was conducted on May 23, 2001. Response to comment information and a copy of the public notice as published in the newspaper are enclosed.

Your prompt consideration of this request is appreciated. If you have any questions or comments concerning this matter, please contact Lona Brewer at the Division for Air Quality at (502) 573-3382.

Sincerely,


James E. Bickford
Secretary

JEB:mrl
Enclosures
cc: Kay Prince

Commonwealth of Kentucky
Natural Resources and Environmental Protection Cabinet
Department for Environmental Protection
Division for Air Quality
803 Schenkel Lane
Frankfort, Kentucky 40601
(502) 573-3382

AIR QUALITY PERMIT

Permittee Name: Publishers Printing Company
Mailing Address: 100 Frank E. Simon Avenue, Shepherdsville, Kentucky
40165

Source Name: Publishers Printing Company
Mailing Address: 100 Frank E. Simon Avenue, Shepherdsville, Kentucky
40165

Source Location: 100 Frank E. Simon Avenue, Shepherdsville, Kentucky

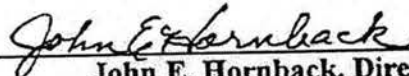
Permit Type: Federally-Enforceable
Review Type: Title V/Synthetic Minor/Non-CTG RACT

Permit Number: V-99-063
Log Number: 50243(F439)
Application Complete Date: June 29, 1998

KYEIS ID #: 104-0440-0019
AFS Plant ID #: 21-029-00019
SIC Code: 2721

Region: North Central
County: Bullitt

Issuance Date: June 26, 2001
Expiration Date: June 26, 2006



John E. Hornback, Director
Division for Air Quality

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SECTION A - PERMIT AUTHORIZATION

Pursuant to a duly submitted application which was determined to be complete on June 29, 1998, the Kentucky Division for Air Quality hereby authorizes the operation of the equipment described herein in accordance with the terms and conditions of this permit. This permit has been issued under the provisions of Kentucky Revised Statutes Chapter 224 and regulations promulgated pursuant thereto.

The permittee shall not construct, reconstruct, or modify any affected facilities without first having submitted a complete application and receiving a permit for the planned activity from the permitting authority, except as provided in this permit or in the Regulation 401 KAR 50:035, Permits.

Issuance of this permit does not relieve the permittee from the responsibility of obtaining any other permits, licenses, or approvals required by this Cabinet or any other federal, state, or local agency.

SECTION B - EMISSION POINTS, EMISSIONS UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS

- 01 (437) Hantscho Mark VI 6 Unit Web Offset Heatset Lithographic Printing Press 437 with a 2.56 MMBTU/hr natural gas fired dryer
Maximum continuous rating: Ink - 30 lbs/hr
Fountain solution - 2.9 lbs/hr
Manual Blanket wash - 0.34 gal/hr
Construction commenced: December, 1983
- 02 (441) HantschoMark II 2 Unit Web Offset Heatset Lithographic Printing Press 441 with a 1.8 MMBTU/hr natural gas fired dryer
Maximum continuous rating: Ink - 20 lbs/hr
Fountain solution - 2.9 lbs/hr
Manual Blanket wash - 0.11 gal/hr
Construction commenced: January, 1978
- 03 (442) Hantscho Mark IV 4 Unit Web Offset Heatset Lithographic Printing Press 442 with a 5.50 MMBTU/hr natural gas fired dryer
Maximum continuous rating: Ink - 50 lbs/hr
Fountain solution - 1.1 lbs/hr
Manual Blanket wash - 0.23 gal/hr
Construction commenced: May, 1995
- 04 (444) Harris M-80 5 Unit Web Offset Heatset Lithographic Printing Press 444 with a 0.96 MMBTU/hr natural gas fired dryer
Maximum continuous rating: Ink - 30 lbs/hr
Fountain solution - 2.9 lbs/hr
Manual Blanket wash - 0.14 gal/hr
Construction commenced: April, 1979
- 05 (446) Hantscho Mark VI 8 Unit Web Offset Heatset Lithographic Printing Press 446 with a 2.2 MMBTU/hr natural gas fired dryer
Maximum continuous rating: Ink - 50 lbs/hr
Fountain solution - 2.9 lbs/hr
Manual Blanket wash - 0.46 gal/hr
Construction commenced: February, 1978
- 06 (448) Hantscho Mark VI 8 Unit Web Offset Heatset Lithographic Printing Press 448 with a 2.2 MMBTU/hr natural gas fired dryer
Maximum continuous rating: Ink - 50 lbs/hr
Fountain solution - 2.9 lbs/hr
Manual Blanket wash - 0.46 gal/hr
Construction commenced: May, 1981

SECTION B - EMISSION POINTS, EMISSIONS UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- 07 (449) Hantscho Mark VI 5 Unit Web Offset Heatset Lithographic Printing Press 449 with a 2.2 MMBTU/hr natural gas fired dryer
Maximum continuous rating: Ink - 30 lbs/hr
Fountain solution - 2.9 lbs/hr
Manual Blanket wash - 0.29 gal/hr
Construction commenced: June, 1982
- 08 (450) Harris M-80 5 Unit Web Offset Heatset Lithographic Printing Press 450 with a 1.925 MMBTU/hr natural gas fired dryer
Maximum continuous rating: Ink - 30 lbs/hr
Fountain solution - 2.9 lbs/hr
Manual Blanket wash - 0.14 gal/hr
Construction commenced: January, 1990
- 09 (470) Hantscho Mark Via 9 Unit Web Offset Heatset Lithographic Printing Press 470 with a 3.3 MMBTU/hr natural gas fired dryer
Maximum continuous rating: Ink - 50 lbs/hr
Fountain solution - 2.9 lbs/hr
Automatic Blanket wash - 0.52 gal/hr
Construction commenced: May, 1987
- 10 (484) Harris M-80 5 Unit Web Offset Heatset Lithographic Printing Press 484 with a 0.96 MMBTU/hr natural gas fired dryer
Maximum continuous rating: Ink - 30 lbs/hr
Fountain solution - 2.9 lbs/hr
Manual Blanket wash - 0.14 gal/hr
Construction commenced: March, 1985

Control Equipment:

One Meg Tec Systems Cleanswitch CS-250-95S regenerative thermal oxidizer controlling 10 presses to be installed as stated in Section I, Compliance Schedule
Claimed VOC (volatile organic compounds) destruction efficiency: 90%

APPLICABLE REGULATIONS:

401 KAR 50:012, General application effective June 24, 1992, requiring implementation of standards for national primary and secondary ambient air quality, specifies that control procedures that are reasonable, available, and practical be used.

1. Operating Limitations:

1. Usage rates and VOC contents of all VOC containing materials shall be restricted so as to meet the limitations in Section B.2.
2. Each press and the control device shall be interlocked at all times during press operation.

SECTION B - EMISSION POINTS, EMISSIONS UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

3. The following are the RACT (Reasonable Available Control Technology) requirements determined under 401 KAR 50:012:
 - 1) a 90% VOC destruction efficiency by the regenerative thermal oxidizer controlling each press' dryer exhaust;
 - 2) fountain solution as applied containing less than 3% by weight alcohol substitutes and containing no alcohol and no other VOC's;
 - 3) blanket wash with a vapor pressure of less than 10 mmHg at 20 degrees C.

4. The following are the procedures for handling the used rags that have been used to wash the blankets on the presses:
 - 1) The used rags are collected in a closed metal container that contains a fake bottom that allows all fluid to drain from the rags in a waiting period of 3 to 4 days.
 - 2) A plug in the bottom of the container is opened to allow drainage and collection of the drained fluid which is picked up and disposed of off site by a waste disposal facility. The used rags are collected, laundered off site by a rag laundering facility, and returned to the company for reuse.

5. Negative pressure shall be maintained at each dryer's exhaust inlet when the corresponding press is in operation.

Compliance Demonstration Method:

1. The 90% VOC destruction efficiency by the regenerative thermal oxidizer will be demonstrated by testing, No. 3 of this section.
2. The fountain solution requirement will be demonstrated through recordkeeping, No.5 of this section.
3. The blanket wash requirement will be demonstrated through recordkeeping, No. 5 of this section.

2. Emission Limitations:

VOC emissions from Press 442 shall not equal or exceed 40 tons/yr based on a 12 month rolling total to preclude applicability of 401 KAR 51:052, Review of new sources in or impacting upon nonattainment areas.

Compliance Demonstration Method:

The following formulas may be used in calculating emissions of VOC's from Press 442:

1. $\text{VOC emitted from ink (tons/month)} = \text{tons of ink used per month} \times 80\% \text{ ink not retained in paper} \times \% \text{VOC content of ink} \times 100\% \text{ VOC capture efficiency} \times (1 - \text{VOC destruction efficiency of the thermal oxidizer})$
2. $\text{VOC emitted from fountain solution(tons/month)} = [\text{tons of fountain solution used per month} \times \% \text{VOC content of fountain solution} \times 70\% \text{ VOC capture efficiency} \times (1 - \text{VOC destruction efficiency of the thermal oxidizer})] + [\text{tons of fountain solution used per month} \times \% \text{VOC content of fountain solution} \times 30\% \text{ VOC not captured}]$
3. $\text{VOC emitted from manual blanket wash cleanup(tons/month)} = \text{gallons of blanket wash used per month} \times 50\% \text{ blanket wash not retained in rags} \times \text{VOC content of blanket wash(lbs/gal)} \times (1\text{ton}/2000\text{lbs})$

SECTION B - EMISSION POINTS, EMISSIONS UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

4. Total VOC's emitted = VOC's emitted from ink + VOC's emitted from fountain solution + VOC's emitted from blanket wash cleanup

3. **Testing Requirements:**

The permittee shall conduct required performance tests on the regenerative thermal oxidizer to determine the destruction efficiency of volatile organic compounds using a method specified in Regulation 401 KAR 50:015, Documents incorporated by reference, approved in the Compliance Test Protocol. A continuous measure of the combustion chamber temperature of the regenerative thermal oxidizer shall be made during the test. See No. 4.1 of this section. Testing shall take place according to Section I, Compliance Schedule and if required by the division, six months before the expiration date of this permit.

4. **Specific Monitoring Requirements:**

A monitoring device for the continuous measurement of the combustion chamber temperature of the regenerative thermal oxidizer shall be installed, calibrated, maintained, and operated according to the manufacturer's specifications. The monitoring device shall be certified by the manufacturer to be accurate to +/- 1 percent of the temperature being monitored. The monitoring device shall be connected to a device(s) that records the temperature via a strip chart, electronic media, or other means.

5. **Specific Recordkeeping Requirements:**

1. For Press 442, the permittee shall keep monthly records of the usage rates of all materials used at the press along with a calculation of total emissions of VOC for the current month and per 12 months. The emissions per 12 month totals shall be based on a 12 month rolling total. These records, as well as purchase orders and invoices for all VOC containing materials shall be made available for inspection upon request by any duly authorized representatives of the Division for Air Quality.
2. The permittee shall maintain records of the following information for the regenerative thermal oxidizer:
 - a. The design and/or manufacturer's specifications.
 - b. The operational procedures and preventative maintenance records.
 - c. The combustion chamber temperature shall be recorded once per hour.
 - d. During all periods of startup, shutdown, or malfunction of the regenerative thermal oxidizer, a daily log of the following shall be kept:
 1. Whether any air emissions were visible from the facilities associated with the regenerative thermal oxidizer.
 2. Whether visible emissions were normal for the process.
 3. The cause of the visible emissions.
 4. Any corrective action taken.
3. The permittee shall maintain records of the following information for the fountain solution being used:
 - a. the material safety data sheet of the fountain solution.
 - b. the as applied weight percentage of alcohol substitutes, alcohol, and total VOC's.

SECTION B - EMISSION POINTS, EMISSIONS UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

4. The permittee shall maintain records of the following information for the blanket wash being used:
 - a. the material safety data sheet of the blanket wash showing vapor pressure.

6. **Specific Reporting Requirements:**

The permittee shall submit a semi-annual report to the Division's Frankfort Field Office which contains a summary report of all recordkeeping required in No. 5.1 of this section.

7. **Specific Control Equipment Operating Conditions:**

1. The regenerative thermal oxidizer control equipment shall be maintained and operated to ensure compliance with all requirements for each press.
2. The minimum operating temperature of the regenerative thermal oxidizer control equipment shall be 1600 degrees F or the temperature established during the most recent performance test to maintain a minimum VOC destruction efficiency of 90%.

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8. **Alternate Operating Scenarios:**

See Section H.

9. **Compliance Schedule:**

See Section I.

10. **Compliance Certification Requirements:**

See Section F(7).

SECTION C - INSIGNIFICANT ACTIVITIES

The following listed activities have been determined to be insignificant activities for this source pursuant to Regulation 401 KAR 50:035, Section 5(4). While these activities are designated as insignificant the permittee must comply with the applicable regulation and some minimal level of periodic monitoring may be necessary.

| <u>Description</u> | <u>Generally Applicable Regulation</u> |
|--|--|
| 1. Waste paper cyclone | 401 KAR 59:010 |
| 2. Small hot melt gluers | None |
| 3. Ink jet printing and head cleaning | None |
| 4. Two magazine glueing machines | None |
| 5. Cooling tower | 401 KAR 63:010 |
| 6. Non process space and water heaters | None |
| 7. Bindery parts cleaner | None |
| 8. Chillers | None |
| 9. Bucket cleaner | None |
| 10. Cold solvent cleaner | 401 KAR 59:185 |

SECTION D - SOURCE EMISSION LIMITATIONS AND TESTING REQUIREMENTS

1. VOC emissions, as measured by methods referenced in 401 KAR 50:015, Section 1, shall not exceed the respective limitations specified herein.
2. Compliance with annual emissions and processing limitations imposed pursuant to 401 KAR 50:035, Section 7(1)(a), and contained in this permit, shall be based on emissions and processing rates for any twelve (12) consecutive months.

SECTION E - SOURCE CONTROL EQUIPMENT REQUIREMENTS

Pursuant to 401 KAR 50:055, Section 2(5), at all times, including periods of startup, shutdown and malfunction, owners and operators shall, to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the division which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source.

SECTION F - MONITORING, RECORD KEEPING, AND REPORTING REQUIREMENTS

1. When continuing compliance is demonstrated by periodic testing or instrumental monitoring, the permittee shall compile records of required monitoring information that include:
 - a. Date, place as defined in this permit, and time of sampling or measurements.
 - b. Analyses performance dates;
 - c. Company or entity that performed analyses;
 - d. Analytical techniques or methods used;
 - e. Analyses results; and
 - f. Operating conditions during time of sampling or measurement;

2. Records of all required monitoring data and support information, including calibrations, maintenance records, and original strip chart recordings, and copies of all reports required by the Division for Air Quality, shall be retained by the permittee for a period of five years and shall be made available for inspection upon request by any duly authorized representative of the Division for Air Quality. [401 KAR 50:035, Permits, Section 7(1)(d)2 and 401 KAR 50:035, Permits, Section 7(2)(c)]

3. In accordance with the requirements of Regulation 401 KAR 50:035, Permits, Section 7(2)(c) the permittee shall allow the Cabinet or authorized representatives to perform the following:
 - a. Enter upon the premises where a source is located or emissions-related activity is conducted, or where records are kept;
 - b. Have access to and copy, at reasonable times, any records required by the permit:
 - i. During normal office hours, and
 - ii. During periods of emergency when prompt access to records is essential to proper assessment by the Cabinet;
 - c. Inspect, at reasonable times, any facilities, equipment (including monitoring and pollution control equipment), practices, or operations required by the permit. Reasonable times shall include, but are not limited to the following:
 - i. During all hours of operation at the source,
 - ii. For all sources operated intermittently, during all hours of operation at the source and the hours between 8:00 a.m. and 4:30 p.m., Monday through Friday, excluding holidays, and
 - iii. During an emergency; and
 - d. Sample or monitor, at reasonable times, substances or parameters to assure compliance with the permit or any applicable requirements. Reasonable times shall include, but are not limited to the following:
 - i. During all hours of operation at the source,
 - ii. For all sources operated intermittently, during all hours of operation at the source and the hours between 8:00 a.m. and 4:30 p.m., Monday through Friday, excluding holidays, and
 - iii. During an emergency.

SECTION F - MONITORING, RECORD KEEPING, AND REPORTING REQUIREMENTS (CONTINUED)

4. No person shall obstruct, hamper, or interfere with any Cabinet employee or authorized representative while in the process of carrying out official duties. Refusal of entry or access may constitute grounds for permit revocation and assessment of civil penalties.
5. Summary reports of any monitoring required by this permit shall be submitted to the division's Frankfort Regional Office at least every six (6) months during the life of this permit, unless otherwise stated in this permit. For emission units that were still under construction or which had not commenced operation at the end of the 6-month period covered by the report and are subject to monitoring requirements in this permit, the report shall indicate that no monitoring was performed during the previous six months because the emission unit was not in operation.

The reports are due within 30 days after the end of each six-month reporting period that commences on the initial issuance date of this permit. The permittee may shift to semi-annual reporting on a calendar year basis upon approval of the regional office. If calendar year reporting is approved, the semi-annual reports are due January 30th and July 30th of each year. All reports shall be certified by a responsible official pursuant to Section 6(1) of 401 KAR 50:035, Permits. All deviations from permit requirements shall be clearly identified in the reports.

6. a. In accordance with the provisions of Regulation 401 KAR 50:055, Section 1 the owner or operator shall notify the Division for Air Quality's Frankfort Regional Office concerning startups, shutdowns, or malfunctions as follows:
 1. When emissions during any planned shutdowns and ensuing startups will exceed the standards notification shall be made no later than three (3) days before the planned shutdown, or immediately following the decision to shut down, if the shutdown is due to events which could not have been foreseen three (3) days before the shutdown.
 2. When emissions due to malfunctions, unplanned shutdowns and ensuing startups are or may be in excess of the standards notification shall be made as promptly as possible by telephone (or other electronic media) and shall cause written notice upon request.
- b. In accordance with the provisions of Regulation 401 KAR 50:035, Section 7(1)(e)2, the owner or operator shall report emission related exceedances from permit requirements including those attributed to upset conditions (other than emission exceedances covered by general condition 6 a. above) to the Division for Air Quality's Frankfort Regional Office within 30 days. Other deviations from permit requirements shall be included in the semiannual report required by general condition F.5.

SECTION F - MONITORING, RECORD KEEPING, AND REPORTING REQUIREMENTS (CONTINUED)

7. Pursuant to Regulation 401 KAR 50:035, Permits, Section 7(2)(b), the permittee shall certify compliance with the terms and conditions contained in this permit, annually on the permit issuance anniversary date or by January 30th of each year if calendar year reporting is approved by the regional office, by completing and returning a Compliance Certification Form (DEP 7007CC) (or an approved alternative) to the Division for Air Quality's Frankfort Regional Office and the U.S. EPA in accordance with the following requirements:
- a. Identification of each term or condition of the permit that is the basis of the certification;
 - b. The compliance status regarding each term or condition of the permit;
 - c. Whether compliance was continuous or intermittent; and
 - d. The method used for determining the compliance status for the source, currently and over the reporting period, pursuant to 401 KAR 50:035, Section 7(1)(c),(d), and (e).
 - e. For an emissions unit that was still under construction or which has not commenced operation at the end of the 12-month period covered by the annual compliance certification, the permittee shall indicate that the unit is under construction and that compliance with any applicable requirements will be demonstrated within the timeframes specified in the permit.
 - f. The certification shall be postmarked by the thirtieth (30) day following the applicable permit issuance anniversary date, or by January 30th of each year if calendar year reporting is approved by the regional office. **Annual compliance certifications should be mailed to the following addresses:**

**Division for Air Quality
Frankfort Regional Office
643 Teton Trail, Suite B
Frankfort, KY 40601**

**U.S. EPA Region IV
Air Enforcement Branch
Atlanta Federal Center
61 Forsyth St.
Atlanta, GA 30303-8960**

**Division for Air Quality
Central Files
803 Schenkel Lane
Frankfort, KY 40601**

8. In accordance with Regulation 401 KAR 50:035, Section 23, the permittee shall provide the division with all information necessary to determine its subject emissions within thirty (30) days of the date the KEIS emission report is mailed to the permittee.
9. Pursuant to Section VII.3 of the policy manual of the Division for Air Quality as referenced by Regulation 401 KAR 50:016, Section 1(1), results of performance test(s) required by the permit shall be submitted to the division by the source or its representative within forty-five days after the completion of the fieldwork.

SECTION G - GENERAL CONDITIONS

(a) General Compliance Requirements

1. The permittee shall comply with all conditions of this permit. A noncompliance shall be (a) violation(s) of state regulation 401 KAR 50:035, Permits, Section 7(3)(d) [and for federally enforceable permits is also a violation of Federal Statute 42 USC 7401 through 7671q (the Clean Air Act)] and is grounds for enforcement action including but not limited to the termination, revocation and reissuance, or revision of this permit.
2. The filing of a request by the permittee for any permit revision, revocation, reissuance, or termination, or of a notification of a planned change or anticipated noncompliance, shall not stay any permit condition.
3. This permit may be revised, revoked, reopened and reissued, or terminated for cause. The permit will be reopened for cause and revised accordingly under the following circumstances:
 - a. If additional applicable requirements become applicable to the source and the remaining permit term is three (3) years or longer. In this case, the reopening shall be completed no later than eighteen (18) months after promulgation of the applicable requirement. A reopening shall not be required if compliance with the applicable requirement is not required until after the date on which the permit is due to expire, unless this permit or any of its terms and conditions have been extended pursuant to Regulation 401 KAR 50:035, Section 12(2)(c);
 - b. The Cabinet or the U. S. EPA determines that the permit must be revised or revoked to assure compliance with the applicable requirements;
 - c. The Cabinet or the U. S. EPA determines that the permit contains a material mistake or that inaccurate statements were made in establishing the emissions standards or other terms or conditions of the permit;

Proceedings to reopen and reissue a permit shall follow the same procedures as apply to initial permit issuance and shall affect only those parts of the permit for which cause to reopen exists. Reopenings shall be made as expeditiously as practicable. Reopenings shall not be initiated before a notice of intent to reopen is provided to the source by the division, at least thirty (30) days in advance of the date the permit is to be reopened, except that the division may provide a shorter time period in the case of an emergency.

4. The permittee shall furnish to the division, in writing, information that the division may request to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit, or to determine compliance with the permit. [401 KAR 50:035, Permits, Section 7(2)(b)3e and 401 KAR 50:035, Permits, Section 7(3)(j)]
5. The permittee, upon becoming aware that any relevant facts were omitted or incorrect information was submitted in the permit application, shall promptly submit such supplementary facts or corrected information to the permitting authority.

SECTION G - GENERAL CONDITIONS (CONTINUED)

6. Any condition or portion of this permit which becomes suspended or is ruled invalid as a result of any legal or other action shall not invalidate any other portion or condition of this permit. [401 KAR 50:035, Permits, Section 7(3)(k)]
7. The permittee shall not use as a defense in an enforcement action the contention that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance. [401 KAR 50:035, Permits, Section 7(3)(e)]
8. Except as identified as state-origin requirements in this permit, all terms and conditions contained herein shall be enforceable by the United States Environmental Protection Agency and citizens of the United States.
9. This permit shall be subject to suspension if the permittee fails to pay all emissions fees within 90 days after the date of notice as specified in 401 KAR 50:038, Section 3(6). [401 KAR 50:035, Permits, Section 7(3)(h)]
10. Nothing in this permit shall alter or affect the liability of the permittee for any violation of applicable requirements prior to or at the time of permit issuance. [401 KAR 50:035, Permits, Section 8(3)(b)]
11. This permit shall not convey property rights or exclusive privileges. [401 KAR 50:035, Permits, Section 7 (3)(g)]
12. Issuance of this permit does not relieve the permittee from the responsibility of obtaining any other permits, licenses, or approvals required by the Kentucky Cabinet for Natural Resources and Environmental Protection or any other federal, state, or local agency.
13. Nothing in this permit shall alter or affect the authority of U.S. EPA to obtain information pursuant to Federal Statute 42 USC 7414, Inspections, monitoring, and entry. [401 KAR 50:035, Permits, Section 7(2)(b)5]
14. Nothing in this permit shall alter or affect the authority of U.S. EPA to impose emergency orders pursuant to Federal Statute 42 USC 7603, Emergency orders. [401 KAR 50:035, Permits, Section 8(3)(a)]
15. Permit Shield: Except as provided in State Regulation 401 KAR 50:035, Permits, compliance by the affected facilities listed herein with the conditions of this permit shall be deemed to be compliance with all applicable requirements identified in this permit as of the date of issuance of this permit.
16. All previously issued construction and operating permits are hereby subsumed into this permit.

SECTION G - GENERAL CONDITIONS (CONTINUED)

(b) Permit Expiration and Reapplication Requirements

This permit shall remain in effect for a fixed term of five (5) years following the original date of issue. Permit expiration shall terminate the source's right to operate unless a timely and complete renewal application has been submitted to the division at least six months prior to the expiration date of the permit. Upon a timely and complete submittal, the authorization to operate within the terms and conditions of this permit, including any permit shield, shall remain in effect beyond the expiration date, until the renewal permit is issued or denied by the division. [401 KAR 50:035, Permits, Section 12]

(c) Permit Revisions

1. A minor permit revision procedure may be used for permit revisions involving the use of economic incentive, marketable permit, emission trading, and other similar approaches, to the extent that these minor permit revision procedures are explicitly provided for in the SIP or in applicable requirements and meet the relevant requirements of Regulation 401 KAR 50:035, Section 15.
2. This permit is not transferable by the permittee. Future owners and operators shall obtain a new permit from the Division for Air Quality. The new permit may be processed as an administrative amendment if no other change in this permit is necessary, and provided that a written agreement containing a specific date for transfer of permit responsibility coverage and liability between the current and new permittee has been submitted to the permitting authority thirty (30) days in advance of the transfer.

(d) Construction, Start-Up, and Initial Compliance Demonstration Requirements

None

(e) Acid Rain Program Requirements

1. If an applicable requirement of Federal Statute 42 USC 7401 through 7671q (the Clean Air Act) is more stringent than an applicable requirement promulgated pursuant to Federal Statute 42 USC 7651 through 7651o (Title IV of the Act), both provisions shall apply, and both shall be state and federally enforceable.

(f) Emergency Provisions

1. An emergency shall constitute an affirmative defense to an action brought for noncompliance with the technology-based emission limitations if the permittee demonstrates through properly signed contemporaneous operating logs or other relevant evidence that:
 - a. An emergency occurred and the permittee can identify the cause of the emergency;
 - b. The permitted facility was at the time being properly operated;
 - c. During an emergency, the permittee took all reasonable steps to minimize levels of emissions that exceeded the emissions standards or other requirements in the permit;

SECTION G - GENERAL CONDITIONS (CONTINUED)

and,

- d. The permittee notified the division as promptly as possible and submitted written notice of the emergency to the division within two working days after the time when emission limitations were exceeded due to the emergency. The notice shall meet the requirements of 401 KAR 50:035, Permits, Section 7(1)(e)2, and include a description of the emergency, steps taken to mitigate emissions, and the corrective actions taken. This requirement does not relieve the source of any other local, state or federal notification requirements.
2. Emergency conditions listed in General Condition (f)1 above are in addition to any emergency or upset provision(s) contained in an applicable requirement.
3. In an enforcement proceeding, the permittee seeking to establish the occurrence of an emergency shall have the burden of proof. [401 KAR 50:035, Permits, Section 9(3)]

(g) Risk Management Provisions

1. The permittee shall comply with all applicable requirements of 40 CFR Part 68, Risk Management Plan provisions. If required, the permittee shall comply with the Risk Management Program and submit a Risk Management Plan to:
RMP Reporting Center
P.O. Box 3346
Merrifield, VA, 22116-3346
2. If requested, submit additional relevant information by the division or the U.S. EPA.

(h) Ozone depleting substances

1. The permittee shall comply with the standards for recycling and emissions reduction pursuant to 40 CFR 82, Subpart F, except as provided for Motor Vehicle Air Conditioners (MVACs) in Subpart B:
 - a. Persons opening appliances for maintenance, service, repair, or disposal shall comply with the required practices contained in 40 CFR 82.156.
 - b. Equipment used during the maintenance, service, repair, or disposal of appliances shall comply with the standards for recycling and recovery equipment contained in 40 CFR 82.158.
 - c. Persons performing maintenance, service, repair, or disposal of appliances shall be certified by an approved technician certification program pursuant to 40 CFR 82.161.
 - d. Persons disposing of small appliances, MVACs, and MVAC-like appliances (as defined at 40 CFR 82.152) shall comply with the recordkeeping requirements pursuant to 40 CFR 82.166.
 - e. Persons owning commercial or industrial process refrigeration equipment shall comply with the leak repair requirements pursuant to 40 CFR 82.156.
 - f. Owners/operators of appliances normally containing 50 or more pounds of refrigerant shall keep records of refrigerant purchased and added to such appliances pursuant to 40 CFR 82.166.

SECTION G - GENERAL CONDITIONS (CONTINUED)

2. If the permittee performs service on motor (fleet) vehicle air conditioners containing ozone-depleting substances, the source shall comply with all applicable requirements as specified in 40 CFR 82, Subpart B, Servicing of Motor Vehicle Air Conditioners.

SECTION H - ALTERNATE OPERATING SCENARIOS

The alternate operating scenarios set forth below have been approved by the division based on information supplied with the application and during the application review process. The terms and conditions of each alternate operating scenario have been developed to ensure compliance with the applicable regulations. The permittee, when making a change from one operating scenario to another, shall record contemporaneously in a log at the permitted facility a record of the scenario under which the facility is operating. The permit shield, as provided in Section G, Condition (a)15, shall extend to each alternate operating scenario set forth in this Section. All conditions not specified under an alternate operating scenario shall remain unchanged from their permit values or requirements.

This alternate operating scenario using the existing condenser/filter control devices will be in operation until the installation and start-up of the new regenerative thermal oxidizer control device - See Section I, Compliance Schedule.

- EC1 (441)** HantschoMark II 2 Unit Web Offset Heatset Lithographic Printing Press 441 with a 1.8 MMBTU/hr natural gas fired dryer controlled by Publishers Printing Company APC#3 condenser/filter system - destruction efficiency - 62.6%
Maximum continuous rating: Ink - 20 lbs/hr
Fountain solution - 2.9 lbs/hr
Manual Blanket wash - 0.11 gal/hr
Construction commenced: January, 1978
- (442)** Hantscho Mark IV 4 Unit Web Offset Heatset Lithographic Printing Press 442 with a 5.50 MMBTU/hr natural gas fired dryer controlled by Publishers Printing Company APC#3 condenser/filter system - destruction efficiency - 62.6%
Maximum continuous rating: Ink - 50 lbs/hr
Fountain solution - 1.1 lbs/hr
Manual Blanket wash - 0.23 gal/hr
Construction commenced: May, 1995
- (444)** Harris M-80 5 Unit Web Offset Heatset Lithographic Printing Press 444 with a 0.96 MMBTU/hr natural gas fired dryer controlled by Publishers Printing Company APC#3 condenser/filter system - destruction efficiency - 62.6%
Maximum continuous rating: Ink - 30 lbs/hr
Fountain solution - 2.9 lbs/hr
Manual Blanket wash - 0.14 gal/hr
Construction commenced: April, 1979
- (449)** Hantscho Mark VI 5 Unit Web Offset Heatset Lithographic Printing Press 449 with a 2.2 MMBTU/hr natural gas fired dryer controlled by Publishers Printing Company APC#3 condenser/filter system - destruction efficiency - 62.6%
Maximum continuous rating: Ink - 30 lbs/hr
Fountain solution - 2.9 lbs/hr
Manual Blanket wash - 0.29 gal/hr
Construction commenced: June, 1982

SECTION H - ALTERNATE OPERATING SCENARIOS (CONTINUED)

- EC2 (437)** Hantscho Mark VI 6 Unit Web Offset Heatset Lithographic Printing Press 437 with a 2.56 MMBTU/hr natural gas fired dryer controlled by Publishers Printing Company APC#2 condenser/filter system - destruction efficiency - 62.6%
Maximum continuous rating: Ink - 30 lbs/hr
Fountain solution - 2.9 lbs/hr
Manual Blanket wash - 0.34 gal/hr
Construction commenced: December, 1983
- (446)** Hantscho Mark VI 8 Unit Web Offset Heatset Lithographic Printing Press 446 with a 2.2 MMBTU/hr natural gas fired dryer controlled by Publishers Printing Company APC#2 condenser/filter system - destruction efficiency - 62.6%
Maximum continuous rating: Ink - 50 lbs/hr
Fountain solution - 2.9 lbs/hr
Manual Blanket wash - 0.46 gal/hr
Construction commenced: February, 1978
- (448)** Hantscho Mark VI 8 Unit Web Offset Heatset Lithographic Printing Press 448 with a 2.2 MMBTU/hr natural gas fired dryer controlled by Publishers Printing Company APC#2 condenser/filter system - destruction efficiency - 62.6%
Maximum continuous rating: Ink - 50 lbs/hr
Fountain solution - 2.9 lbs/hr
Manual Blanket wash - 0.46 gal/hr
Construction commenced: May, 1981
- (484)** Harris M-80 5 Unit Web Offset Heatset Lithographic Printing Press 484 with a 0.96 MMBTU/hr natural gas fired dryer controlled by Publishers Printing Company APC#2 condenser/filter system - destruction efficiency - 62.6%
Maximum continuous rating: Ink - 30 lbs/hr
Fountain solution - 2.9 lbs/hr
Manual Blanket wash - 0.14 gal/hr
Construction commenced: March, 1985
- EC3 (470)** Hantscho Mark Via 9 Unit Web Offset Heatset Lithographic Printing Press 470 with a 3.3 MMBTU/hr natural gas fired dryer controlled by Publishers Printing Company APC#1 condenser/filter system - destruction efficiency - 62.6%
Maximum continuous rating: Ink - 50 lbs/hr
Fountain solution - 2.9 lbs/hr
Automatic Blanket wash - 0.52 gal/hr
Construction commenced: May, 1987
- EC4 (450)** Harris M-80 5 Unit Web Offset Heatset Lithographic Printing Press 450 with a 1.925 MMBTU/hr natural gas fired dryer controlled by MMT Environmental - PPFS - 5000M condenser/filter system - destruction efficiency - 62.6%
Maximum continuous rating: Ink - 30 lbs/hr
Fountain solution - 2.9 lbs/hr

SECTION H - ALTERNATE OPERATING SCENARIOS (CONTINUED)

Manual Blanket wash - 0.14 gal/hr

Construction commenced: January, 1990

APPLICABLE REGULATIONS:

None

1. Operating Limitations:

The following are the procedures for handling the used rags that have been used to wash the blankets on the presses:

- 1) The used rags are collected in a closed metal container that contains a fake bottom that allows all fluid to drain from the rags in a waiting period of 3 to 4 days.
- 2) A plug in the bottom of the container is opened to allow drainage and collection of the drained fluid which is picked up and disposed of off site by a waste disposal facility. The used rags are collected, laundered off site by a rag laundering facility, and returned to the company for reuse.

2. Emission Limitations:

VOC emissions from Press 442 shall not equal or exceed 40 tons/yr based on a 12 month rolling total to preclude applicability of 401 KAR 51:052, Review of new sources in or impacting upon nonattainment areas.

Compliance Demonstration Method:

The following formulas may be used in calculating emissions of VOC's from Press 442:

1. $\text{VOC emitted from ink (tons/month)} = \text{tons of ink used per month} \times 80\% \text{ ink not retained in paper} \times \% \text{VOC content of ink} \times 100\% \text{ VOC capture efficiency} \times (1 - \text{VOC destruction efficiency of the condenser/filter control system})$
2. $\text{VOC emitted from fountain solution (tons/month)} = [\text{tons of fountain solution used per month} \times \% \text{VOC content of fountain solution} \times 70\% \text{ VOC capture efficiency} \times (1 - \text{VOC destruction efficiency of the condenser/filter control system})] + [\text{tons of fountain solution used per month} \times \% \text{VOC content of fountain solution} \times 30\% \text{ VOC not captured}]$
3. $\text{VOC emitted from manual blanket wash cleanup (tons/month)} = \text{gallons of blanket wash used per month} \times 50\% \text{ blanket wash not retained in rags} \times \text{VOC content of blanket wash (lbs/gal)} \times (1 \text{ ton}/2000 \text{ lbs})$
4. $\text{Total VOC's emitted} = \text{VOC's emitted from ink} + \text{VOC's emitted from fountain solution} + \text{VOC's emitted from blanket wash cleanup}$

3. Testing Requirements:

None

4. Specific Monitoring Requirements:

1. A monitoring device for the continuous measurement of the inlet and outlet temperature of each condenser/filter control system shall be installed, calibrated, maintained, and operated according to the manufacturer's specifications. The monitoring device shall be certified by the manufacturer to be accurate to +/- 1 percent of the temperature being monitored. The monitoring device shall be

SECTION H - ALTERNATE OPERATING SCENARIOS (CONTINUED)

connected to a device(s) that records the temperature via a strip chart, electronic media, or other means.

2. Monitoring devices for the continuous measurement of pressure drops across each condenser/filter control system shall be installed, calibrated, maintained, and operated according to the manufacturer's specifications. The monitoring devices shall be certified by the manufacturer to be accurate to +/- 1 percent of the pressure drop being monitored.

5. Specific Recordkeeping Requirements:

1. For Press 442, the permittee shall keep monthly records of the usage rates of all materials used at the press along with a calculation of total emissions of VOC for the current month and per 12 months. The emissions per 12 month totals shall be based on a 12 month rolling total. These records, as well as purchase orders and invoices for all VOC containing materials shall be made available for inspection upon request by any duly authorized representatives of the Division for Air Quality.
2. The permittee shall maintain records of the following information for each condenser/filter control system:
 - a. The design and/or manufacturer's specifications.
 - b. The operational procedures and preventative maintenance records.
 - c. The temperature monitoring devices shall be recorded once per hour.
 - d. The pressure drop monitoring devices shall be recorded once per shift.
 - e. The permittee shall record all periods (during actual operation) during which the temperature difference across the condenser/filter control system (outlet temperature - inlet temperature) is zero or positive and corrective actions taken.
 - f. The permittee shall record all periods (during actual operation) during which the pressure drops across the condenser/filter control system are zero or positive and corrective actions taken.
 - g. During all periods of startup, shutdown, or malfunction of each condenser/filter control system, a daily log of the following shall be kept:
 1. Whether any air emissions were visible from the facilities associated with the condenser/filter control system.
 2. Whether visible emissions were normal for the process.
 3. The cause of the visible emissions.
 4. Any corrective action taken.

6. Specific Reporting Requirements:

The permittee shall submit a semi-annual report to the Division's Frankfort Field Office which contains a summary report of all recordkeeping required in Sections 5.1, 5.2e., and 5.2f., of this section.

7. Specific Control Equipment Operating Conditions:

The condenser/filter control systems shall be maintained and operated to ensure compliance with all requirements for each press.

SECTION H - ALTERNATE OPERATING SCENARIOS (CONTINUED)

8. **Alternate Operating Scenarios:**
See Section B.
9. **Compliance Schedule:**
See Section I.
10. **Compliance Certification Requirements:**
See Section F(7).

SECTION I - COMPLIANCE SCHEDULE

This section contains compliance schedule requirements as required by 401 KAR 50:035, Permits, Section 7(2)(a). Progress reports on this schedule must be submitted at least semiannually, or at more frequent intervals if required in the specific conditions outlined below. Reports shall include the following items: (a) Dates scheduled for achieving each milestone, and the actual date that compliance is achieved; and (b) An explanation of why dates in the schedule of compliance were not or will not be met, and preventive or corrective measures adopted to ensure that compliance with future items will be brought back on schedule.

A. 401 KAR 50:012, General application, required RACT (reasonable available control technology)VOC controls. During the Title V review it was determined that the existing condenser/filter control systems in place on the existing offset heatset lithographic printing presses were not sufficient to meet these requirements. Therefore the source will replace the existing condenser/filter control systems with one Meg Tec Systems Cleanswitch CS-250-955 regenerative thermal oxidizer to control all 10 presses. Following is the compliance schedule:

1. Installation of the new control equipment will begin by December 1, 2001.
2. Operation will begin and compliance will be demonstrated on the new control equipment by June 1, 2002.

B. Compliance with the terms and conditions of this Section shall be certified annually on the permit anniversary date, to the Division for Air Quality and to the U. S. EPA when compliance has been achieved. The compliance certification shall include the following:

1. The identification of the permit term or condition in this Section that is the basis of the certification;
2. The compliance status;
3. Whether compliance is continuous or intermittent; and,
4. The method used for determining the compliance status, currently and over the the reporting period pursuant to 401 KAR 50:035, Section 7(1)(c),(d), and (e).

APB
KY129



JAMES E. BICKFORD
SECRETARY

PAUL E. PATTON
GOVERNOR

COMMONWEALTH OF KENTUCKY
NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET

OFFICE OF THE SECRETARY
FRANKFORT, KENTUCKY 40601

TELEPHONE: (502) 564-3350
May 23, 2001

Mr. Stanley Meiburg
Acting Regional Administrator
U.S. EPA, Region 4
Atlanta Federal Center
61 Forsyth Street, S.W.
Atlanta, Georgia 30303-8960

Dear Mr. Meiburg:


Enclosed for your consideration are five copies of a revision to the Jefferson County portion of Kentucky's State Implementation Plan (SIP). The proposed SIP revision package contains nine Reasonably Available Control Technology (RACT) plans for major sources of oxides of nitrogen (NO_x). The following eight plans replace the version submitted to the U.S. Environmental Protection Agency on November 12, 1999, by the Natural Resources and Environmental Protection Cabinet:

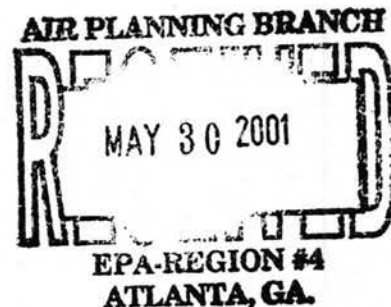
- Ford Louisville Assembly Plant
- GE Appliances
- Kosmos Cement Company
- Louisville Gas & Electric Company – Cane Run Generating Station
- Louisville Gas & Electric Company – Mill Creek Generating Station
- Louisville Medical Center Steam Plant
- Oxy Vinyls, LP.
- Texas Gas Transmission

The ninth plan is new for the American Synthetic Rubber Company.

Your prompt consideration of this request is appreciated. If you have any questions or comments concerning this matter, please contact Lona Brewer at the Division for Air Quality at (502) 573-3382 or Jonathan Trout with the Air Pollution Control District of Jefferson County at (502) 574-7251.

Sincerely,


James E. Bickford
Secretary



JEB:mrl
Enclosures
cc: Kay Prince

Air Pollution Control Board of Jefferson County Board Order

This Board Order is issued by the Air Pollution Control Board of Jefferson County pursuant to the authority granted in Kentucky Revised Statutes Chapter 77 Air Pollution Control.

Company: American Synthetic Rubber Company, LLC (ASRC)
4500 Camp Ground Road
Louisville, Kentucky 40216

Background and Discussion

Regulation 6.42 *Reasonably Available Control Technology Requirements for Major Volatile Organic Compound- and Nitrogen Oxides-Emitting Facilities* requires the establishment and implementation of reasonably available control technology (RACT) for certain affected facilities that emit oxides of nitrogen (NO_x) and that are located at a major stationary source for NO_x. Section 4.4 requires that each determination of RACT approved by the Air Pollution Control District of Jefferson County (District) be submitted to the U.S. Environmental Protection Agency (EPA) as a site-specific revision of the Kentucky State Implementation Plan (SIP).

A Public Hearing on this Board Order was held before the Board on November 15, 2000. Based upon the evidence presented at that hearing, the Board determined that approval of this Board Order and submittal as a site-specific revision of the Kentucky SIP were appropriate.

Now therefore be it ordered that:

1. The attached NO_x RACT Plan applicable to the ASRC is approved by the District. The ASRC shall comply with this plan.
2. Compliance with the attached NO_x RACT Plan shall be deemed compliance with the requirements of Regulation 6.42 section 1.2, section 1.3, Section 2 to the extent that this Section applies to section 4.3, section 4.3, and Section 5 to the extent that this Section applies to verification of compliance with the requirements pursuant to section 4.3.
3. This Board Order shall not be deemed or construed to be the result of any violation of any federal, state, or local statute, regulation, or ordinance for any purpose whatsoever.
4. The ASRC has reviewed this Board Order and consents to all its requirements and terms.

5. The effective date of this Board Order and the attached NO_x RACT Plan is January 1, 2001.

Dated this 20th day of December, 2000.

Air Pollution Control Board
of Jefferson County

By: Robert W. Powell
Robert W. Powell, M.D.
Chairman

American Synthetic Rubber Company, LLC

By: M. Paul Serridge
M. Paul Serridge
President

Air Pollution Control District
of Jefferson County

By: Jesse M. Goldsmith
Jesse M. Goldsmith
Air Pollution Control Officer

Approved as to form and legality:
Air Pollution Control District
of Jefferson County

By: Gaylord B. Ballard
Gaylord B. Ballard
Attorney

NO_x RACT Plan

1. The oxides of nitrogen (NO_x, expressed as NO₂) emission from Boiler #1 and Boiler #2 shall not exceed 0.50 pound per million Btu of heat input, based upon a 30-day rolling average. This limit applies at all times, including periods of startup, shutdown, or malfunction.
2. The ASRC shall calibrate, maintain, and operate a continuous emissions monitoring system (CEMS), and record the output of the system, for measuring NO_x emissions from Boiler #1 and Boiler #2. The following requirements apply to the CEMS:
 - A. The CEMS shall be operated and data recorded during all periods of operation of a boiler except for CEMS breakdowns and repairs. Data shall be recorded during calibration checks and zero and span adjustments,
 - B. The 1-hour average NO_x emission rates measured by the CEMS shall be expressed in pounds per million Btu heat input and shall be used to calculate the average emission rates under NO_x RACT Plan Element (Element) No. 1,
 - C. The 1-hour averages shall be calculated using the data points required under 40 CFR §60.13(b). At least 2 data points shall be used to calculate each 1-hour average,
 - D. The procedures under 40 CFR §60.13 shall be followed for evaluation and operation of the CEMS,
 - E. The span value for NO_x is 500, and
 - F. When NO_x emission data are not obtained because of CEMS breakdowns, repairs, calibration checks and zero and span adjustments, emission data shall be obtained by using standby monitoring systems, Method 7, Method 7a, or other reference methods approved by the District to provide emission data for a minimum of 75 % of the operating hours in the boiler operating day, in at least 22 out of 30 successive boiler operating days.
3. The ASRC shall maintain the records listed in 40 CFR §60.49b (g) for Boiler #1 and Boiler #2 with the following clarifications:
 - A. The NO_x emission rates shall be expressed in pounds per million Btu heat input measured, and
 - B. The applicable NO_x emission limit is contained in Element No. 1.Each record shall be maintained for a minimum of 5 years and made available to the District upon request.
4. The NO_x (expressed as NO₂) emission from each of Boiler #3 and Boiler #4 shall not exceed 0.20 pound per million Btu of heat input. Neither boiler shall combust a fuel other than natural gas except that Boiler #4 may also combust No. 2 fuel oil.
6. The ASRC shall conduct an annual performance test for NO_x for each of Boiler #3 and Boiler #4. If the requirements of Regulation 6.42 *Reasonably Available Control Technology Requirements for Major Volatile Organic Compound- and Nitrogen Oxides-Emitting Facilities* section 5.1 are met, and subject to the annual performance test schedule

reinstitution provision, performance testing may be done on a biennial schedule. Performance testing shall meet the following requirements:

- A. Emissions concentrations shall be obtained using Reference Methods of 40 CFR Part 60 Appendix A. The following methods shall be used:
 - (1) Method 3, 3A, 3B, or 3C, which is applicable for determining the concentrations of one or more of the following gases: carbon dioxide, O₂, CO, nitrogen, and methane,
 - (2) Method 4, which determines the moisture content in stack gases, if necessary for calculations due to differences caused by measuring the pollutant and either oxygen or carbon dioxide on a wet or dry basis,
 - (3) Method 7, 7A, 7B, 7C, 7D, or 7E, which provides the analytical method for determining the concentration of NO_x emissions from stationary sources, and
 - (4) Method 19, which is used in calculating the mass of pollutant per heat input.
 - B. Sampling shall be conducted as specified in 40 CFR Part 60 Appendix B Performance Specification 2 paragraphs 7.1.1, and 7.1.2, using the traverse points specified in 40 CFR Part 60 Appendix B Performance Specification 2 paragraph 3.2.
 - C. The use of other Reference Methods that are added to 40 CFR Part 60 Appendix A, alternative tests, or modifications to the Reference Methods listed in NO_x RACT Plan Element (Element) No. 6.A. may be proposed by the ASRC as part of the testing plan required by Element No. 6.E. Such methods may be used if approved in writing by the District.
 - D. Performance testing shall meet the requirements of Regulation 1.04 *Performance Tests* that are not addressed in this Element.
 - E. A notification of intent to conduct a performance test shall be submitted to the District at least 25 working days in advance of the projected starting date for the performance test. The notification shall include the proposed test methods to be used.
 - F. If a pre-test conference to discuss the proposed test methods is deemed necessary by the District, a pre-test conference shall be arranged by District personnel.
 - G. At least 10 working days' prior notice of the scheduled starting date for the performance test shall be provided to the District.
 - H. A performance test report shall be submitted to the District within 60 days of completion of performance testing. The report shall include the calculations used to determine emissions. The NO_x emission rate shall be expressed in pounds per million Btu format. The raw data shall be retained by the ASRC for a minimum of 5 years and made available to the District upon request. Selected portions of the raw data used to calculate the emissions shall be included in the report in a format provided by the District.
7. The ASRC shall keep a record identifying all deviations from the requirements of this NO_x RACT Plan and shall submit to the District a written report of all deviations that occurred during the preceding semi-annual period. Semi-annual periods shall run from January 1 to June 30 and July 1 to December 31. The report shall contain the following information:
- A. The boiler number,

- B. The beginning and ending date of the reporting period,
- C. Identification of all periods during which a deviation occurred,
- D. A description, including the magnitude, of the deviation,
- E. If known, the cause of the deviation, and
- F. A description of all corrective actions taken to abate the deviation.

If no deviation occurred during the semi-annual period, the report shall contain a negative declaration. Each report shall be submitted within 60 days following the end of the semi-annual period. Alternatively, a written report of all deviations that occurred during the preceding calendar quarter, or negative declaration, may be made, in which case the quarterly report shall be submitted within 30 days following the end of the calendar quarter.

8. In lieu of the requirements in this NO_x RACT Plan, the ASRC may comply with alternative requirements regarding emission limitations, equipment operation, test methods, monitoring, recordkeeping, or reporting, provided the following conditions are met:
- A. The alternative requirements are established and incorporated into an operating permit pursuant to a Title V Operating Permit issuance, renewal, or significant permit revision process as established in Regulation 2.16,
 - B. The alternative requirements are consistent with the streamlining procedures and guidelines set forth in section II.A. of *White Paper Number 2 for Improved Implementation of the Part 70 Operating Permits Program*, March 5, 1996, U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards. The overall effect of compliance with alternative requirements shall consider the effect on an intrinsic basis, such as pounds per million Btu. However, alternative requirements that are developed based upon revisions to the applicable requirements contained in 40 CFR Part 60 shall be approvable pursuant to this Element,
 - C. The U.S. Environmental Protection Agency (EPA) has not objected to the issuance, renewal, or revision of the Title V Operating Permit, and either
 - D. If the public comment period preceded the EPA review period, then the District had transmitted any public comments concerning the alternative requirements to EPA with the proposed permit, or
 - E. If the EPA and public comment periods ran concurrently, then the District had transmitted any public comments concerning the alternative requirements to the EPA no later than 5 working days after the end of the public comment period.

The District's determination of approval of any alternative requirements is not binding on the EPA. Noncompliance with any alternative requirement established pursuant to the Title V Operating Permit process constitutes a violation of the NO_x RACT Plan.

History: Approved 12-20-00; effective 1-1-01.

JAMES E. BICKFORD
SECRETARY



PAUL E. PATTON
GOVERNOR

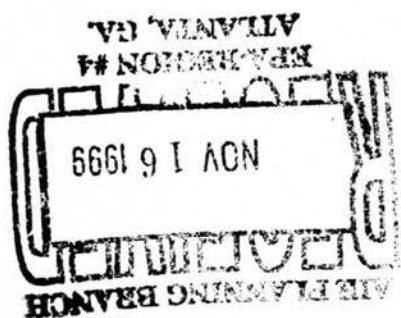
COMMONWEALTH OF KENTUCKY
NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET

OFFICE OF THE SECRETARY

FRANKFORT KENTUCKY 40601

TELEPHONE: (502) 564-3350

November 12, 1999



Mr. John H. Hankinson, Jr.
Regional Administrator
U.S. EPA, Region IV
Atlanta Federal Center
61 Forsyth Street, S.W.
Atlanta, Georgia 30303

Dear Mr. Hankinson:

Enclosed are four copies of a request from the Air Pollution Control District of Jefferson County for a revision to the Jefferson County portion of the Kentucky State Implementation Plan.

This proposed SIP revision submittal package contains ten reasonably available control technology (RACT) plans for major sources of oxides of nitrogen (NOx). These plans were developed by the Air Pollution Control District of Jefferson County and apply to the following major sources:

- E.I. DuPont de Nemours & Company
- Ford Louisville Assembly Plant
- GE Appliances
- Kosmos Cement Company
- Louisville Gas & Electric Company - Cane Run Generating Station
- Louisville Gas & Electric Company - Mill Creek Generating Station
- Louisville Medical Center Steam Plant
- Oxy Vynyls, LP.
- Rohm & Haas Company
- Texas Gas Transmission

Your prompt consideration of this request is appreciated. If you have any questions or comments, please contact Mr. Arthur L. Williams at (502) 574-8689.

Sincerely,

James E. Bickford
James E. Bickford
Secretary

EDUCATION
PAYS

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JEB:jt

Enclosures

**Air Pollution Control Board of Jefferson County
Board Order**

This Board Order is issued by the Air Pollution Control Board of Jefferson County pursuant to the authority granted in Kentucky Revised Statutes Chapter 77 Air Pollution Control.

Company: E. I. du Pont de Nemours & Company (DuPont)
4200 Camp Ground Road
Louisville, Kentucky 40216

Background and Discussion

Regulation 6.42 *Reasonably Available Control Technology Requirements for Major Volatile Organic Compound- and Nitrogen Oxides-Emitting Facilities* requires the establishment and implementation of reasonably available control technology (RACT) for certain affected facilities that emit oxides of nitrogen (NO_x) and that are located at a major stationary source for NO_x. Section 4.4 requires that each determination of RACT approved by the Air Pollution Control District of Jefferson County (District) be submitted to the U.S. Environmental Protection Agency (EPA) as a site-specific revision of the Kentucky State Implementation Plan (SIP).

A Public Hearing on this Board Order was held before the Board on November 8, 1999. Based upon the evidence presented at that hearing, the Board determined that approval of this Board Order and submittal as a site-specific revision of the Kentucky SIP were appropriate.

Now therefore be it ordered that:

1. The attached NO_x RACT Plan applicable to DuPont is approved by the District. DuPont shall comply with this plan.
2. Compliance with the attached NO_x RACT Plan shall be deemed compliance with the requirements of Regulation 6.42 section 1.2, section 1.3, Section 2 to the extent that this Section applies to section 4.3, section 4.3, and Section 5 to the extent that this Section applies to verification of compliance with the requirements pursuant to section 4.3.
3. This Board Order shall not be deemed or construed to be the result of any violation of any federal, state, or local statute, regulation, or ordinance for any purpose whatsoever.
4. DuPont has reviewed this Board Order and consents to all its requirements and terms.

5. The effective date of this Board Order is January 1, 2000.

Dated this 8th day of November, 1999.

Air Pollution Control Board
of Jefferson County

By: Robert W. Powell
Robert W. Powell, M.D.
Chairman

Air Pollution Control District
of Jefferson County

By: Arthur L. Williams
Arthur L. Williams
Acting Air Pollution
Control Officer

E. I. du Pont de Nemours & Company

By: M. H. Sanchez
Michael Sanchez
Plant Manager

Approved as to form and legality:
Air Pollution Control District
of Jefferson County

By: Gaylord B. Ballard
Gaylord B. Ballard
Attorney

NO_x RACT Plan

1. The oxides of nitrogen (NO_x, expressed as NO₂) emission from each of Boiler #4 and Boiler #5 shall not exceed 0.20 pounds per million Btu of heat input, based upon a 30-day rolling average. This limit applies at all times, including periods of startup, shutdown, or malfunction.

2. E. I. du Pont de Nemours & Company (DuPont) shall install, calibrate, maintain, and operate a continuous emissions monitoring system (CEMS), and record the output of the system, for measuring NO_x emissions from each boiler. The following requirements apply to each CEMS:

- A. A CEMS shall be operated and data recorded during all periods of operation of each boiler except for CEMS breakdowns and repairs. Data shall be recorded during calibration checks and zero and span adjustments,
- B. The 1-hour average NO_x emission rates measured by a CEMS shall be expressed in pounds per million Btu heat input and shall be used to calculate the average emission rates under NO_x RACT Plan Element (Element) No. 1,
- C. The 1-hour averages shall be calculated using the data points required under 40 CFR §60.13(b). At least 2 data points shall be used to calculate each 1-hour average,
- D. The procedures under 40 CFR §60.13 shall be followed for installation, evaluation, and operation of a CEMS,
- E. The span value for NO_x is 500, and
- F. When NO_x emission data are not obtained because of CEMS breakdowns, repairs, calibration checks and zero and span adjustments, emission data shall be obtained by using standby monitoring systems, Method 7, Method 7a, or other reference methods approved by the District to provide emission data for a minimum of 75 % of the operating hours in each boiler operating day, in at least 22 out of 30 successive boiler operating days.

3. By January 1, 2000, DuPont shall submit to the District the performance evaluation of the CEMS using the applicable performance specifications in 40 CFR Part 60 Appendix B.

4. DuPont shall maintain the records listed in 40 CFR §60.49b (g) with the following clarifications:

- A. The NO_x emission rates shall be expressed in pounds per million Btu heat input measured, and
 - B. The applicable NO_x emission limit is contained in Element No. 1.
- Each record shall be maintained for a minimum of 5 years and made available to the District upon request.

5. DuPont shall submit to the District the following reports:

- A. Excess emission reports for any excess emissions that occurred during the reporting period. "Excess emissions" means any calculated 30-day rolling average NO_x emission rated, as determined under Element No. 2, that exceeds the emission

limit contained in Element No. 1, and

B. Reports containing the information required to be recorded by Element No. 4.

6. The reports required to be submitted by Element No. 5 shall reflect the preceding semi-annual period. Semi-annual periods shall run from January 1 to June 30 and July 1 to December 31. If no deviation occurred during the semi-annual period, the report shall contain a negative declaration. Each report shall be submitted within 60 days following the end of the semi-annual period.

7. In lieu of the requirements in this NO_x RACT Plan, DuPont may comply with alternative requirements regarding emission limitations, equipment operation, test methods, monitoring, recordkeeping, or reporting, provided the following conditions are met:

A. The alternative requirements are established and incorporated into an operating permit pursuant to a Title V Operating Permit issuance, renewal, or significant permit revision process as established in Regulation 2.16,

B. The alternative requirements are consistent with the streamlining procedures and guidelines set forth in section II.A. of *White Paper Number 2 for Improved Implementation of the Part 70 Operating Permits Program*, March 5, 1996, U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards.

The overall effect of compliance with alternative requirements shall consider the effect on an intrinsic basis, such as pounds per million Btu,

C. The EPA has not objected to the issuance, renewal, or revision of the Title V Operating Permit, and either

D. If the public comment period preceded the EPA review period, then the District had transmitted any public comments concerning the alternative requirements to EPA with the proposed permit, or

E. If the EPA and public comment periods ran concurrently, then the District had transmitted any public comments concerning the alternative requirements to EPA no later than 5 working days after the end of the public comment period.

The District's determination of approval of any alternative requirements is not binding on EPA. Noncompliance with any alternative requirement established pursuant to the Title V Operating Permit process constitutes a violation of the NO_x RACT Plan.

JAMES E. BICKFORD
SECRETARY



APB
KY129
PAUL E. PATTON
GOVERNOR

COMMONWEALTH OF KENTUCKY
NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET
OFFICE OF THE SECRETARY
FRANKFORT, KENTUCKY 40601
TELEPHONE: (502) 564-3350
May 23, 2001

Mr. Stanley Meiburg
Acting Regional Administrator
U.S. EPA, Region 4
Atlanta Federal Center
61 Forsyth Street, S.W.
Atlanta, Georgia 30303-8960

Dear Mr. Meiburg:

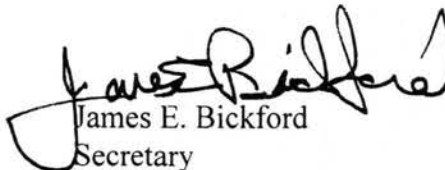
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GE Appliances
Kosmos Cement Company
Louisville Gas & Electric Company – Cane Run Generating Station
Louisville Gas & Electric Company – Mill Creek Generating Station
Louisville Medical Center Steam Plant
Oxy Vinyls, LP.
Texas Gas Transmission

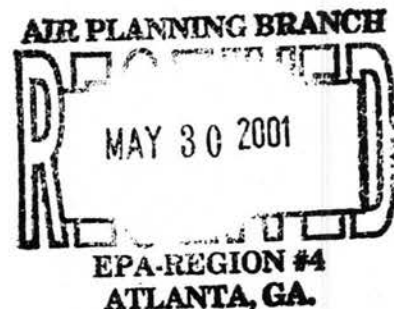
The ninth plan is new for the American Synthetic Rubber Company.

Your prompt consideration of this request is appreciated. If you have any questions or comments concerning this matter, please contact Lona Brewer at the Division for Air Quality at (502) 573-3382 or Jonathan Trout with the Air Pollution Control District of Jefferson County at (502) 574-7251.

Sincerely,


James E. Bickford
Secretary

JEB:mrl
Enclosures
cc: Kay Prince

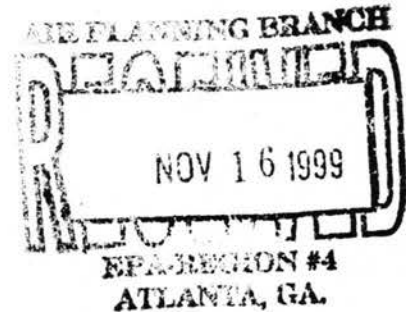


JAMES E. BICKFORD
SECRETARY



PAUL E. PATTON
GOVERNOR

COMMONWEALTH OF KENTUCKY
NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET
OFFICE OF THE SECRETARY
FRANKFORT KENTUCKY 40601
TELEPHONE: (502) 564-3350
November 12, 1999



Mr. John H. Hankinson, Jr.
Regional Administrator
U.S. EPA, Region IV
Atlanta Federal Center
61 Forsyth Street, S.W.
Atlanta, Georgia 30303

Dear Mr. Hankinson:


Enclosed are four copies of a request from the Air Pollution Control District of Jefferson County for a revision to the Jefferson County portion of the Kentucky State Implementation Plan.

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Louisville Gas & Electric Company – Mill Creek Generating Station
Louisville Medical Center Steam Plant
Oxy Vinyls, LP.
Rohm & Haas Company
Texas Gas Transmission

Your prompt consideration of this request is appreciated. If you have any questions or comments, please contact Mr. Arthur L. Williams at (502) 574-8689.

Sincerely,


James E. Bickford
Secretary

JEB:jt

Enclosures



AN EQUAL OPPORTUNITY EMPLOYER M/F/D

Air Pollution Control Board of Jefferson County Board Order - Amendment 1

This amended Board Order is issued by the Air Pollution Control Board of Jefferson County pursuant to the authority granted in Kentucky Revised Statutes Chapter 77 Air Pollution Control.

Company: Ford Louisville Assembly Plant (Ford LAP)
2000 Fern Valley Road
Louisville, Kentucky 40213

Background and Discussion

Regulation 6.42 *Reasonably Available Control Technology Requirements for Major Volatile Organic Compound- and Nitrogen Oxides-Emitting Facilities* requires the establishment and implementation of reasonably available control technology (RACT) for certain affected facilities that emit oxides of nitrogen (NO_x) and that are located at a major stationary source for NO_x. Section 4.4 requires that each determination of RACT approved by the Air Pollution Control District of Jefferson County (District) be submitted to the U.S. Environmental Protection Agency (EPA) as a site-specific revision of the Kentucky State Implementation Plan (SIP).

The initial Board Order was approved by the Board on November 8, 1999, and submitted to the EPA by the Kentucky Natural Resources and Environmental Protection Cabinet on November 12, 1999, as a site-specific revision of the Kentucky SIP. Subsequently, the EPA identified issues needing resolution before this NO_x RACT determination would be approved as part of the Kentucky SIP. This amended Board Order addresses those issues.

A Public Hearing on this amended Board Order was held before the Board on February 21, 2001. Based upon the evidence presented at that hearing, the Board determined that approval of this amended Board Order and submittal as a site-specific revision of the Kentucky SIP were appropriate.

Now therefore be it ordered that:

1. The attached NO_x RACT Plan - Amendment 1, applicable to Ford LAP, is approved by the District. Ford LAP shall comply with this plan.
2. Compliance with the attached NO_x RACT Plan - Amendment 1 shall be deemed compliance with the requirements of Regulation 6.42 section 1.2, section 1.3, Section 2 to the extent that this Section applies to section 4.3, section 4.3, and Section 5 to the extent that this Section applies to verification of compliance with the requirements pursuant to section 4.3.

3. This amended Board Order shall not be deemed or construed to be the result of any violation of any federal, state, or local statute, regulation, or ordinance for any purpose whatsoever.
4. Ford LAP has reviewed this amended Board Order and consents to all its requirements and terms.
5. The effective date of this amended Board Order and the attached NO_x RACT Plan - Amendment 1 is March 1, 2001.

Dated this 21st day of February, 2001.

Air Pollution Control Board
of Jefferson County

By: Robert W. Powell, M.D.
Robert W. Powell, M.D.
Chairman

Ford Louisville Assembly Plant

By: John Tankesley
John Tankesley
Plant Manager

Air Pollution Control District
of Jefferson County

By: Jesse M. Goldsmith
Jesse M. Goldsmith
Air Pollution Control Officer

Approved as to form and legality:
Air Pollution Control District
of Jefferson County

By: Gaylord B. Ballard
Gaylord B. Ballard
Attorney

NO_x RACT Plan - Amendment 1

1. The oxides of nitrogen (NO_x, expressed as NO₂) emission from each of Boiler #4 and Boiler #5 shall not exceed 0.20 pound per million Btu of heat input.
2. Ford Louisville Assembly Plant (Ford LAP) shall conduct an annual performance test for NO_x for each of Boiler #4 and Boiler #5. If the requirements of Regulation 6.42 *Reasonably Available Control Technology Requirements for Major Volatile Organic Compound- and Nitrogen Oxides-Emitting Facilities* section 5.1 are met, and subject to the annual performance test schedule reinstatement provision, performance testing may be done on a biennial schedule. Performance testing shall meet the following requirements:
 - A. Emissions concentrations and the mass determinations shall be obtained using Reference Methods of 40 CFR Part 60 Appendix A. The following methods shall be used:
 - (1) Method 1 or 1A, which furnishes guidance in site and traverse selection for sampling velocity at traverse points in stationary sources,
 - (2) Method 2, 2A, 2B, 2C, 2D, 2E, 2F, 2G, or 2H, which applies to measurements of gas volumetric flow rates,
 - (3) Method 3, 3A, 3B, or 3C, which is applicable for determining the concentrations of one or more of the following gases: carbon dioxide, O₂, CO, nitrogen, and methane,
 - (4) Method 4, which determines the moisture content in stack gases, and
 - (5) Method 7, 7A, 7B, 7C, 7D, or 7E, which provides the analytical method for determining the concentration of NO_x emissions from stationary sources.
 - B. The use of other Reference Methods that are added to 40 CFR Part 60 Appendix A, alternative tests, or modifications to the Reference Methods listed in NO_x RACT Plan Element (Element) No. 2.A. may be proposed by Ford LAP as part of the testing plan required by Element No. 2.D. Such methods may be used if approved in writing by the District.
 - C. Performance testing shall meet the requirements of Regulation 1.04 *Performance Tests* that are not addressed in this Element.
 - D. A notification of intent to conduct a performance test shall be submitted to the District at least 25 working days in advance of the projected starting date for the performance test. The notification shall include the proposed test methods to be used.
 - E. If a pre-test conference to discuss the proposed test methods is deemed necessary by the District, a pre-test conference shall be arranged by District personnel.
 - F. At least 10 working days' prior notice of the scheduled starting date for the performance test shall be provided to the District.
 - G. A performance test report shall be submitted to the District within 60 days of completion of performance testing. The report shall include the calculations used to determine emissions. The NO_x emission rate shall be expressed in both pounds per hour and pounds per million Btu formats. The raw data shall be retained by Ford LAP for a minimum of 5 years and made available to the District upon

request. Selected portions of the raw data used to calculate the emissions shall be included in the report in a format provided by the District.

3. Ford LAP shall, each year within 7 months prior to March 1, perform and make a record of the following non-routine boiler maintenance activities for Boiler #4 and Boiler #5:
 - A. Inspect the fuel combustion system and, as needed, clean or replace the components of the fuel combustion system,
 - B. Inspect the flame pattern for the boiler and make any needed adjustments to the fuel combustion system to optimize the flame pattern to minimize total emissions of NO_x and carbon monoxide (CO),
 - C. Inspect the combustion control system to determine whether the combustion control system is operating properly and the air-to-fuel ratio is correctly calibrated and make any needed system adjustments or replacements,
 - D. Adjust the air-to-fuel ratio to minimize excess air and maximize boiler efficiency, and
 - E. Inspect all other components of the boiler and make any needed adjustments or repairs to improve boiler efficiency.
4. Ford LAP shall include in each report pursuant to Element No. 8 a summary of the boiler maintenance activities required by Element No. 3 that occurred during the preceding semi-annual period.
5. Ford LAP shall, before March 1, 2001, submit to the District a written description of daily activities and procedures that may be conducted by the boiler operators to ensure optimum operating efficiency of Boiler #4 and Boiler #5.
6. Boiler #1, Boiler #2, and Boiler #3 shall comply with the following requirements:
 - A. No boiler shall have a monthly capacity factor greater than 10.0 % for any month during the period March 1 to October 31. The term "monthly capacity factor" means the ratio between the actual heat input to a boiler from fuel combusted during a month and the potential heat input to the boiler had it been operated for 24 hours per day for the number of days in the month at the maximum steady state design heat input capacity. The maximum heat input capacity provided by the manufacturer shall be used unless Ford LAP determines the maximum heat input capacity using the heat loss method described in sections 5 and 7.3 of the ASME *Power Test Codes* 4.1, and
 - B. No boiler shall combust a fuel other than natural gas, distillate oil, or residual oil.
7. Ford LAP shall make a record of the type and amount of fuel combusted during each day of operation of Boiler #1, Boiler #2, or Boiler #3 during the period March 1 to October 31. Ford LAP shall, at the end of each month during this period, calculate and record, for each of Boiler #1, Boiler #2, and Boiler #3, the monthly capacity factor. Each record shall be maintained for a minimum of 5 years and made available to the District upon request.
8. Ford LAP shall keep a record identifying all deviations from the requirements of this NO_x

Ford Louisville Assembly Plant

RACT Plan and shall submit to the District a written report of all deviations that occurred during the preceding semi-annual period. Semi-annual periods shall run from January 1 to June 30 and July 1 to December 31. The report shall contain the following information:

- A. The boiler number,
- B. The beginning and ending date of the reporting period,
- C. Identification of all periods during which a deviation occurred,
- D. A description, including the magnitude, of the deviation,
- E. If known, the cause of the deviation, and
- F. A description of all corrective actions taken to abate the deviation.

If no deviation occurred during the semi-annual period, the report shall contain a negative declaration. Each report shall be submitted within 60 days following the end of the semi-annual period.

9. In lieu of the requirements in this NO_x RACT Plan, Ford LAP may comply with alternative requirements regarding emission limitations, equipment operation, test methods, monitoring, recordkeeping, or reporting, provided the following conditions are met:
 - A. The alternative requirements are established and incorporated into an operating permit pursuant to a Title V Operating Permit issuance, renewal, or significant permit revision process as established in Regulation 2.16,
 - B. The alternative requirements are consistent with the streamlining procedures and guidelines set forth in section II.A. of *White Paper Number 2 for Improved Implementation of the Part 70 Operating Permits Program*, March 5, 1996, U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards. The overall effect of compliance with alternative requirements shall consider the effect on an intrinsic basis, such as pounds per million Btu,
 - C. The U.S. Environmental Protection Agency (EPA) has not objected to the issuance, renewal, or revision of the Title V Operating Permit, and either
 - D. If the public comment period preceded the EPA review period, then the District had transmitted any public comments concerning the alternative requirements to EPA with the proposed permit, or
 - E. If the EPA and public comment periods ran concurrently, then the District had transmitted any public comments concerning the alternative requirements to EPA no later than 5 working days after the end of the public comment period.

The District's determination of approval of any alternative requirements is not binding on EPA. Noncompliance with any alternative requirement established pursuant to the Title V Operating Permit process constitutes a violation of this NO_x RACT Plan.

History: Approved 11-8-99; effective 1-1-00; amended a1/2-21-01 effective 3-1-01.

JACKIE SWIGART
SECRETARY



JOHN Y. BROWN, JR.
GOVERNOR

COMMONWEALTH OF KENTUCKY
DEPARTMENT FOR NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION
OFFICE OF THE SECRETARY
FRANKFORT, KENTUCKY 40601
TELEPHONE (502) 564-3350
August 7, 1981

Mr. Charles R. Jeter
Regional Administrator
U. S. EPA, Region IV
345 Courtland Street, N.E.
Atlanta, Georgia 30365

AIR PROGRAMS
DIVISION
AUG 18 1981
EPA-REGION IV
ATLANTA, GA.

Dear Mr. Jeter:

In compliance with the Clean Air Act Amendments of 1977, a revision to the State Implementation Plan for the attainment and maintenance of the National Ambient Air Quality Standards as it applies to the General Electric Company in Jefferson County is hereby submitted to the U. S. Environmental Protection Agency. This revision has been prepared in accordance with 40 CFR 51 and the guidance documents issued by the U. S. Environmental Protection Agency.

This letter should serve to certify that all procedural requirements for adoption of this plan by the Commonwealth of Kentucky have been met. Opportunity for public participation and input has been provided through a public hearing (transcript attached). The revised emission limitations for the plant's two large appliance coating lines have been duly adopted by this department as per the provisions of Regulation 401 KAR 50:055, Section 6.

It is requested that the U. S. Environmental Protection Agency favorably consider the approval of this revision and publish same in the Federal Register. If you have any questions, please contact Mr. Norman E. Schell, Director, Division of Air Pollution Control.

Sincerely,

Jackie Swigart
Jackie Swigart
Secretary

JS:jz

Enclosures

cc: General Electric Company

all c.s. am
GENERAL ELECTRIC

**MAJOR APPLIANCE
BUSINESS GROUP**

LEGAL OPERATION

GENERAL ELECTRIC COMPANY, APPLIANCE PARK, LOUISVILLE, KENTUCKY 40225
Phone (502) 452-4311

July 8, 1981

Mr. Dalton Ivins
International Harvester
P. O. Box 37400
Louisville, KY 40233

Dear Mr. Ivins:

General Electric Company (GE) would like to lease from International Harvester (IH) until December 31, 1983, not more than 445 tons of the V.O.C. emission credits that IH currently has banked with the Air Pollution Control District of Jefferson County as indicated in the attached statement. GE seeks these emission credits in order to obtain governmental approvals permitting GE to operate a particular finish line without further modification. You have indicated, on behalf of IH, that IH will lease V.O.C. emission credits to GE until December 31, 1983 for \$60,000 in accordance with the following schedule:

| | <u>TONS</u> |
|------------------------|-------------|
| Jan. through Dec. 1982 | 445 |
| Jan. through Dec. 1983 | 280 |

Pending receipt of the final governmental approvals referred to above, GE wishes to assure the availability of the IH credits by obtaining hereby an option to lease the credits for \$5,000.

Now, therefore, in consideration of the sum of \$5,000 paid by GE, the receipt of which is hereby acknowledged, IH grants to GE the exclusive right, at GE's option, for a period of 180 days from the date hereof, to lease until December 31, 1983 for \$60,000 IH hydrocarbon emission credits, in accordance with the schedule above. If the option is exercised by GE within the time stated, the \$5,000 shall be applied to the cost of leasing the emission credits. Should GE choose to exercise this option, it shall so notify the undersigned representative of IH in writing and pay the balance of \$55,000 at that time.

It is further agreed that GE shall have the right, upon written notice to IH before 12/31/83 to lease up to 280 tons of IH V.O.C. emission credits between 12/31/83 and 1/1/85 for \$100.00 per ton. IH shall not use, lease, sell, transfer, or otherwise dispose of the 280 tons of V.O.C. emission credits without first notifying GE and permitting it a right of first refusal.

GENERAL  ELECTRIC

Mr. Dalton Ivins
July 8, 1981

Page Two

This is the final and entire agreement of the parties. If this accurately reflects our understanding, please so indicate by signing below.

Very truly yours,

INTERNATIONAL HARVESTER

BY:

D. S. Ivins

TITLE:

Manager Tech. Services
7/12/81

Att.

GENERAL ELECTRIC COMPANY

BY:

Vernon J. Orwicki

TITLE:

Manager, Plant Engng. & Energy Programs.
7/8/81

COMPLIANCE CONTROL PLAN & SCHEDULE
GENERAL ELECTRIC CO. - APPLIANCE PARK

BUILDING NO. 3

1. SYSTEM NAME: Koch Plastisol Prime and Finish Spray Permit applied for

2. CONTAMINANT:

3. COMPLIANCE TIMETABLE:

| | <u>PLANNED</u> | <u>ACTUAL</u> |
|--|----------------|---------------|
| a) Award control device contract | NA | |
| b) Initiate onsite construction/installation | NA | |
| c) Complete onsite construction/installation | NA | |
| d) Final compliance | 12/31/82 | |

4. ACTIONS PLANNED/METHOD OF COMPLIANCE:

The Koch plastisol prime and finish, and the Koch paint finish systems will be eliminated as a method of compliance. Development of an acceptable primer for plastisole tubs has not been successful. For this reason, the planned redesign of the plastic dishwasher tub has been accelerated. Once implemented, the plastisole dishwasher tub will be eliminated and compliance will not be necessary.

Unfortunately, the major redesign, the purchase and installation of production facilities to produce the newly designed dishwasher takes several years, the reason for a December, 1982, compliance date.

Actually emissions will be reduced gradually prior to the final compliance date. Plastisole tub production will decrease starting in January of 1982 at a rate of about 25% per quarter.

AIR POLLUTION CONTROL DISTRICT OF JEFFERSON COUNTY

DRAFT

914 East Broadway

Louisville, Kentucky 40204

BUBBLE PERMIT

Permit No. _____

CONDITIONAL

Permit Fee \$ 15.00
0873 Pt. 12 & 15

Issue Date _____ 19 ____

EIS Plant _____

Expiration Date _____ 19 ____

Permission is hereby given by the Air Pollution Control Board of the Air Pollution Control District of Jefferson County to:

Construct Operate Equipment: Process Control

located at General Electric Company, Building 3, Appliance Park
in accordance with plans and specifications on file with Air Pollution Control District.

Permit covers operation of the Koch Fluid Bed Plastisol System consisting
of two pre-heat ovens, a flocoat dip tank and tunnel seal.

Rated capacity 660 dishwasher racks/hr. Normal Oper. Hrs. per Yr. 3450

Fuels Used: Primary Natural Gas

Secondary _____

| Allowable Emissions | TSP | SO ₂ | HC | CO | NO _x | Other: | Basis: % Rated Capacity Hrs/Yr | |
|---------------------|-------|-----------------|-------|-------|-----------------|--------|--------------------------------|-------|
| | | | | | | | | |
| Lbs/Hr | _____ | _____ | _____ | _____ | _____ | _____ | 100 | 3450 |
| Tons/Yr | _____ | _____ | 6 | _____ | _____ | _____ | _____ | _____ |
| Actual Emissions | | | | | | | 100 | |
| Lbs/Hr | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| Tons/Yr | _____ | _____ | 40 | _____ | _____ | _____ | 100 | 3450 |

Control/Process Ref. 289-76, 290-76, 291-76, 313-74, 3D33-2,3,4, 3D37-3

Emission Bank Code Ref. _____

Bubble Ref. _____

Offsets _____

43101-002W 43101-007W

PSD _____

43101-006W _____

Applicant for Permit Keith Moser, Environmental Programs Manager Appl. Dated June 5, 1981

Address General Electric Co., Bldg. 1-312, Appliance Park, Louisville, KY
40225

Air Pollution Control Officer

AIR POLLUTION CONTROL DISTRICT OF JEFFERSON COUNTY

DRAFT

914 East Broadway BUBBLE Louisville, Kentucky 40204

PERMIT

Permit No. _____ **CONDITIONAL** Permit Fee \$ 15.00
 Issue Date _____ 19 ____ EIS Plant 0873 Pt. 19, 20
 Expiration Date _____ 19 ____

Permission is hereby given by the Air Pollution Control Board of the Air Pollution Control District of Jefferson County to:

Construct Operate Equipment: Process Control

located at General Electric Company, Building 3, Appliance Park
 in accordance with plans and specifications on file with Air Pollution Control District.

Permit covers operation of the Koch Prime and Finish Plastisol systems.
Emissions from this system are to be offset by emissions from
International Harvester Company equal to 357 tons per year.
(System consists of a spray booth & oven.)

Rated capacity 250 tubs & doors/hr. Normal Oper. Hrs. per Yr. 3450
 Fuels Used: Primary Natural Gas
 Secondary _____

| Allowable Emissions | Basis: % Rated Capacity Hrs/Yr | | | | | |
|---------------------|--------------------------------|-----------------|-------|-------|-----------------|--------|
| | TSP | SO ₂ | HC | CO | NO _x | Other: |
| Lbs/Hr | _____ | _____ | _____ | _____ | _____ | _____ |
| Tons/Yr | _____ | _____ | 63 | _____ | _____ | _____ |
| Actual Emissions | | | | | | |
| Lbs/Hr | _____ | _____ | _____ | _____ | _____ | _____ |
| Tons/Yr | _____ | _____ | 420 | _____ | _____ | _____ |

Control/Process Ref. 241-79, 242-79, 3C41-2,3,5,6,7, 3C43-2

Offsets Emission Bank Code Ref. _____ Bubble Ref. 43101-002W
 PSD _____ 43101-006W 43101-007W

Applicant for Permit Keith Moser, Environmental Program Manager Appl. Dated June 5, 1981
 Address General Electric Company, Bldg. 1-312, Louisville, KY 40225

Air Pollution Control Officer

GENERAL  ELECTRIC

GENERAL ELECTRIC COMPANY, APPLIANCE PARK, LOUISVILLE, KENTUCKY 40225
Phone (502) 452-4311

MAJOR
APPLIANCE
BUSINESS
GROUP

June 5, 1981

Mr. Michael T. DeBusschere
Air Pollution Control Officer
Air Pollution Control District
of Jefferson County
914 East Broadway
Louisville, Kentucky 40204

RECEIVED

JUN 05 1981

A.P.C.D.

Subject: Koch Plastisol Prime and Koch Wire Rack Prime Systems,
Building No. 3

Dear Mike:

This is a formal request that the District approve a change in our compliance plan and schedule involving the subject large appliance coating systems.

The present plan consists of changing from a high solvent content coating to a coating meeting the 2.8 lbs/gal., excluding water, rule as allowed in District Regulation 6.16.

Although we are on schedule with the present plan, manufacturing operations people have a low confidence level that changing coatings will assure continued high quality finishes having a reasonably long life on dishwasher tubs, doors, and racks. The company must be certain of producing dishwashers of excellent quality prior to the introduction of a new model which displaces the plastisole products.

At this time there is only one (1) supplier for the water based primer and it has only been produced in small laboratory type quantities. As that supplier has not shown that he can produce a quality primer in production quantities, the risk of switching to water base primer is greater. Further, testing of laboratory produced coatings indicates that metal preparation operations prior to coating application must be perfect if the coating is to permanently adhere, preventing rust. The metal cleaning process, however, has not proven to be foolproof. These factors have led to a business decision to spend \$1,500,000 to comply with emission limitation standards by installing an incinerator. This will permit continuation of a process that produces high quality products while reducing emissions as required.

Mr. Michael T. DeBusschere

-3-

June 5, 1981

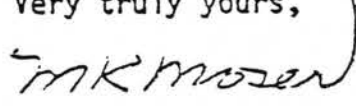
Consideration of applying controls as required by criteria five is documented above.

Criteria six is addressed in Attachment 4 which must serve pending negotiation of a firm agreement.

Production of the plastisoled dishwasher will be discontinued December 31, 1983. Production and resulting hydrocarbon emissions will gradually decrease over the two (2) year period, as a new model is introduced. Production of wire racks will continue.

Permission to use the bubble policy in this case supports the intent of the policy in that goals are met toward meeting air quality standards with the flexibility of economic choice. Accordingly, implementation of the bubble is in the best interest of the entire community.

Very truly yours,



M. K. Moser
Environmental Programs Manager
AP 1 - 312
(502) 452-3934

MKM/mt

Attachments

OF JEFFERSON COUNTY

914 East Broadway CONDITIONAL

Louisville, Kentucky 40204

BY _____
 JAN 6 1981
 AIR POLLUTION CONTROL DISTRICT
 OF JEFFERSON COUNTY
 15:00

PERMIT

Permit No. 242-79

Permit Fee \$ _____

Issue Date Oct. 19 80

EIS Plant 873 Pt. 20

Expiration Date Oct. 19 81

Permission is hereby given by the Air Pollution Control Board of the Air Pollution Control District Jefferson County to:

Construct Operate Equipment: Process Control

located at G.E. Appliance Park, Building #3, Louisville, Ky. 40225

in accordance with plans and specifications on file with the Air Pollution Control District.

Permit covers operation a prime bake oven which is part of the Koch Plastisol System.

Rated capacity 250 Tubs/hr & 250 doors/hr Normal Oper. Hrs. per Yr. 3450

Fuels Used: Primary Natural gas - 5.4 mm Btu/hr.

Secondary _____

| Allowable Emissions | TSP | SO ₂ | HC | CO | NO _x | Other: | Basis: % Rated Capacity |
|---------------------|-------|-----------------|-------|-------|-----------------|--------|-------------------------|
| lbs/Hr | _____ | _____ | 18 | _____ | _____ | _____ | 100 |
| Tons/Yr | _____ | _____ | 31.5 | _____ | _____ | _____ | n |
| Actual Emissions | _____ | _____ | 120 | _____ | _____ | _____ | n |
| lbs/Hr | _____ | _____ | 209.8 | _____ | _____ | _____ | n |
| Tons/Yr | _____ | _____ | _____ | _____ | _____ | _____ | n |

Control/Process Ref. 3C43-2

Offsets Emission Bank Code Ref. _____ Bubble Ref. _____
 PSD _____ _____

Applicant for Permit Keith Moser, Manager Envir. Engineering Appl. Dated _____

Address Same As Above

W. R. Busscher

Air Pollution Control Officer

OF JEFFERSON COUNTY

914 East Broadway

Louisville, Kentucky 40204/11 6 1981

CONDITIONAL PERMIT

BY _____

AIR POLLUTION CONTROL DISTRICT
OF JEFFERSON COUNTY

Permit Fee \$ 15.00

Permit No. 290-76

Issue Date Oct. 19 80

Expiration Date Oct. 19 81

EIS Plant 873 Pt. 12

Permission is hereby given by the Air Pollution Control Board of the Air Pollution Control District of Jefferson County to:

Construct Operate Equipment: Process Control

located at General Electric Co., Appliance Park Bldg. 3, Louisville, KY 40
in accordance with plans and specifications on file with Air Pollution Control District.

Permit covers operation of the first or low temperature pre-heat oven which
is part of the Koch Fluid Bed Plastisol System.

Rated capacity _____ Normal Oper. Hrs. per Yr. 2,000

Fuels Used: Primary Natural Gas
Secondary _____

| Allowable Emissions | Basis: % Rated Capacity Hrs/Yr | | | | | |
|---------------------|--------------------------------|-------|-------|-------|-------|--------|
| | TSP | SO2 | HC | CO | NOx | Other: |
| Lbs/Hr | _____ | _____ | _____ | _____ | _____ | _____ |
| Tons/Yr | _____ | _____ | _____ | _____ | _____ | _____ |
| Actual Emissions | See 289-76 for emissions | | | | | |
| Lbs/Hr | _____ | _____ | _____ | _____ | _____ | _____ |
| Tons/Yr | _____ | _____ | _____ | _____ | _____ | _____ |

Control/Process Ref. 289-76 through 295-76, 3033-2, 3, 4

Emission Bank Code Ref. _____

Bubble Ref. _____

Offsets _____

PSD _____

Applicant for Permit Keith Moser, Manager
Envir. Engineering Appl. Dated _____

Address General Electric Co., Appliance Park Bldg. 3, Louisville, KY 40

W. J. Buscher
Air Pollution Control Officer

AIR POLLUTION CONTROL DISTRICT BOARD
OF JEFFERSON COUNTY

914 East Broadway

Louisville, Kentucky 40204

CONDITIONAL
PERMIT

BY _____
AIR POLLUTION CONTROL DISTRICT
OF JEFFERSON COUNTY

Permit No. 313-74

Issue Date Oct. 19 80

Expiration Date Oct. 19 81

Permit Fee \$ 15.00

EIS Plant 873 Pt. 15

Permission is hereby given by the Air Pollution Control Board of the Air Pollution Control District of Jefferson County to:

Construct Operate Equipment: Process Control

located at General Electric Co., Appliance Park Bldg. 3, Louisville, KY 4
in accordance with plans and specifications on file with Air Pollution Control District.

Permit covers operation of a tunnel seal used in the Koch Fluid Bed Plastiso
System immediately following the Pre-heat oven.

Rated capacity 900 scfm Normal Oper. Hrs. per Yr. 2000

Fuels Used: Primary _____
Secondary _____

| Allowable Emissions | TSP | SO2 | HC | CO | NOx | Other: | Basis: % Rated Capacity Hrs/Yr | |
|---------------------|-------|-------|-------------|-------|-------|--------|--------------------------------|-------------|
| | | | | | | | - | 2000 |
| Lbs/Hr | _____ | _____ | _____ | _____ | _____ | _____ | - | _____ |
| Tons/Yr | _____ | _____ | <u>3.0</u> | _____ | _____ | _____ | - | <u>2000</u> |
| Actual Emissions | | | | | | | | |
| Lbs/Hr | _____ | _____ | _____ | _____ | _____ | _____ | - | _____ |
| Tons/Yr | _____ | _____ | <u>20.0</u> | _____ | _____ | _____ | - | <u>2000</u> |

Control/Process Ref. 291-76, 3037-3

Emission Bank Code Ref. _____

Bubble Ref. _____

Offsets _____

PSD _____

Keith Moser, Manager
Envir. Engineering

Applicant for Permit _____ Appl. Dated _____

Address General Electric Co., Appliance Park Bldg. 3, Louisville, KY 4

W. R. Busscher
Air Pollution Control Officer

BANKED EMISSIONS LEDGER

CLOSED

1. Pollutant Description Hydrocarbons Banking Permit #374-80
 2. Deposit Code 4 3 1 0 1 - 0 0 7
 - 3.a. Date of Deposit 12/11/80 b. Closing Date _____
 - 4.a. Source of Banked Emissions International Harvester Plant
 - b. Address 5005 Crittenden Dr., Louisville, KY 40221
 - c. Plant EIS 0255
 - 5.a. Description of process generating banked emissions and permit nos. 8 paint booths, 1 dip tank and 2 degreasers as specified in Table I attached.
 - b. What caused emissions to be available for banking?
The equipment mentioned above was shut down.
-
- | | | |
|--|------------|---------|
| 6. Banked emissions prior to discounting | <u>122</u> | Tons/yr |
| 7. Initial discount | | Tons/yr |
| 8. Balance (subtract Line 7 from Line 6) | <u>122</u> | Tons/yr |
- For further explanation see Note nos: 1

First Withdrawal

9. Date _____ Buyer _____ Permit No. _____
 10. Emissions from source requiring offsets (but before applying offset ratio) _____ Tons/yr
 11. Offset ratio _____:1
 12. Offset emissions (multiply Line 10 by Line 11) _____ Tons/yr
 13. Balance (subtract Line 12 from Line 8) _____ Tons/yr
- For further explanation, see Note nos. _____

Second Withdrawal

14. Date _____ Buyer _____ Permit No. _____
 15. Emissions from source requiring offsets (but before applying offset ratio) _____ Tons/yr
 16. Offset ratio _____:1
 17. Offset emissions (multiply Line 15 by Line 16) _____ Tons/yr
 18. Balance (subtract Line 17 from Line 13) _____ Tons/yr
- For further explanation, see Note nos. _____

Third Withdrawal

19. Date _____ Buyer _____ Permit No. _____
 20. Emissions from source requiring offsets (but before applying offset ratio) _____ Tons/yr
 21. Offset ratio _____:1
 22. Offset emissions (multiply Line 21 by Line 22) _____ Tons/yr
 23. Balance (subtract Line 23 from Line 19) _____ Tons/yr
- Enter here and on Line 24, page 2
For further explanation, see Note nos. _____

AIR POLLUTION CONTROL DISTRICT OF JEFFERSON COUNTY

914 East Broadway

Louisville, Kentucky 40204

BANKING PERMIT

PAID *Walt*

BY _____

Coby
10 1981

AIR POLLUTION CONTROL DISTRICT
OF JEFFERSON COUNTY

Permit Fee \$ 15.00

Permit No. 374-80
 Issue Date Dec. 11 19 80
 Expiration Date N/A 19 _____

EIS Plant 0255 Pt. _____

Permission is hereby given by the Air Pollution Control Board of the Air Pollution Control District of Jefferson County to:

- Construct
 Operate
 Equipment: Process
 Control

located at International Harvester Co., Louisville Plant, 5005 Crittenden Dr
 in accordance with plans and specifications on file with Air Pollution Control District, Louisville, KY

Permit covers DEPOSIT OF PARTICULATE AND HYDROCARBON EMISSIONS INTO EMISSION
BANK. This offset credit has been obtained by shutting down various paint
degreasing, machining, abrasive cleaning, grinding and washing operations
as specified in Table I attached and made a part of this permit.

*Emissions based on the peak production figures since 1976.

Rated capacity _____ Normal Oper. Hrs. per Yr. 8-16/5/46.4

Fuels Used: Primary _____

Secondary _____

| Allowable Emissions | Basis: % Rated Capacity Hrs/Yr | | | | | |
|---------------------|--------------------------------|-------|------------|-------|-------|-------|
| | TSP | SO2 | HC | CO | NOx | Other |
| Lbs/Hr | _____ | _____ | _____ | _____ | _____ | _____ |
| Tons/Yr | <u>26.4</u> | _____ | <u>N/A</u> | _____ | _____ | _____ |
| Actual Emissions | | | | | | |
| Lbs/Hr | _____ | _____ | _____ | _____ | _____ | _____ |
| Tons/Yr | <u>10.9</u> | _____ | <u>122</u> | _____ | _____ | _____ |

Control/Process Ref. _____

| | | |
|---|-------------------------|-------------|
| | Emission Bank Code Ref. | Bubble Ref. |
| <input checked="" type="checkbox"/> Offsets | <u>11101-006D</u> _____ | _____ |
| <input type="checkbox"/> PSD | <u>43101-007D</u> _____ | _____ |

Applicant for Permit J. L. Detherage, Plt. Eng. Appl. Dated 5/15/80

Address Same as above

Walter Busch
 Air Pollution Control Officer

BANKED EMISSIONS LEDGER

ACTIVE

CLOSED

1. Pollutant Description Hydrocarbon Banking Permit #20-80
2. Deposit Code 4 3 1 0 1 - 0 0 6
3. a. Date of Deposit 1/17/80 b. Closing Date _____
4. a. Source of Banked Emissions International Harvester Foundry
 b. Address 5005 Crittenden Dr., Louisville, Ky. 40221
 c. Plant EIS 0097
5. a. Description of process generating banked emissions and permit nos.
Shell Core Line, Core Lines #1, #2, #5, & #6.

- b. What caused emissions to be available for banking?
Shutdown of all equipment listed above since December 1977.

| | | | |
|----|---------------------------------------|-------------|---------|
| 6. | Banked emissions prior to discounting | <u>45.0</u> | Tons/yr |
| 7. | Initial discount | _____ | Tons/yr |
| 8. | Balance (subtract Line 7 from Line 6) | _____ | Tons/yr |

For further explanation see Note nos: 1

First Withdrawal

9. Date _____ Buyer _____ Permit No. _____
 10. Emissions from source requiring offsets (but before applying offset ratio) _____ Tons/yr
 11. Offset ratio _____:1
 12. Offset emissions (multiply Line 10 by Line 11) _____ Tons/yr
 13. Balance (subtract Line 12 from Line 8) _____ Tons/yr
- For further explanation, see Note nos. _____

Second Withdrawal

14. Date _____ Buyer _____ Permit No. _____
 15. Emissions from source requiring offsets (but before applying offset ratio) _____ Tons/yr
 16. Offset ratio _____:1
 17. Offset emissions (multiply Line 15 by Line 16) _____ Tons/yr
 18. Balance (subtract Line 17 from Line 13) _____ Tons/yr
- For further explanation, see Note nos. _____

Third Withdrawal

19. Date _____ Buyer _____ Permit No. _____
 20. Emissions from source requiring offsets (but before applying offset ratio) _____ Tons/yr
 21. Offset ratio _____:1
 22. Offset emissions (multiply Line 21 by Line 20) _____ Tons/yr
 23. Balance (subtract Line 22 from Line 19) _____ Tons/yr
- Enter here and on Line 24, page 2 _____ Tons/yr
- For further explanation, see Note nos. _____

AIR POLLUTION CONTROL DISTRICT OF JEFFERSON COUNTY

914 East Broadway

BANKING

Louisville, Kent

PAID

BY _____

FEB 22 1980

AIR POLLUTION CONTROL DISTRICT
OF JEFFERSON COUNTY

PERMIT

Permit Fee \$ _____

Permit No. 20-80

Issue Date 2-20 1980

EIS Plant 0097 Pt. _____

Expiration Date _____ 19 _____

Permission is hereby given by the Air Pollution Control Board of the Air Pollution Control District of Jefferson County to:

Construct Operate Equipment: Process Control

located at International Harvester Foundry, 5005 Crittenden Dr., Lou., Ky. 402
in accordance with plans and specifications on file with the Air Pollution Control District.

Permit covers DEPOSIT OF PARTICULATE AND HYDROCARBON EMISSIONS INTO EMISSIONS

BANK. This offset credit has been obtained by shutting down various foundr

operations as defined in Table 1 attached and made a part hereof of this

ermit. *Allowable emissions overridden by lower potential emissions for t
core lines and the dust blowoff station.

**Hydrocarbon emissions based on actual emissions in 1977.

Rated capacity various Normal Oper. Hrs. per Yr. 3776

Fuels Used: Primary _____

Secondary _____

| Allowable Emissions | Basis: $\frac{1}{2}$ Rated Capacity Hr | | | | | |
|---------------------|--|-----------------|---------------|-------|-----------------|--------|
| | TSP | SO ₂ | HC | CO | NO _x | Other: |
| Lbs/Hr | <u>403.4*</u> | _____ | <u>N/A</u> | _____ | _____ | _____ |
| Tons/Yr | <u>761.6*</u> | _____ | <u>N/A</u> | _____ | _____ | _____ |
| Actual Emissions | | | | | | |
| Lbs/Hr | <u>97.7</u> | _____ | <u>23.8**</u> | _____ | _____ | _____ |
| Tons/Yr | <u>184.4</u> | _____ | <u>45.0**</u> | _____ | _____ | _____ |

Control/Process Ref. _____

Offsets Emission Bank Code Ref. 11101-0020 Bubble Ref. _____
 PSD 43101-0060 _____

Applicant for Permit Joseph F. Mavri Appl. Dated 1/17/80
 Address 5005 Crittenden Dr., Louisville, Ky. 40221

BANKED EMISSIONS LEDGER

ACTIVE

CLOSED

1. Pollutant Description Paint solvent vapors Permit no. 169-79
2. Deposit Code 4 3 1 0 1 - 0 0 2
- 3.a. Date of Deposit October 25, 1979 b. Closing Date _____
- 4.a. Source of Banked Emissions International Harvester Co., Louisville
 b. Address Foundry, 5005 Crittenden Drive, Louisville, Ky. 40221
 c. Plant EIS 0097
- 5.a. Description of process generating banked emissions and permit nos.
Spra-Conn Painting System, Touch Up Paint Booth & Paint Dip
Room.
- b. What caused emissions to be available for banking?
The facilities mentioned above have been shut down.

| | | |
|--|------------|---------|
| 6. Banked emissions prior to discounting | <u>384</u> | Tons/yr |
| 7. Initial discount | _____ | Tons/yr |
| 8. Balance (subtract Line 7 from Line 6) | _____ | Tons/yr |

For further explanation see Note nos. _____

First Withdrawal

9. Date 10/1/79 Buyer Pro-Kote, Inc. Permit No. 237-79
 10. Emissions from source requiring offsets (but before applying offset ratio) 74 Tons/yr
 11. Offset ratio 1.1:1
 12. Offset emissions (multiply Line 10 by Line 11) 81 Tons/yr
 13. Balance (subtract Line 12 from Line 8) 303 Tons/yr
- For further explanation, see Note nos. _____

Second Withdrawal

14. Date _____ Buyer _____ Permit No. _____
 15. Emissions from source requiring offsets (but before applying offset ratio) _____ Tons/yr
 16. Offset ratio _____:1
 17. Offset emissions (multiply Line 15 by Line 16) _____ Tons/yr
 18. Balance (subtract Line 17 from Line 13) _____ Tons/yr
- For further explanation, see Note nos. _____

Third Withdrawal

19. Date _____ Buyer _____ Permit No. _____
 20. Emissions from source requiring offsets (but before applying offset ratio) _____ Tons/yr
 21. Offset ratio _____:1
 22. Offset emissions (multiply Line 21 by Line 20) _____ Tons/yr
 23. Balance (subtract Line 22 from Line 19) _____ Tons/yr
- Enter here and on Line 24, page 2 _____ Tons/yr
- For further explanation, see Note nos. _____

AIR POLLUTION CONTROL DISTRICT OF JEFFERSON COUNTY

914 East Broadway

BANKING

Louisville, Kentucky 40204

PERMIT

PAID

BY _____

NOV 16 1979

AIR POLLUTION CONTROL DISTRICT
OF JEFFERSON COUNTY

EIS Plant No. 0097 Pt. 42

Permit No. 169 -79

Issue Date Oct. 25 19 79

Expiration Date N/A 19

Permission is hereby given by the Air Pollution Control Board of the Air Pollution Control District of Jefferson County to:

Construct
 Operate
 Equipment: Process
 Control

located at International Harvester Co., Louisville Foundry, 5005 Crittenden D
 in accordance with plans and specifications on file with the Air Pollution Control District.
Louisville, Ky. 40221

Permit covers DEPOSIT OF HYDROCARBON EMISSIONS INTO EMISSIONS BANK.

This offset credit has been obtained by shutting down the Spra-Conn
 Painting System & Touch Up Booth and the Paint Dip Room.

*Actual emissions based on 1976 production rate (which was representative
 full production) and the 1978 operating hours but the allowable emissions
 cutoff was overriding for the Spra-conn System & Touch Up Booth.

Rated capacity 44 tons/hr. of castings Normal Oper. Hrs. per yr. 3712

Fuels Used: Primary _____

Secondary _____

| Allowable Emissions | BANK | | | | | | Basis: % Rated Capacity Hrs |
|---------------------|-------|-----------------|-----|-------|-----------------|--------|-----------------------------|
| | TSP | SO ₂ | HC | CO | NO _x | Other: | |
| Lbs/Hr | _____ | _____ | 375 | _____ | _____ | _____ | 100 |
| Tons/Yr | _____ | _____ | 696 | _____ | _____ | _____ | 100 3 |
| Actual Emissions | | | | | | | |
| Lbs/Hr | _____ | _____ | 207 | _____ | _____ | _____ | 100 |
| Tons/Yr | _____ | _____ | 384 | _____ | _____ | _____ | 100 * 37 |

Control/Process Ref. _____

Offsets Emission Bank Code Ref. 43101-002 D Bubble Ref. _____
 PSD _____ _____

Applicant for Permit J.F. Mavri, Manager, Mfg. Engineering Appl. Dated 9/20/79

Address Same As Above

W. W. Buscher

AIR POLLUTION CONTROL DISTRICT OF JEFFERSON COUNTY

914 East Broadway BANKING Louisville, Kent 0097

PAID

BY _____

FEB 22 1980

AIR POLLUTION CONTROL DISTRICT
OF JEFFERSON COUNTY

PERMIT

Permit No. 20-80
 Issue Date 2-20 1980
 Expiration Date _____ 19____
 EIS Plant 0097 Pt. _____

Permission is hereby given by the Air Pollution Control Board of the Air Pollution Control District of Jefferson County to:

Construct Operate Equipment: Process Control

located at International Harvester Foundry, 5005 Crittenden Dr., Lou., Ky. 40221
 in accordance with plans and specifications on file with the Air Pollution Control District.

Permit covers DEPOSIT OF PARTICULATE AND HYDROCARBON EMISSIONS INTO EMISSIONS BANK. This offset credit has been obtained by shutting down various foundry

operations as defined in Table 1 attached and made a part hereof of this

permit. *Allowable emissions overridden by lower potential emissions for the core lines and the dust blowoff station.
 **Hydrocarbon emissions based on actual emissions in 1977.

Rated capacity various Normal Oper. Hrs. per Yr. 3776

Fuels Used: Primary _____
 Secondary _____

| Allowable Emissions | Basis: % Rated Capacity Hrs. | | | | | |
|---------------------|------------------------------|-----------------|---------------|-------|-----------------|-----------------|
| | TSP | SO ₂ | HC | CO | NO _x | Other: |
| Lbs/Hr | <u>403.4*</u> | _____ | <u>N/A</u> | _____ | _____ | <u>100</u> |
| Tons/Yr | <u>761.6*</u> | _____ | <u>N/A</u> | _____ | _____ | <u>100 3776</u> |
| Actual Emissions | | | | | | |
| Lbs/Hr | <u>97.7</u> | _____ | <u>23.8**</u> | _____ | _____ | <u>100</u> |
| Tons/Yr | <u>184.4</u> | _____ | <u>45.0**</u> | _____ | _____ | <u>100 3776</u> |

Control/Process Ref. _____

Offsets Emission Bank Code Ref. 11101-002D Bubble Ref. _____
 PSD 43101-006D _____

Applicant for Permit Joseph F. Mavri Appl. Dated 1/17/80
 Address 5005 Crittenden Dr., Louisville, Ky. 40221

W. H. Rusch

JEFFERSON COUNTY

914 East Broadway

BANKING

Louisville, Kentucky 40204

PERMIT

PAID

BY _____

NOV 16 1979

AIR POLLUTION CONTROL DISTRICT

Permit No. 0097

OF JEFFERSON COUNTY

Pe. 42

Permit No. 169 -79

Issue Date Oct. 25 19 79

Expiration Date N/A 19

Permission is hereby given by the Air Pollution Control Board of the Air Pollution Control District Jefferson County to:

Construct Operate Equipment: Process Control

located at International Harvester Co., Louisville Foundry, 5005 Crittenden D
in accordance with plans and specifications on file with the Air Pollution Control District.
Louisville, Ky. 40221

Permit covers DEPOSIT OF HYDROCARBON EMISSIONS INTO EMISSIONS BANK.

This offset credit has been obtained by shutting down the Spra-Conn
Painting System & Touch Up Booth and the Paint Dip Room.

*Actual emissions based on 1976 production rate (which was representative
full production) and the 1978 operating hours but the allowable emissions
cutoff was overriding for the Spra-conn System & Touch Up Booth.

Rated capacity 44 tons/hr. of castings Normal Oper. Hrs. per Yr. 3712

Fuels Used: Primary _____

Secondary _____

| Allowable Emissions | BANK | | | | | | Basis: % Rated Capacity Hrs |
|---------------------|-------|-----------------|-----|-------|-----------------|--------|-----------------------------|
| | TSP | SO ₂ | HC | CO | NO _x | Others | |
| Lbs/Hr | _____ | _____ | 375 | _____ | _____ | _____ | 100 |
| Tons/Yr | _____ | _____ | 696 | _____ | _____ | _____ | 100 3 |
| Actual Emissions | | | | | | | |
| Lbs/Hr | _____ | _____ | 207 | _____ | _____ | _____ | 100 |
| Tons/Yr | _____ | _____ | 384 | _____ | _____ | _____ | 100 * 37 |

Control/Process Ref. _____

Offsets

Emission Bank Code Ref. 43101-002 D

Bubble Ref. _____

PSD

Applicant for Permit J.F. Mavri, Manager, Mfg. Engineering Appl. Dated 9/20/79

Address Same As Above

W. R. Buscher

Air Pollution Control Officer

AIR POLLUTION CONTROL DISTRICT OF JEFFERSON COUNTY

914 East Broadway

Louisville, Kentucky 40204

BANKING PERMIT

PAID *Witt*

BY _____

Cohen

3/11 16 1981

AIR POLLUTION CONTROL DISTRICT,
OF JEFFERSON COUNTY

Permit Fee \$ 15.00

Permit No. 374-80
 Issue Date Dec. 11 19 80
 Expiration Date N/A 19

EIS Plant 0255 Pt.

Permission is hereby given by the Air Pollution Control Board of the Air Pollution Control District of Jefferson County to:

Construct Operate Equipment: Process Control

located at International Harvester Co., Louisville Plant, 5005 Crittenden Dr
in accordance with plans and specifications on file with Air Pollution Control District, Louisville, KY 4

Permit covers DEPOSIT OF PARTICULATE AND HYDROCARBON EMISSIONS INTO EMISSIONS
BANK. This offset credit has been obtained by shutting down various pair
degreasing, machining, abrasive cleaning, grinding and washing operations
as specified in Table I attached and made a part of this permit.

*Emissions based on the peak production figures since 1976.

Rated capacity _____ Normal Oper. Hrs. per Yr. 8-16/5/46.4

Fuels Used: Primary _____
 Secondary _____

| Allowable Emissions | | | | | | | Basis: % Rated Capacity Hrs/Yr |
|---------------------|-------------|-------|------------|-------|-------|-------|--------------------------------|
| | TSP | SO2 | HC | CO | NOx | Other | |
| Lbs/Hr | _____ | _____ | _____ | _____ | _____ | _____ | * |
| Tons/Yr | <u>26.4</u> | _____ | <u>N/A</u> | _____ | _____ | _____ | * |
| Actual Emissions | | | | | | | |
| Lbs/Hr | _____ | _____ | _____ | _____ | _____ | _____ | * |
| Tons/Yr | <u>10.9</u> | _____ | <u>122</u> | _____ | _____ | _____ | * |

Control/Process Ref. _____

| | | |
|---|-------------------------|-------------|
| | Emission Bank Code Ref. | Bubble Ref. |
| <input checked="" type="checkbox"/> Offsets | <u>11101-006D</u> | _____ |
| <input type="checkbox"/> PSD | <u>43101-007D</u> | _____ |

Applicant for Permit J. L. Detherage, Plt. Eng. Appl. Dated 5/15/80

Address Same as above

W. H. Busch

Air Pollution Control Officer

BANKED EMISSIONS LEDGER

CLOSED

1. Pollutant Description Hydrocarbons Banking Permit #374-80
 2. Deposit Code 4 3 1 0 1 - 0 0 7
 - 3.a. Date of Deposit 12/11/80 b. Closing Date _____
 - 4.a. Source of Banked Emissions International Harvester Plant
 - b. Address 5005 Crittenden Dr., Louisville, KY 40221
 - c. Plant EIS 0255
 - 5.a. Description of process generating banked emissions and permit nos. 8 paint booths, 1 dip tank and 2 degreasers as specified in Table I attached.
 - b. What caused emissions to be available for banking?
The equipment mentioned above was shut down.
-
- | | | |
|--|------------|---------|
| 6. Banked emissions prior to discounting | <u>122</u> | Tons/yr |
| 7. Initial discount | | Tons/yr |
| 8. Balance (subtract Line 7 from Line 6) | <u>122</u> | Tons/yr |
- For further explanation see Note nos: 1

First Withdrawal

9. Date _____ Buyer _____ Permit No. _____
 10. Emissions from source requiring offsets (but before applying offset ratio) _____ Tons/yr
 11. Offset ratio _____:1
 12. Offset emissions (multiply Line 10 by Line 11) _____ Tons/yr
 13. Balance (subtract Line 12 from Line 8) _____ Tons/yr
- For further explanation, see Note nos. _____

Second Withdrawal

14. Date _____ Buyer _____ Permit No. _____
 15. Emissions from source requiring offsets (but before applying offset ratio) _____ Tons/yr
 16. Offset ratio _____:1
 17. Offset emissions (multiply Line 15 by Line 16) _____ Tons/yr
 18. Balance (subtract Line 17 from Line 13) _____ Tons/yr
- For further explanation, see Note nos. _____

Third Withdrawal

19. Date _____ Buyer _____ Permit No. _____
 20. Emissions from source requiring offsets (but before applying offset ratio) _____ Tons/yr
 21. Offset ratio _____:1
 22. Offset emissions (multiply Line 21 by Line 20) _____ Tons/yr
 23. Balance (subtract Line 22 from Line 19) _____ Tons/yr
- Enter here and on Line 24, page 2 _____ Tons/yr
- For further explanation, see Note nos. _____

AIR POLLUTION CONTROL DISTRICT OF JEFFERSON COUNTY

914 East Broadway

Louisville, Kentucky 40204

BANKING PERMIT

| | |
|---|-------------|
| PAID | <i>Witt</i> |
| BY | <i>cash</i> |
| 411019810 | |
| AIR POLLUTION CONTROL DISTRICT
OF JEFFERSON COUNTY | |
| Permit Fee \$ <u>15.00</u> | |

Permit No. 374-80
 Issue Date Dec. 11 19 80
 Expiration Date N/A 19

EIS Plant 0255 Pt.

Permission is hereby given by the Air Pollution Control Board of the Air Pollution Control District of Jefferson County to:

- Construct
 Operate
 Equipment: Process
 Control

located at International Harvester Co., Louisville Plant, 5005 Crittenden Dr.
 in accordance with plans and specifications on file with Air Pollution Control District, Louisville, KY
 Permit covers DEPOSIT OF PARTICULATE AND HYDROCARBON EMISSIONS INTO EMISSION
BANK. This offset credit has been obtained by shutting down various part
degreasing, machining, abrasive cleaning, grinding and washing operation
as specified in Table I attached and made a part of this permit.

*Emissions based on the peak production figures since 1976.

Rated capacity _____ Normal Oper. Hrs. per Yr. 8-16/5/46.4

Fuels Used: Primary _____
 Secondary _____

| Allowable Emissions | Basis: % Rated Capacity Hrs/Yr | | | | | |
|---------------------|--------------------------------|-------|------------|-------|-------|-------|
| | TSP | SO2 | HC | CO | NOx | Other |
| Lbs/Hr | _____ | _____ | _____ | _____ | _____ | _____ |
| Tons/Yr | <u>26.4</u> | _____ | <u>N/A</u> | _____ | _____ | _____ |
| Actual Emissions | _____ | _____ | _____ | _____ | _____ | _____ |
| Lbs/Hr | _____ | _____ | _____ | _____ | _____ | _____ |
| Tons/Yr | <u>10.9</u> | _____ | <u>122</u> | _____ | _____ | _____ |

Control/Process Ref. _____

| | | |
|---|-------------------------|-------------|
| | Emission Bank Code Ref. | Bubble Ref. |
| <input checked="" type="checkbox"/> Offsets | <u>11101-006D</u> | _____ |
| <input type="checkbox"/> PSD | <u>43101-007D</u> | _____ |

Applicant for Permit J. L. Detherage, Plt. Eng. Appl. Dated 5/15/80

Address Same as above

Witt
 Air Pollution Control Officer

BANKED EMISSIONS LEDGER

ACTIVE

CLOSED

1. Pollutant Description Hydrocarbon Banking Permit #20-80
2. Deposit Code 4 3 1 0 1 - 0 0 6
3. a. Date of Deposit 1/17/80 b. Closing Date _____
4. a. Source of Banked Emissions International Harvester Foundry
 b. Address 5005 Crittenden Dr., Louisville, Ky. 40221
 c. Plant EIS 0097
5. a. Description of process generating banked emissions and permit nos.
Shell Core Line, Core Lines #1, #2, #5, & #6.

 b. What caused emissions to be available for banking?
Shutdown of all equipment listed above since December 1977.

6. Banked emissions prior to discounting 45.0 Tons/yr
7. Initial discount _____ Tons/yr
8. Balance (subtract Line 7 from Line 6) _____ Tons/yr
 For further explanation see Note nos: 1

First Withdrawal

9. Date _____ Buyer _____ Permit No. _____
10. Emissions from source requiring offsets (but before applying offset ratio) _____ Tons/yr
11. Offset ratio 1 : 1
12. Offset emissions (multiply Line 10 by Line 11) _____ Tons/yr
13. Balance (subtract Line 12 from Line 8) _____ Tons/yr
 For further explanation, see Note nos. _____

Second Withdrawal

14. Date _____ Buyer _____ Permit No. _____
15. Emissions from source requiring offsets (but before applying offset ratio) _____ Tons/yr
16. Offset ratio 1 : 1
17. Offset emissions (multiply Line 15 by Line 16) _____ Tons/yr
18. Balance (subtract Line 17 from Line 13) _____ Tons/yr
 For further explanation, see Note nos. _____

Third Withdrawal

19. Date _____ Buyer _____ Permit No. _____
20. Emissions from source requiring offsets (but before applying offset ratio) _____ Tons/yr
21. Offset ratio 1 : 1
22. Offset emissions (multiply Line 21 by Line 20) _____ Tons/yr
23. Balance (subtract Line 22 from Line 19) _____ Tons/yr
 Enter here and on Line 24, page 2 _____ Tons/yr
 For further explanation, see Note nos. _____

AIR POLLUTION CONTROL DISTRICT OF JEFFERSON COUNTY

914 East Broadway

BANKING

Louisville, Kentucky FEB 22 1980

PAID

BY _____

FEB 22 1980

AIR POLLUTION CONTROL DISTRICT
OF JEFFERSON COUNTY

PERMIT

Permit No. 20-80
 EIS Plant 0097 Pt. _____

Issue Date 2-20 1980

Expiration Date _____ 19____
 Permission is hereby given by the Air Pollution Control Board of the Air Pollution Control District of Jefferson County to:

Construct Operate Equipment: Process Control

located at International Harvester Foundry, 5005 Crittenden Dr., Lou., Ky. 402
 in accordance with plans and specifications on file with the Air Pollution Control District.

Permit covers DEPOSIT OF PARTICULATE AND HYDROCARBON EMISSIONS INTO EMISSIONS BANK. This offset credit has been obtained by shutting down various foundry operations as defined in Table 1 attached and made a part hereof of this permit.

*Allowable emissions overridden by lower potential emissions for core lines and the dust blowoff station.
 **Hydrocarbon emissions based on actual emissions in 1977.

Rated capacity various Normal Oper. Hrs. per Yr. 3776

Fuels Used: Primary _____

Secondary _____

| Allowable Emissions | Basis: % Rated Capacity Hr | | | | | |
|---------------------|----------------------------|-----------------|---------------|-------|-----------------|---------------|
| | TSP | SO ₂ | HC | CO | NO _x | Other: |
| Lbs/Hr | <u>403.4*</u> | _____ | <u>N/A</u> | _____ | _____ | <u>100</u> |
| Tons/Yr | <u>761.6*</u> | _____ | <u>N/A</u> | _____ | _____ | <u>100 37</u> |
| Actual Emissions | | | | | | |
| Lbs/Hr | <u>97.7</u> | _____ | <u>23.8**</u> | _____ | _____ | <u>100</u> |
| Tons/Yr | <u>184.4</u> | _____ | <u>45.0**</u> | _____ | _____ | <u>100 37</u> |

Control/Process Ref. _____
 Emission Bank Code Ref. 11101-0020 _____
 Bubble Ref. _____
 Offsets
 PSD 43101-0060 _____

Applicant for Permit Joseph F. Mavri Appl. Dated 1/17/80
 Address 5005 Crittenden Dr., Louisville, Ky. 40221

BANKED EMISSIONS LEDGER

ACTIVE

CLOSED

1. Pollutant Description Paint solvent vapors Permit no. 169-79
2. Deposit Code 4 3 1 0 1 - 0 0 2
- 3.a. Date of Deposit October 25, 1979 b. Closing Date _____
- 4.a. Source of Banked Emissions International Harvester Co., Louisville
 b. Address Foundry, 5005 Crittenden Drive, Louisville, Ky. 40221
 c. Plant EIS 0097
- 5.a. Description of process generating banked emissions and permit nos.
Spra-Conn Painting System, Touch Up Paint Booth & Paint Dip
Room.
- b. What caused emissions to be available for banking?
The facilities mentioned above have been shut down.

| | | |
|--|------------|---------|
| 6. Banked emissions prior to discounting | <u>384</u> | Tons/yr |
| 7. Initial discount | _____ | Tons/yr |
| 8. Balance (subtract Line 7 from Line 6) | _____ | Tons/yr |

For further explanation see Note nos: _____

First Withdrawal

9. Date 10/1/79 Buyer Pro-Kote, Inc. Permit No. 237-79
 10. Emissions from source requiring offsets (but before applying offset ratio) 74 Tons/yr
 11. Offset ratio 1.1:1
 12. Offset emissions (multiply Line 10 by Line 11) 81 Tons/yr
 13. Balance (subtract Line 12 from Line 8) 303 Tons/yr
- For further explanation, see Note nos. _____

Second Withdrawal

14. Date _____ Buyer _____ Permit No. _____
 15. Emissions from source requiring offsets (but before applying offset ratio) _____ Tons/yr
 16. Offset ratio _____:1
 17. Offset emissions (multiply Line 15 by Line 16) _____ Tons/yr
 18. Balance (subtract Line 17 from Line 13) _____ Tons/yr
- For further explanation, see Note nos. _____

Third Withdrawal

19. Date _____ Buyer _____ Permit No. _____
 20. Emissions from source requiring offsets (but before applying offset ratio) _____ Tons/yr
 21. Offset ratio _____:1
 22. Offset emissions (multiply Line 21 by Line 22) _____ Tons/yr
 23. Balance (subtract Line 23 from Line 19) _____ Tons/yr
- Enter here and on Line 24, page 2 _____ Tons/yr
- For further explanation, see Note nos. _____

AIR POLLUTION CONTROL DISTRICT OF JEFFERSON COUNTY

914 East Broadway BANKING Louisville, Kentucky 40204

PERMIT

PAID

BY _____

NOV 16 1979

AIR POLLUTION CONTROL DISTRICT
OF JEFFERSON COUNTY

Permit No. 169 -79
 Issue Date Oct. 25 19 79
 Expiration Date N/A 19

EIS Plant 0097 Pt. 42

Permission is hereby given by the Air Pollution Control Board of the Air Pollution Control District of Jefferson County to:

Construct Operate Equipment: Process Control

located at International Harvester Co., Louisville Foundry, 5005 Crittenden D
 in accordance with plans and specifications on file with the Air Pollution Control District.
Louisville, Ky. 40221

Permit covers DEPOSIT OF HYDROCARBON EMISSIONS INTO EMISSIONS BANK.

This offset credit has been obtained by shutting down the Spra-Conn
 Painting System & Touch Up Booth and the Paint Dip Room.

*Actual emissions based on 1976 production rate (which was representative
 full production) and the 1978 operating hours but the allowable emissions
 cutoff was overriding for the Spra-conn System & Touch Up Booth.

Rated capacity 44 tons/hr. of castings Normal Oper. Hrs. per yr. 3712

Fuels Used: Primary _____

Secondary _____

| Allowable Emissions | BANK | | | | | | Basis: % Rated Capacity Hrs |
|---------------------|-------|-----------------|-----|-------|-----------------|--------|-----------------------------|
| | TSP | SO ₂ | HC | CO | NO _x | Other: | |
| Lbs/Hr | _____ | _____ | 375 | _____ | _____ | _____ | 100 |
| Tons/Yr | _____ | _____ | 696 | _____ | _____ | _____ | 100 3 |
| Actual Emissions | | | | | | | |
| Lbs/Hr | _____ | _____ | 207 | _____ | _____ | _____ | 100 |
| Tons/Yr | _____ | _____ | 384 | _____ | _____ | _____ | 100 * 37 |

Control/Process Ref. _____

Offsets Emission Bank Code Ref. 43101-002 D Bubble Ref. _____
 PSD _____

Applicant for Permit J.F. Mavri, Manager, Mfg. Engineering Appl. Dated 9/20/79

Address Same As Above

[Handwritten Signature]

JEFFERSON COUNTY

914 East Broadway

BANKING

Louisville, Kentucky 40204

PERMIT

PAID

BY: _____

NOV 16 1979

AIR POLLUTION CONTROL DISTRICT

Permit No. 5500

OF JEFFERSON COUNTY

EIS Plant 0097 Pg. 42

Permit No. 169 -79

Issue Date Oct. 25 19 79

Expiration Date N/A 1979

Permission is hereby given by the Air Pollution Control Board of the Air Pollution Control District of Jefferson County to:

Construct Operate Equipment: Process Control

located at International Harvester Co., Louisville Foundry, 5005 Crittenden D
in accordance with plans and specifications on file with the Air Pollution Control District.
Louisville, Ky. 40221

Permit covers DEPOSIT OF HYDROCARBON EMISSIONS INTO EMISSIONS BANK.

This offset credit has been obtained by shutting down the Spra-Conn
Painting System & Touch Up Booth and the Paint Dip Room.

*Actual emissions based on 1976 production rate (which was representative
full production) and the 1978 operating hours but the allowable emissions
cutoff was overriding for the Spra-conn System & Touch Up Booth.

Rated capacity 44 tons/hr. of castings Normal Oper. Hrs. per Yr. 3712

Fuels Used: Primary _____

Secondary _____

| Allowable Emissions | BANK | | | | | | Basis: % Rated Capacity Hrs |
|---------------------|-------|-----------------|-----|-------|-----------------|--------|-----------------------------|
| | TSP | SO ₂ | HC | CO | NO _x | Others | |
| Lbs/Hr | _____ | _____ | 375 | _____ | _____ | _____ | 100 |
| Tons/Yr | _____ | _____ | 696 | _____ | _____ | _____ | 100 3 |
| Actual Emissions | | | | | | | |
| Lbs/Hr | _____ | _____ | 207 | _____ | _____ | _____ | 100 |
| Tons/Yr | _____ | _____ | 384 | _____ | _____ | _____ | 100 * 37 |

Control/Process Ref. _____

Offsets Emission Bank Code Ref. 43101-002 D

PSD _____

Bubble Ref. _____

Applicant for Permit J.F. Mavri, Manager, Mfg. Engineering Appl. Dated 9/20/79

Address Same As Above

W. R. Rauscher

Air Pollution Control Officer

AIR POLLUTION CONTROL DISTRICT

OF JEFFERSON COUNTY

914 East Broadway

BANKING

Louisville, Kentucky FEB 22 1980

PERMIT

PAID

BY _____

FEB 22 1980

AIR POLLUTION CONTROL DISTRICT
OF JEFFERSON COUNTY

Permit Fee \$ _____
EIS Plant 0097 Pt. _____

Permit No. 20-80
Issue Date 2-20 1980

Expiration Date _____ 19____
Permission is hereby given by the Air Pollution Control Board of the Air Pollution Control District of Jefferson County to:

Construct Operate Equipment: Process Control

located at International Harvester Foundry, 5005 Crittenden Dr., Lou., Ky. 402
in accordance with plans and specifications on file with the Air Pollution Control District.

Permit covers DEPOSIT OF PARTICULATE AND HYDROCARBON EMISSIONS INTO EMISSIONS BANK. This offset credit has been obtained by shutting down various foundry

operations as defined in Table 1 attached and made a part hereof of this

permit. *Allowable emissions overridden by lower potential emissions for core lines and the dust blowoff station.
**Hydrocarbon emissions based on actual emissions in 1977.

Rated capacity various Normal Oper. Hrs. per Yr. 3776

Fuels Used: Primary _____
Secondary _____

| Allowable Emissions | Basis: % Rated Capacity Hr | | | | | |
|---------------------|----------------------------|-----------------|---------------|-------|-----------------|---------------|
| | TSP | SO ₂ | HC | CO | NO _x | Other: |
| Lbs/Hr | <u>403.4*</u> | _____ | <u>N/A</u> | _____ | _____ | <u>100</u> |
| Tons/Yr | <u>761.6*</u> | _____ | <u>N/A</u> | _____ | _____ | <u>100 37</u> |
| Actual Emissions | | | | | | |
| Lbs/Hr | <u>97.7</u> | _____ | <u>23.8**</u> | _____ | _____ | <u>100</u> |
| Tons/Yr | <u>184.4</u> | _____ | <u>45.0**</u> | _____ | _____ | <u>100 37</u> |

Control/Process Ref. _____
Emission Bank Code Ref. 11101-002D _____
Bubble Ref. _____
 Offsets 43101-006D _____
 PSD

Applicant for Permit Joseph F. Mavri Appl. Dated 1/17/80
Address 5005 Crittenden Dr., Louisville, Ky. 40221

W. H. Rusch

AIR POLLUTION CONTROL DISTRICT OF JEFFERSON COUNTY

914 East Broadway

Louisville, Kentucky 40204

BANKING PERMIT

PAID *with*

BY _____

Coburn

3741 10 1981

AIR POLLUTION CONTROL DISTRICT
OF JEFFERSON COUNTY

Permit Fee \$ 15.00

Permit No. 374-80
 Issue Date Dec. 11 19 80
 Expiration Date N/A 19 _____

EIS Plant 0255 Pt. _____

Permission is hereby given by the Air Pollution Control Board of the Air Pollution Control District of Jefferson County to:

- Construct
 Operate
 Equipment: Process
 Control

located at International Harvester Co., Louisville Plant, 5005 Crittenden Dr
 in accordance with plans and specifications on file with Air Pollution Control District, Louisville, KY 4
 Permit covers DEPOSIT OF PARTICULATE AND HYDROCARBON EMISSIONS INTO EMISSIONS BANK. This offset credit has been obtained by shutting down various pain degreasing, machining, abrasive cleaning, grinding and washing operations as specified in Table I attached and made a part of this permit.

*Emissions based on the peak production figures since 1976.

Rated capacity _____ Normal Oper. Hrs. per Yr. 8-16/5/46.4

Fuels Used: Primary _____
 Secondary _____

| Allowable Emissions | | | | | | | Basis: % Rated Capacity Hrs/Yr |
|---------------------|-------------|-------|------------|-------|-------|--------|--------------------------------|
| | TSP | SO2 | HC | CO | NOx | Other: | |
| Lbs/Hr | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| Tons/Yr | <u>26.4</u> | _____ | <u>N/A</u> | _____ | _____ | _____ | * |
| Actual Emissions | | | | | | | |
| Lbs/Hr | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| Tons/Yr | <u>10.9</u> | _____ | <u>122</u> | _____ | _____ | _____ | * |

Control/Process Ref. _____

| | | |
|---|-------------------------|-------------|
| | Emission Bank Code Ref. | Bubble Ref. |
| <input checked="" type="checkbox"/> Offsets | <u>11101-006D</u> | _____ |
| <input type="checkbox"/> PSD | <u>43101-007D</u> | _____ |

Applicant for Permit J. L. Detherage, Plt. Eng. Appl. Dated 5/15/80

Address Same as above

W. H. Busch
 Air Pollution Control Officer

Louisville Metro Air Pollution Control Board Agreed Board Order - Amendment 2

This amended Agreed Board Order is entered into between the Louisville Metro Air Pollution Control Board and the Kosmos Cement Company pursuant to the authority granted in Kentucky Revised Statutes Chapter 77 Air Pollution Control.

Company: Kosmos Cement Company (Kosmos)
15301 Dixie Highway
Louisville, Kentucky 40272

Background and Discussion

Regulation 6.42 *Reasonably Available Control Technology Requirements for Major Volatile Organic Compound- and Nitrogen Oxides-Emitting Facilities* requires the establishment and implementation of reasonably available control technology (RACT) for certain affected facilities that emit oxides of nitrogen (NO_x) and that are located at a major stationary source for NO_x. Section 4.4 requires that each determination of RACT approved by the Louisville Metro Air Pollution Control District (District) be submitted to the U.S. Environmental Protection Agency (EPA) as a site-specific revision of the Kentucky State Implementation Plan (SIP). The Kosmos *Board Order - Amendment 1* was approved into the Kentucky SIP on October 23, 2001 (66 FR 53665).

Kosmos agrees to accept a NO_x emission limit for the cement kiln that is more stringent than the RACT level that is currently in the Kentucky SIP. To be federally enforceable, this more stringent NO_x emission limit must be approved by the EPA as a site-specific revision of the Kentucky SIP.

A Public Hearing on this amended Agreed Board Order was held before the Board on March 31, 2004. Based upon the evidence presented at that hearing, the Board determined that approval of this amended Agreed Board Order and submittal as a site-specific revision of the Kentucky SIP were appropriate.

Now therefore it is agreed that:

1. The attached NO_x RACT Plan - Amendment 2, applicable to Kosmos, is approved by the District. Kosmos shall comply with this plan.
2. Compliance with the attached NO_x RACT Plan - Amendment 2 shall be deemed compliance with the requirements of Regulation 6.42 section 1.2, section 1.3, Section 2 to the extent that this Section applies to section 4.3, section 4.3, and Section 5 to the extent that this Section

applies to verification of compliance with the requirements pursuant to section 4.3.

3. This amended Agreed Board Order shall not be deemed or construed to be the result of any violation of any federal, state, or local statute, regulation, or ordinance for any purpose whatsoever.
4. Kosmos has reviewed this amended Agreed Board Order and consents to all its requirements and terms.
5. The effective date of this Agreed Board Order and the attached NO_x RACT Plan - Amendment 2 is May 3, 2004. The Board Order that was approved on October 18, 2000, shall remain in effect until May 3, 2004.

Dated this 3rd day of May, 2004.

Louisville Metro
Air Pollution Control Board

Kosmos Cement Company

By: _____
Karen Cassidy
Chair

By: _____
Edmo Gutierrez
Plant Manager

Louisville Metro
Air Pollution Control District

Approved as to form and legality for:
Louisville Metro
Air Pollution Control District

By: _____
Jesse M. Goldsmith
Air Pollution Control Officer

By: _____
Lauren Anderson
Assistant District Attorney

NO_x RACT Plan - Amendment 2

1. The oxides of nitrogen (NO_x, expressed as NO₂) emission from the cement kiln shall not exceed 4.755 pounds per ton of clinker produced by the kiln, based upon a rolling 30-day average.
2. The NO_x emission rate for the cement kiln shall be determined using the methods and procedures specified in NO_x RACT Plan Appendix A - Amendment 2 and Appendix B - Amendment 2.
3. The Kosmos Cement Company (Kosmos) shall install, calibrate, maintain, and operate a NO_x continuous emissions monitoring system (CEMS) for the cement kiln and shall keep records and submit reports and other notifications as specified in NO_x RACT Plan Appendix A - Amendment 2 and Appendix B - Amendment 2.
4. Kosmos shall keep a record identifying all deviations from the requirements of this NO_x RACT Plan and shall submit to the District a written report of all deviations that occurred during the preceding semi-annual period. Semi-annual periods shall run from January 1 to June 30 and July 1 to December 31. The semi-annual report shall contain the information specified in NO_x RACT Plan Appendix A - Amendment 2 Section II. A. and B. If no deviation occurred during the semi-annual period, the report shall contain a negative declaration. Each report shall be submitted within 60 days following the end of the semi-annual period.
5. In lieu of the requirements in this NO_x RACT Plan, Kosmos may comply with alternative requirements regarding emission limitations, equipment operation, test methods, monitoring, recordkeeping, or reporting, provided the following conditions are met:
 - A. The alternative requirements are established and incorporated into an operating permit pursuant to a Title V Operating Permit issuance, renewal, or significant permit revision process as established in Regulation 2.16,
 - B. The alternative requirements are consistent with the streamlining procedures and guidelines set forth in section II.A. of *White Paper Number 2 for Improved Implementation of the Part 70 Operating Permits Program*, March 5, 1996, U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards. The overall effect of compliance with alternative requirements shall consider the effect on an intrinsic basis, such as pounds per ton of clinker produced by the kiln,
 - C. The U.S. Environmental Protection Agency (EPA) has not objected to the issuance, renewal, or revision of the Title V Operating Permit, and either
 - D. If the public comment period preceded the EPA review period, then the District had transmitted any public comments concerning the alternative requirements to EPA with the proposed permit, or
 - E. If the EPA and public comment periods ran concurrently, then the District had transmitted any public comments concerning the alternative requirements to EPA no later than 5 working days after the end of the public comment period.

The District's determination of approval of any alternative requirements is not binding on EPA. Noncompliance with any alternative requirement established pursuant to the Title V Operating

Kosmos Cement Company

Permit process constitutes a violation of this NO_x RACT Plan.

History: Approved 11-8-99; effective 1-1-00; amended a1/10-18-00 effective 1-1-01, a2/5-3-04 effective 5-3-04.

**Appendix A - Amendment 2 to NO_x RACT Plan
Requirements for NO_x CEMS**

1. General Operating Requirements

- A.** Kosmos shall install, calibrate, maintain, and operate a continuous emissions monitoring system (CEMS) for measuring oxides of nitrogen (NO_x) emissions discharged to the atmosphere from the cement kiln and record the output of the system.
- B.** The NO_x CEMS shall be operated and data recorded during all periods of operation of the cement kiln except for CEMS breakdowns and repairs. Data shall be recorded during calibration checks and zero and span adjustments.
- C.** The 1-hour average NO_x emission rates measured by the CEMS shall be expressed in pounds per ton of clinker produced by the cement kiln and shall be used to calculate the average emission rates. At least 2 data points shall be used to calculate each 1-hour average.
- D.** The NO_x rates expressed in pounds per ton of clinker produced shall be calculated using the exhaust flow rate of 233,500 dry standard cubic feet per minute. As an alternative, the NO_x emission rates may be calculated using exhaust flow rates obtained by a flow measuring monitor as approved by the District. A flow measuring monitor shall meet the requirements in NO_x RACT Plan Appendix B - Amendment 2.
- E.** The procedures under 40 CFR §60.13 (d), (e), (f), and (h) shall be followed for installation, evaluation, and operation of the CEMS.
- F.** The NO_x CEMS shall be installed and operated in compliance with the requirements of 40 CFR Part 60 Appendix B Performance Specification 2 and the quality assurance and certification requirements of Performance Specification 2 shall be met as well as the requirements in this Appendix.
- G.** The span value for the NO_x CEMS shall be determined so that all expected concentrations can be accurately measured and recorded as indicated in NO_x RACT Plan Appendix B - Amendment 2.
- H.** The Quality Assurance Procedures in 40 CFR Part 60 Appendix F shall be followed. All reporting required by 40 CFR Part 60 Appendix F to be submitted to the Agency shall instead be submitted to the District.
- I.** When NO_x emission data or flow monitor data (if a flow monitor is used) are not obtained because of CEMS breakdowns, repairs, calibration checks, or zero and span adjustments, emission data shall be obtained by using one of the following options to provide emission data for a minimum of 75% of the operating hours in each kiln operating day, in at least 22 out of

30 successive cement kiln operating days:

1. Standby monitoring systems, 40 CFR Part 60 Appendix A Method 7 or Method 7a, or other approved reference methods, or
2. Data substitution as follows:
 - a. If the missing data period is 6 hours or less, then substitute an average of the quality-assured data from the hour immediately before and the hour immediately after the missing data period for each hour of missing data, and
 - b. If the missing data period is greater than 6 hours, then substitute the greatest emission rate or flow (if a flow monitor is used) recorded during the previous 168 quality-assured monitor operating hours at a clinker production rate that is within 10% of the current operating rate. If there are not enough data to satisfy this requirement, then substitute data from a higher clinker production rate or the maximum design flow or emission rate.

All “estimated” data shall be reported with a clear notation that they are estimated and not obtained from a certified monitor or EPA-approved test method.

- J.** The clinker production rate shall be determined and recorded during all periods of operation of the cement kiln except for breakdowns and repairs of the system used to determine the clinker production rate (raw materials weigh feeder and associated data acquisition system). Data shall be recorded during periods of calibration for the weigh feeder, which at a minimum shall be performed annually.
- K.** The clinker production rate determined from monitoring the rate of raw materials input to the cement kiln shall be calculated by dividing the rate of raw materials input to the cement kiln by the current raw materials conversion factor. The raw materials conversion factor shall be determined on a quarterly basis and this conversion factor shall be used in the calculation of the clinker production rate until the next quarterly raw materials conversion rate test is performed. The raw materials conversion rate factor shall be determined by weighing and recording the raw materials input to the cement kiln with the weigh feeder and weighing and recording the clinker output from the cement kiln with the use of a certified scale over a four-to twelve-hour period and an average calculated from those data. The current raw materials conversion factor shall be included with the semi-annual emissions report.
- L.** If a flow monitor is used in the determination of the pounds NO_x per ton of clinker produced by the cement kiln, then the flow monitoring system shall meet all the requirements specified in NO_x RACT Plan Appendix B - Amendment 2.
- M.** The data acquisition and handling system used in recording and reporting the necessary information required for the determination of compliance with the limit set for the pounds of NO_x per ton of clinker produced by the cement kiln shall meet all of the requirements specified in NO_x RACT Plan Appendix B - Amendment 2.
- N.** A monitoring plan shall be created and kept current for the system used to determine

compliance with the pounds of NO_x per ton of clinker produced by the cement kiln limit. The most current version of the monitoring plan shall be submitted to the District and also be easily accessed by the monitoring system operation personnel.

II. Reporting and recordkeeping requirements

- A. Kosmos shall keep records of all of the following information for each operating day and submit semi-annual reports that include the information required in item 12 and, if applicable, in items 4 to 10:
1. Calendar date,
 2. The average hourly NO_x emission rates measured, expressed as pounds per ton of clinker produced by the cement kiln,
 3. The 30-day average NO_x emission rates, expressed as pounds per ton clinker produced by the cement kiln, calculated at the end of each cement kiln operating day from the measured hourly nitrogen oxide emission rates for the preceding 30 cement kiln operating days. The average shall not include data recorded during periods of CEMS breakdowns, repairs, calibration checks, and zero and span adjustments,
 4. Identification of the cement kiln operating days when the calculated rolling 30-day average NO_x emission rates are in excess of the NO_x emissions standard of the NO_x RACT Plan - Amendment 2. Kosmos shall submit excess emission reports for any excess emissions that occurred during the reporting period. This report shall include the magnitude of the excess emissions in pounds per ton of clinker produced and the date and time of the commencement and completion of each period of excess emissions as well as the nature and cause of each period of excess emissions and any corrective actions taken or preventive measures adopted,
 5. Identification of the cement kiln operating days for which pollutant data have not been obtained, including reasons for not obtaining sufficient data and a description of corrective actions taken,
 6. Identification of the times when emission data have been excluded from the calculation of average emission rates, the reasons for excluding data, and description of corrective action taken,
 7. Identification of times when hourly averages have been obtained based on 40 CFR Part 60 Appendix A Method 7 or Method 7a,
 8. Identification of times which the CEMS (including all monitors) was inoperative, including the date and time and the nature of the system repairs or adjustments except for zero and span checks,
 9. Identification of the times when the pollutant concentration exceeded full span of the CEMS,
 10. Description of any modifications to the CEMS that could affect the ability of the CEMS to comply with 40 CFR Part 60 Appendix B Performance Specification 2,
 11. Results of daily CEMS drift tests and quarterly accuracy assessments as required under 40 CFR Part 60 Appendix F Procedure 1,
 12. Results of the quarterly raw materials conversion factor testing, and

13. Clinker production rates used to determine the pounds of NO_x per ton of clinker produced by the cement kiln.

All semi-annual reports and Summary Reports shall be postmarked by the 60th day following the end of each semi-annual period.

- B.** Kosmos shall submit a Summary Report with every semi-annual report. The Summary Report shall be in the format given in 40 CFR §60.7 Figure 1.
- C.** All records required by this NO_x RACT Plan - Amendment 2 shall be maintained by Kosmos for a period of 5 years following the date of such record.

**NO_x RACT Plan Appendix B - Amendment 2
Requirements for Flow Monitors
and Additional Requirements for NO_x CEMS**

I. Installation of the Flow Monitor

Install the flow monitor in a location that provides representative volumetric flow over all operating conditions. Such a location is one that provides an average velocity of the flue gas flow over the stack or duct cross section, provides a representative NO_x emission rate (in lb/ton of clinker produced by the cement kiln), and is representative of the pollutant concentration monitor location. Where the moisture content of the flue gas affects volumetric flow measurements, use the procedures in both Reference Methods 1 and 4 of 40 CFR Part 60 Appendix A to establish a proper location for the flow monitor. The District recommends (but does not require) performing a flow profile study following the procedures in 40 CFR Part 60 Appendix A Method 1 section 2.5 or 2.4 for each of the three operating or load levels indicated in section V.B. to determine the acceptability of the potential flow monitor location and to determine the number and location of flow sampling points required to obtain a representative flow value. The procedure in 40 CFR Part 60 Appendix A Test Method 1 section 2.5 may be used even if the flow measurement location is greater than or equal to 2 equivalent stack or duct diameters downstream or greater than or equal to ½ duct diameter upstream from a flow disturbance. If a flow profile study shows that cyclonic (or swirling) or stratified flow conditions exist at the potential flow monitor location that are likely to prevent the monitor from meeting the performance specifications of this Appendix, then the District recommends either (1) selecting another location where there is no cyclonic (or swirling) or stratified flow condition or (2) eliminating the cyclonic (or swirling) or stratified flow condition by straightening the flow, e.g., by installing straightening vanes. The District also recommends selecting flow monitor locations to minimize the effects of condensation, coating, erosion, or other conditions that could adversely affect flow monitor performance.

II. Acceptability of Monitor Location

If the flow monitor is installed in a location that does not satisfy these physical criteria, but nevertheless the monitor achieves the performance specifications of this Appendix, then the location is acceptable, notwithstanding the requirements of this Appendix.

Whenever Kosmos successfully demonstrates that modifications to the exhaust duct or stack (such as installation of straightening vanes, modifications of ductwork, and the like) are necessary for the flow monitor to meet the performance specifications, the District may approve an interim alternative flow monitoring methodology and an extension to the required certification date for the flow monitor.

Where no location exists that satisfies the physical siting criteria in the previous two paragraphs, where the results of flow profile studies performed at two or more alternative flow monitor locations are unacceptable, or where installation of a flow monitor in either the stack or the ducts is

demonstrated to be technically infeasible, Kosmos may petition the District for an alternative method for monitoring flow.

III. Equipment Specifications

A. Instrument Span

To the extent practicable, measure at a range such that the majority of readings obtained during normal operation are between 25 and 75 percent of full-scale range of the instrument. Select the full-scale range of the flow monitor so that it can accurately measure all potential volumetric flow rates at the flow monitor installation site. For this purpose, determine the span value of the flow monitor using the following procedure:

Determine the MPV or maximum potential flow rate (MPF) in scfh (wet basis) from velocity traverse testing. Use the highest velocity measured at or near the maximum unit operating load. Calculate the MPV in units of wet standard fpm. Then, if necessary, convert the MPV to equivalent units of flow rate (e.g., scfh or kscfh) or differential pressure (inches of water), consistent with the measurement units used for the daily calibration error test to calculate the span value. Multiply the MPV (in equivalent units) by 125 percent, and round up the result to no less than 2 significant figures. Report the full-scale range setting, and calculations of the span value, MPV, and MPF to the District and include this information in the monitoring plan.

If conditions change such that the maximum potential velocity may change significantly, adjust the range to assure the continued accuracy of the flow monitor. Calculate an adjusted span using the procedures in this section. Select the full-scale range of the instrument to be greater than or equal to the adjusted span value. Record and report the new full-scale range setting, calculations of the span value, MPV, and MPF, and the adjusted span value to the District and include this information in the monitoring plan. Record and report the adjusted span and reference values as parts of the records for the calibration error test. Whenever the span value is adjusted, use reference values for the calibration error test based on the most recent adjusted span value.

Perform a calibration error test according to section III.B. whenever making a change to the flow monitor span or range. Recertification is required whenever making a significant change in the flow monitor's range that requires an internal modification to the monitor.

B. Design for Quality Control Testing

1. Design of the Flow Monitor

Design all the flow monitors to meet the applicable performance specifications.

2. Calibration Error Test

Design and equip each flow monitor to allow for a daily calibration error test consisting of at least two reference values: (1) Zero to 20 % of span or an equivalent reference

value (e.g., pressure pulse or electronic signal) and (2) 50 to 70 % of span. Flow monitor response, both before and after any adjustment, must be recorded. Design each flow monitor to allow a daily calibration error test of (1) the entire flow monitoring system, from and including the probe tip (or equivalent) through and including the data acquisition and handling system, or (2) the flow monitoring system from and including the transducer through and including the data acquisition and handling system.

3. Interference Check

- a. Design and equip each flow monitor with a means to ensure that the moisture expected to occur at the monitoring location does not interfere with the proper functioning of the flow monitoring system. Design and equip each flow monitor with a means to detect, on at least a daily basis, pluggage of each sample line and sensing port, and malfunction of each resistance temperature detector (RTD), transceiver, or equivalent.
- b. Design and equip each differential pressure flow monitor to provide (1) an automatic, periodic back purging (simultaneously on both sides of the probe) or equivalent method of sufficient force and frequency to keep the probe and lines sufficiently free of obstructions on at least a daily basis to prevent velocity sensing interference, and (2) a means for detecting leaks in the system on at least a quarterly basis (manual check is acceptable).
- c. Design and equip each thermal flow monitor with a means to ensure on at least a daily basis that the probe remains sufficiently clean to prevent velocity sensing interference.
- d. Design and equip each ultrasonic flow monitor with a means to ensure on at least a daily basis that the transceivers remain sufficiently clean (e.g., backpurging system) to prevent velocity sensing interference.

IV. Performance Specifications

A. Calibration Error

The calibration error of flow monitors shall not exceed 3.0 % based upon the span of the instrument as calculated using Equation A-6 of 40 CFR Part 75 Appendix A.

B. Relative Accuracy for Flow

The relative accuracy of flow monitors shall not exceed 10.0 %. Where the average of the flow monitor measurements of gas velocity during one or more operating levels of the relative accuracy test audit is less than or equal to 10.0 fps, the mean value of the flow monitor velocity measurements shall not exceed ± 2.0 fps of the reference method mean value in fps wherever the relative accuracy specification above is not achieved.

V. Certification Testing

A. Flow Monitor 7-day Calibration Error Test

Measure the calibration error of each flow monitor according to the following procedures:

1. Introduce the reference signal corresponding to the values specified in section III.B.2. to the probe tip (or equivalent) or to the transducer.
2. During the 7-day certification test period, conduct the calibration error test while the cement kiln is operating once each operating day (as close to 24-hour intervals as practicable). In the event that extended cement kiln outages occur after the commencement of the test, the 7 consecutive operating days need not be 7 consecutive calendar days.
3. Record the flow monitor responses by means of the data acquisition and handling system.
4. Calculate the calibration error using Equation A-6 of 40 CFR Part 75 Appendix A.
5. Do not perform any corrective maintenance, repair, or replacement upon the flow monitor during the 7-day certification test period other than that required for normal daily operation as specified by the monitor manufacturer or by the NO_x RACT Plan - Amendment 2.
6. Do not make adjustments between the zero and high reference level measurements on any day during the 7-day test.
7. If the flow monitor operates within the calibration error performance specification (i.e., less than or equal to 3 % error each day and requiring no corrective maintenance, repair, or replacement during the 7-day test period) the flow monitor passes the calibration error test portion of the certification test.
8. Record all maintenance activities and the magnitude of any adjustments.
9. Record output readings from the data acquisition and handling system before and after all adjustments.
10. Record and report all calibration error test results using the unadjusted flow rate measured in the calibration error test prior to resetting the calibration.
11. Record all adjustments made during the 7-day period at the time the adjustment is made and report them in the certification application.

B. Relative Accuracy

1. Perform relative accuracy test audits for the flow monitor at three different exhaust gas velocities, expressed in terms of percent of flow monitor span, or different operating levels. Select the operating levels as follows: (1) A frequently used low operating level selected within the range between the minimum safe and stable operating level and 50 % load, (2) a frequently used high operating level selected within the range between 80 % of the maximum operating level and the maximum operating level, and (3) the normal operating level.
2. If the normal operating level is within 10.0 % of the maximum operating level of either (1) or (2) above, use a level that is evenly spaced between the low and high operating levels used. The maximum operating level shall be equal to the design capacity less any physical or regulatory limitations or other deratings. Calculate flow monitor relative accuracy at each of the three operating levels. If a flow monitor fails the relative

accuracy test on any of the three levels of a three-level relative accuracy test audit, the three-level relative accuracy test audit shall be repeated.

3. If the kiln is normally operated at only one level, then it is acceptable to perform relative accuracy test audits at the normal operating level only.

C. Calculations

Using the data from the relative accuracy test audits, calculate relative accuracy in accordance with the procedures and equations specified in section VI.

D. Reference Method Measurement Location

Select a location for reference method measurements that is (1) accessible, (2) in the same proximity as the monitor or monitoring system location, and (3) meets the requirements of Method 1 (or 1A) in 40 CFR Part 60 Appendix A for volumetric flow, except as otherwise indicated in this section or as approved by the District.

E. Reference Method Traverse Point Selection

Select traverse points that (1) ensure acquisition of representative samples of flue gas flow rate over the flue cross section, and (2) meet the requirements of 40 CFR Part 60 Appendix A Method 1 (or 1A)(for volumetric flow).

F. Sampling Strategy

Conduct the reference method tests so they will yield results representative of the flue gas flow rate from the cement kiln and can be correlated with the flow monitor CEMS measurements. To properly correlate the volumetric flow rate data with the reference method data, mark the beginning and end of each reference method test run (including the exact time of day) on the individual chart recorder or other permanent recording device.

G. Correlation of Reference Method and Continuous Emission Monitoring System

1. Confirm that the monitor or monitoring system and reference method test results are on consistent moisture basis (e.g., since the flow monitor measures flow rate on a wet basis, Method 2 test results shall also be on a wet basis).
2. Compare flow-monitor and reference method results on an scfh basis. Also, consider the response times of the flow monitoring system to ensure comparison of simultaneous measurements.
3. For each relative accuracy test audit run, compare the measurements obtained from the monitor or continuous emission monitoring system against the corresponding reference method values. Tabulate the paired data in a table such as the one shown in Figure 2 of 40 CFR Part 75 Appendix A.

H. Number of Reference Method Tests

Perform a minimum of 9 sets of paired monitor (or monitoring system) and reference method test data for every required relative accuracy test. For the certification and annual quality

assurance relative accuracy test audits for flow monitors, perform a minimum of 9 sets at each operating level as specified in section V.B. Conduct each set within a period of 30 to 60 minutes.

Note: The tester may choose to perform more than 9 sets of reference method tests. If this option is chosen, the tester may reject a maximum of 3 sets of the test results as long as the total number of test results used to determine the relative accuracy or bias is greater than or equal to 9. Report all data, including the rejected data, and reference method test results.

I. Reference Methods

The following methods from 40 CFR Part 60 Appendix or their approved alternatives are the reference methods for performing relative accuracy test audits: Method 1 or 1A for siting; Method 2 (or 2A, 2C, or 2D) for velocity , and Method 4 for moisture.

VI. Calculations

A. Flow Monitor Calibration Error

For each reference value, calculate the percentage calibration error based upon span using the equation A-6 as given in 40 CFR Part 75 Appendix A.

B. Relative Accuracy for Flow Monitors

Analyze the relative accuracy test audit data from the reference method test for flow monitors using the following procedures:

1. Summarize the results on a data sheet. An example is shown in Figure 3 of 40 CFR Part 75 Appendix A.
2. Calculate the mean of the monitor or monitoring system measurement values.
3. Calculate the mean of the reference method values.
4. Using data from the source CEMS, calculate the arithmetic differences between the reference method and monitor measurement data sets.
5. Calculate the arithmetic mean of the difference, the standard deviation, the confidence coefficient, and the monitor or monitoring system relative accuracy using the procedures and equations found in 40 CFR Part 75 Appendix A as is specified in the following sections.

C. Arithmetic Mean

Calculate the arithmetic mean of the differences using equation A-7 as given in 40 CFR Part 75 Appendix A.

D. Standard Deviation

Calculate the standard deviation of a data set using equation A-8 as given in 40 CFR Part 75 Appendix A.

E. Confidence Coefficient

Calculate the confidence coefficient using equation A-9 as given in 40 CFR Part 75 Appendix A.

F. Relative Accuracy

Calculate the relative accuracy of a data set using equation A-10 as given in 40 CFR Part 75 Appendix A.

VII. Quality Assurance and Quality Control

A. Calibration Error Test

Perform the daily calibration error test of each flow monitoring system according to the procedure in this section.

1. Perform the daily calibration error tests on each scale that has been used since the previous calibration error test. For example, if the flow has not exceeded the low scale value (based on the maximum expected concentration) since the previous calibration error test, the calibration error test may be performed on the low scale only. If, however, the flow has exceeded the low scale span value for one hour or longer since the previous calibration error test, perform the calibration error test on both the low and high scales.
2. All daily calibration error tests shall be performed while the unit is in operation at normal, stable conditions (i.e. "on-line").

B. Daily Flow Interference Check

Perform the daily flow monitor interference checks specified in section III.B.3. while the unit is in operation at normal, stable conditions.

C. Recalibration

The District recommends adjusting the calibration, at a minimum, whenever the daily calibration error exceeds the limits of the applicable performance specification for the flow monitor in section IV.

D. Out-of-Control Period

1. An out-of-control period occurs when the calibration error of a flow monitor exceeds 6.0 % based upon the span value, which is twice the applicable specification of this section. The out-of-control period begins with the hour of completion of the failed calibration error test and ends with the hour of completion following an effective recalibration. Whenever the failed calibration, corrective action, and effective recalibration occur within the same hour, the hour is not out of control if 2 or more valid readings are obtained during that hour.
2. An out-of-control period also occurs whenever interference of a flow monitor is identified. The out-of-control period begins with the hour of completion of the failed interference check and ends with the hour of completion of an interference check that is

passed.

E. Quality Assurance of Data With Respect to Daily Assessments

When a monitoring system passes a daily assessment (i.e., daily calibration error test or daily flow interference check), data from that monitoring system are prospectively validated for 26 clock hours (i.e., 24 hours plus a 2-hour grace period) beginning with the hour in which the test is passed, unless another assessment (i.e. a daily calibration error test, an interference check of a flow monitor, or a relative accuracy test audit) is failed within the 26-hour period.

F. Data Invalidation with Respect to Daily Assessments

Data from a monitoring system are invalid beginning with the first hour following the expiration of a 26-hour data validation period.

G. Daily Assessment Start-Up Grace Period

For the purpose of quality assuring data with respect to a daily assessment (i.e. a daily flow interference check), a start-up grace period may apply when a unit begins to operate after a period of non-operation. The start-up grace period for a daily calibration error test is independent of the start-up grace period for a daily flow interference check. To qualify for a start-up grace period for a daily assessment, there are two requirements:

1. The unit must have resumed operation after being in outage for 1 or more hours (i.e., the unit must be in a start-up condition) as evidenced by a change in unit operating time from zero in one clock hour to an operating time greater than zero in the next clock hour, and
2. For the monitoring system to be used to validate data during the grace period, the previous daily assessment of the same kind must have been passed on-line within 26 clock hours prior to the last hour in which the unit operated before the outage. In addition, the monitoring system must be in-control with respect to quarterly and semi-annual or annual assessments.

If both of the above conditions are met, then a start-up grace period of up to 8 clock hours applies, beginning with the first hour of unit operation following the outage. During the start-up grace period, data generated by the monitoring system are considered quality-assured. For each monitoring system, a start-up grace period for a calibration error test or flow interference check ends when either: (1) a daily assessment of the same kind (i.e., calibration error test or flow interference check) is performed, or (2) 8 clock hours have elapsed (starting with the first hour of unit operation following the outage), whichever occurs first.

H. Data Recording

Record and tabulate all calibration error test data according to month, day, clock-hour, and magnitude in scfh. Program monitors that automatically adjust data to the corrected calibration values (e.g., microprocessor control) to record either: (1) the unadjusted flow rate measured in the calibration error test prior to resetting the calibration, or (2) the magnitude of any adjustment. Record the following applicable flow monitor interference check data: (1) sample line/sensing port pluggage, and (2) malfunction of each RTD, transceiver, or

equivalent.

VIII. Quarterly Assessments

For a differential pressure flow monitor or flow monitoring system, perform a leak check of all sample lines (a manual check is acceptable) during each unit operating quarter. This requirement is effective as of the calendar quarter following the calendar quarter in which the flow monitor or flow emission monitoring system is provisionally certified.

IX. Annual Assessments

For the flow monitor, perform the relative accuracy test audit (RATA) assessment once annually (within four calendar quarters) after the calendar quarter in which the monitor or monitoring system was last tested, as specified below for the type of test and the performance achieved. This requirement is effective as of the calendar quarter following the calendar quarter in which the monitor or continuous monitoring system is provisionally certified.

A. Relative Accuracy Test Audit (RATA)

Perform relative accuracy test audits annually and, to the extent practicable, no less than 4 months apart for the flow monitor. The three-level audit shall be performed at the three different operating or load levels specified in V.B.

B. Out-of-Control Period

An out-of-control period occurs under any of the following condition : the relative accuracy of a flow monitor exceeds 10.0 %, for low flow situations (≤ 10.0 fps) or the flow monitor mean value (if applicable) exceeds ± 2.0 fps of the reference method mean whenever the relative accuracy is greater than 15.0 %. For a flow relative accuracy test audit at 3 operating levels, the out-of-control period begins with the hour of completion of the first failed relative accuracy test audit at any of the three operating levels, and ends with the hour of completion of a satisfactory three-level relative accuracy test audit.

X. Other Audits

Affected units may be subject to relative accuracy test audits at any time. If a monitor or continuous emission monitoring system fails the relative accuracy test during the audit, the monitor or continuous emission monitoring system shall be considered to be out-of-control beginning with the date and time of completion of the audit, and continuing until a successful audit test is completed following corrective action.

XI. Span Determination for the NO_x Monitor

A. To the extent practicable, measure the NO_x emissions at a range such that the majority of readings obtained during normal operation are between 25 and 75 % of full-scale range of the

instrument.

B. Maximum Potential Concentration

1. The monitor must be capable of accurately measuring up to 125 % of the maximum potential concentration (MPC) as determined below in this section. To determine the maximum potential concentration, Kosmos may use NO_x emission test results or historical fully quality assured CEMS data over the previous 30 unit operating days. Multiply the MPC by 125 % and round up to the nearest multiple of 100 ppm to determine the span value. The span value shall be used to determine the concentrations of the calibration gases.
2. Report the full-scale range setting and calculations of the MPC, maximum potential NO_x emission rate, and span to the District and record them in the monitoring plan. Select the full-scale range of the instrument to be consistent with section XI.A., and to be greater than or equal to the span value. This selected monitor range with a span rounded up from 125 % of the maximum potential concentration shall be the "high scale" of the NO_x pollutant concentration monitor.
3. If NO_x emission testing is used to determine the maximum potential NO_x concentration, use the following guidelines:
 - a. Use Method 7E from 40 CFR Part 60 Appendix A to measure total NO_x concentration.
 - b. Operate the unit at the minimum safe and stable production level, the normal production level, and the maximum production level. If the normal load and maximum load are identical, an intermediate level need not be tested.
 - c. Operate at the highest excess O₂ level expected under normal operating conditions.
 - d. Make at least 3 runs with 3 traverse points of at least 20 minutes duration at each operating condition.
 - e. Select the highest NO_x concentration from all measured values as the maximum potential concentration for NO_x. If historical CEM data are used to determine the MPC, the data must represent various operating conditions, including the minimum safe and stable production level, normal production level, and production level load.
 - f. Calculate the MPC and span using the highest hourly NO_x concentration in ppm.

C. Maximum Expected Concentration

1. If the majority of NO_x concentrations are expected to be less than 25 % of the full-scale range of the instrument selected under section XI.B., use a "low scale" measurement range.
2. Calculate the span for the additional (lower) range by multiplying the maximum expected concentration by 125 % and by rounding up the resultant concentration to the nearest multiple of 10 ppm. The span value of this additional (lower) range shall also be used to determine the concentrations of the calibration gases.
3. Include the full-scale range setting and calculations of the MEC and span and report these to the District and record them in the monitoring plan.
4. Select the full scale range of the instrument to be consistent with section XI.A., and to be

greater or equal to the lower range span value. This selected monitor range with a span rounded up from 125 % of the maximum expected concentration is the "low scale" of NO_x pollutant concentration monitors.

D. Auto-ranging monitors

For monitors that can continuously and automatically adjust their range of measurement, the monitor shall be capable at any time of accurately measuring up to 125 % of the maximum potential concentration as defined in section XI.B. Define the span value for an auto-ranging monitor as 125 % of the maximum potential concentration and 125 % of the maximum expected concentration if a second span is determined to be necessary under section XI.C. Determine concentrations of the calibration gases based upon the span value.

E. Adjustment of Span

1. Whenever the fuel supply, emission controls, or other process parameters change such that the maximum expected concentration or the maximum potential concentration may change significantly, adjust the NO_x pollutant concentration span and monitor range to assure the continued accuracy of the monitoring system. Determine the adjusted span value using the procedures in sections XI.B. or XI.C. Select the new full scale range of the instrument to be greater than or equal to the adjusted span value and to be consistent with the guidelines of section XI.A.
2. Record and report the new full-scale range setting, calculations of the span value, MPC, and MEC (if appropriate), maximum potential NO_x emission rate and the adjusted span value to the District and record them in the monitoring plan. In addition, record and report the adjusted span as part of the records for the daily calibration error test and linearity check.
3. Whenever the span value is adjusted, use calibration gas concentrations based on the most recent adjusted span value. Perform a cylinder gas audit (CGA) according to 40 CFR Part 60 Appendix F whenever making a change to the monitor span or range. Recertification is required whenever a significant change is made in the monitor's range that requires an internal modification to the monitor (e.g., a change of measurement cell length).

XII. Data Acquisition and Handling Systems

Automated data acquisition and handling systems shall meet the following requirements:

- A.** Read and record the full range of potential NO_x emission concentrations and volumetric flow from zero through span, raw materials input rates to the cement kiln, and flow (if used),
- B.** Provide a continuous, permanent record of all measurements and required information as an ASCII flat file capable of transmission via an IBM-compatible personal computer diskette or other electronic media,
- C.** Interpret and convert the individual output signals from a flow monitor (if used) and a NO_x CEMS to produce a continuous readout of pollutant mass emission rates in the units of pounds NO_x per ton of clinker produced by the cement kiln,

- D. Calculate and record intermediate values necessary to obtain emissions rates such as NO_x concentration, raw materials input to the cement kiln, and flow (if used), and
- E. Calculate and record emissions in units of the standard (pounds NO_x per ton of clinker produced by the cement kiln).

XIII. Data Preparation

If the NO_x concentration is in ppm, multiply it by 1.194×10^{-7} (lb/dscf)/ppm to convert it to units of lb/dscf. If the NO_x concentration is in mg/dscm, multiply it by 6.24×10^{-8} (lb/dscf)/(mg/dscm) to convert it to lb/dscf. Then, use the appropriate gas flow rate and clinker production rate to calculate the emissions in terms of pounds NO_x per ton of clinker produced by multiplying lb/dscf by the appropriate dscf and dividing by the appropriate tons of clinker production rate from the cement kiln.

XIV. NO_x Emission Rate (Monitoring System)

For each test run in a data set, calculate the average NO_x emission rate (in lb per ton of clinker produced), by means of the data acquisition and handling system, during the time period of the test run. Tabulate the results as shown in 40 CFR Part 75 Appendix A Figure 4 (replace lb/mmBtu with lb/tons of clinker produced by the cement kiln).

XV. Relative Accuracy

Use the equations and procedures in 40 CFR Part 60 Appendix B Specification 2 to calculate the relative accuracy for the NO_x CEMS. In using Equation 2-1, "d" is, for each run, the difference between the NO_x emission rate values (in lb per ton of clinker produced by the cement kiln) obtained from the reference method data and the NO_x CEMS.

XVI. Quality Assurance and Quality Control Procedures

A. Quality Control Program

Develop and implement a quality control program for the continuous emission monitoring systems and their components. As a minimum, include in each quality control program a written plan that describes in detail complete, step-by-step procedures and operations for each of the following activities:

1. Calibration Error Test and Linearity Check Procedures. Identify calibration error test and linearity check procedures specific to the CEMS that may require variance from the procedures in this NO_x RACT Plan - Amendment 2.
2. Calibration and Linearity Adjustments. Explain how each component of the CEMS will be adjusted to provide correct responses to calibration gases, reference values, and/or indications of interference both initially and after repairs or corrective action. Identify equations, conversion factors, assumed moisture content, and other factors affecting calibration of each CEMS.

3. Preventive Maintenance. Keep a written record of procedures, including those specified by the manufacturers, needed to maintain the CEMS in proper operating condition and a schedule for those procedures. Include provisions for maintaining an inventory of spare parts.
4. Audit Procedures. Keep a written record of procedures and details peculiar to the installed CEMS that are to be used for relative accuracy test audits, such as sampling and analysis methods.
5. Recordkeeping and Reporting. Keep a written record describing procedures that will be used to implement the recordkeeping and reporting requirements.

APB
KY129

JAMES E. BICKFORD
SECRETARY

PAUL E. PATTON
GOVERNOR



COMMONWEALTH OF KENTUCKY
NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET
OFFICE OF THE SECRETARY
FRANKFORT, KENTUCKY 40601
TELEPHONE: (502) 564-3350
May 23, 2001

Mr. Stanley Meiburg
Acting Regional Administrator
U.S. EPA, Region 4
Atlanta Federal Center
61 Forsyth Street, S.W.
Atlanta, Georgia 30303-8960

Dear Mr. Meiburg:


Enclosed for your consideration are five copies of a revision to the Jefferson County portion of Kentucky's State Implementation Plan (SIP). The proposed SIP revision package contains nine Reasonably Available Control Technology (RACT) plans for major sources of oxides of nitrogen (NO_x). The following eight plans replace the version submitted to the U.S. Environmental Protection Agency on November 12, 1999, by the Natural Resources and Environmental Protection Cabinet:

- Ford Louisville Assembly Plant
- GE Appliances
- Kosmos Cement Company
- Louisville Gas & Electric Company – Cane Run Generating Station
- Louisville Gas & Electric Company – Mill Creek Generating Station
- Louisville Medical Center Steam Plant
- Oxy Vinyls, LP.
- Texas Gas Transmission

The ninth plan is new for the American Synthetic Rubber Company.

Your prompt consideration of this request is appreciated. If you have any questions or comments concerning this matter, please contact Lona Brewer at the Division for Air Quality at (502) 573-3382 or Jonathan Trout with the Air Pollution Control District of Jefferson County at (502) 574-7251.

Sincerely,


James E. Bickford
Secretary

AIR PLANNING BRANCH
RECEIVED
MAY 30 2001
EPA-REGION #4
ATLANTA, GA.

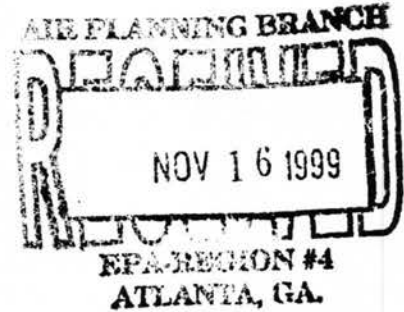
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Enclosures
cc: Kay Prince

JAMES E. BICKFORD
SECRETARY



PAUL E. PATTON
GOVERNOR

COMMONWEALTH OF KENTUCKY
NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET
OFFICE OF THE SECRETARY
FRANKFORT KENTUCKY 40601
TELEPHONE: (502) 564-3350
November 12, 1999



Mr. John H. Hankinson, Jr.
Regional Administrator
U.S. EPA, Region IV
Atlanta Federal Center
61 Forsyth Street, S.W.
Atlanta, Georgia 30303

Dear Mr. Hankinson:

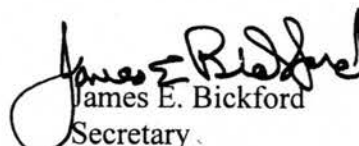
Enclosed are four copies of a request from the Air Pollution Control District of Jefferson County for a revision to the Jefferson County portion of the Kentucky State Implementation Plan.

This proposed SIP revision submittal package contains ten reasonably available control technology (RACT) plans for major sources of oxides of nitrogen (NOx). These plans were developed by the Air Pollution Control District of Jefferson County and apply to the following major sources:

E.I. DuPont de Nemours & Company
Ford Louisville Assembly Plant
GE Appliances
Kosmos Cement Company
Louisville Gas & Electric Company – Cane Run Generating Station
Louisville Gas & Electric Company – Mill Creek Generating Station
Louisville Medical Center Steam Plant
Oxy Vinyls, LP.
Rohm & Haas Company
Texas Gas Transmission

Your prompt consideration of this request is appreciated. If you have any questions or comments, please contact Mr. Arthur L. Williams at (502) 574-8689.

Sincerely,


James E. Bickford
Secretary

JEB:jt

Enclosures



AN EQUAL OPPORTUNITY EMPLOYER M/F/D

**Air Pollution Control Board of Jefferson County
Board Order - Amendment 1**

This amended Board Order is issued by the Air Pollution Control Board of Jefferson County pursuant to the authority granted in Kentucky Revised Statutes Chapter 77 Air Pollution Control.

Company: Louisville Gas and Electric Company
Cane Run Generating Station (LG&E/CRGS)
5252 Cane Run Road
Louisville, Kentucky 40216

Background and Discussion

Regulation 6.42 *Reasonably Available Control Technology Requirements for Major Volatile Organic Compound- and Nitrogen Oxides-Emitting Facilities* requires the establishment and implementation of reasonably available control technology (RACT) for certain affected facilities that emit oxides of nitrogen (NO_x) and that are located at a major stationary source for NO_x. Section 4.4 requires that each determination of RACT approved by the Air Pollution Control District of Jefferson County (District) be submitted to the U.S. Environmental Protection Agency (EPA) as a site-specific revision of the Kentucky State Implementation Plan (SIP).

The initial Board Order was approved by the Board on November 8, 1999, and submitted to the EPA by the Kentucky Natural Resources and Environmental Protection Cabinet on November 12, 1999, as a site-specific revision of the Kentucky SIP. Subsequently, the EPA identified issues needing resolution before this NO_x RACT determination would be approved as part of the Kentucky SIP. This amended Board Order addresses those issues.

A Public Hearing on this amended Board Order was held before the Board on October 18, 2000. Based upon the evidence presented at that hearing, the Board determined that approval of this amended Board Order and submittal as a site-specific revision of the Kentucky SIP were appropriate.

Now therefore be it ordered that:

1. The attached NO_x RACT Plan - Amendment 1, applicable to the LG&E/CRGS, is approved by the District. The LG&E/CRGS shall comply with this plan.
2. Compliance with the attached NO_x RACT Plan - Amendment 1 shall be deemed compliance with the requirements of Regulation 6.42 section 1.2, section 1.3, Section 2 to the extent that this Section applies to section 4.3, section 4.3, and Section 5 to the extent that this Section applies to verification of compliance with the requirements pursuant to section 4.3.

3. This amended Board Order shall not be deemed or construed to be the result of any violation of any federal, state, or local statute, regulation, or ordinance for any purpose whatsoever.
4. The LG&E/CRGS has reviewed this amended Board Order and consents to all its requirements and terms.
5. The effective date of this amended Board Order is January 1, 2001. The initial Board Order, approved on November 8, 1999, shall remain in effect until January 1, 2001.

Dated this 18th day of October, 2000.

Air Pollution Control Board
of Jefferson County

By: Robert W. Powell, M.D.
Robert W. Powell, M.D.
Chairman

Louisville Gas and Electric Company
Cane Run Generating Station

By: Caryl M. Pfeiffer
Caryl M. Pfeiffer
Director, Environmental Affairs

Air Pollution Control District
of Jefferson County

By: Jesse M. Goldsmith
Jesse M. Goldsmith
Air Pollution Control Officer

Approved as to form and legality:
Air Pollution Control District
of Jefferson County

By: Gaylord B. Ballard
Gaylord B. Ballard
Attorney

NO_x RACT Plan - Amendment 1

1. The oxides of nitrogen (NO_x, expressed as NO₂) emission from each utility boiler shall not exceed the rate as specified below, based upon a rolling 30-day average:

| | |
|--------|-----------------------------|
| Unit 4 | 0.52 lb/mmBtu of heat input |
| Unit 5 | 0.52 lb/mmBtu of heat input |
| Unit 6 | 0.47 lb/mmBtu of heat input |

2. The NO_x emission rate for each utility boiler shall be determined using the methods and procedures specified in NO_x RACT Plan Appendix A - Amendment 1, except that any reference to an annual average shall be read as a rolling 30-day average.
3. The Louisville Gas and Electric Company Cane Run Generating Station (LG&E/CRGS) shall install, maintain, and operate a NO_x continuous emissions monitoring system (CEMS) for each utility boiler and shall keep records and submit reports and other notifications as specified in NO_x RACT Plan Appendix A - Amendment 1.
4. The GT-11 turbine shall not be operated for more than 500 hours per calendar year.
5. The LG&E/CRGS shall make a record of the hours of operation during each day of operation of the GT-11 turbine. Each record shall be maintained for a minimum of 5 years and made available to the District upon request.
6. The quarterly report required by this NO_x RACT Plan Element (Element) No. 7 shall include a summary of the monthly and calendar-year-to-date hours of operation of the GT-11 gas turbine.
7. The LG&E/CRGS shall keep a record identifying all deviations from the requirements of this NO_x RACT Plan and shall submit to the District a written report of all deviations that occurred during the preceding calendar quarter. The report shall contain the following information:
 - A. The boiler number,
 - B. The beginning and ending date of the reporting period,
 - C. Identification of all periods during which a deviation occurred,
 - D. A description, including the magnitude, of the deviation,
 - E. If known, the cause of the deviation, and
 - F. A description of all corrective actions taken to abate the deviation.If no deviation occurred during the calendar quarter, the report shall contain a negative declaration. Each report shall be submitted within 30 days following the end of the calendar quarter.
8. In lieu of the requirements in this NO_x RACT Plan, the LG&E/CRGS may comply with alternative requirements regarding emission limitations, equipment operation, test methods, monitoring, recordkeeping, or reporting, provided the following conditions are met:

Louisville Gas and Electric Company
Cane Run Generating Station

- A. The alternative requirements are established and incorporated into an operating permit pursuant to a Title V Operating Permit issuance, renewal, or significant permit revision process as established in Regulation 2.16,
- B. The alternative requirements are consistent with the streamlining procedures and guidelines set forth in section II.A. of *White Paper Number 2 for Improved Implementation of the Part 70 Operating Permits Program*, March 5, 1996, U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards. The overall effect of compliance with alternative requirements shall consider the effect on an intrinsic basis, such as pounds per million Btu of heat input. However, alternative requirements that are developed based upon revisions to the applicable requirements contained in 40 CFR Part 60 or Part 75 shall be approvable pursuant to this NO_x RACT Plan Element,
- C. The U.S. Environmental Protection Agency (EPA) has not objected to the issuance, renewal, or revision of the Title V Operating Permit, and either
- D. If the public comment period preceded the EPA review period, then the District had transmitted any public comments concerning the alternative requirements to EPA with the proposed permit, or
- E. If the EPA and public comment periods ran concurrently, then the District had transmitted any public comments concerning the alternative requirements to EPA no later than 5 working days after the end of the public comment period.

The District's determination of approval of any alternative requirements is not binding on EPA. Noncompliance with any alternative requirement established pursuant to the Title V Operating Permit process constitutes a violation of this NO_x RACT Plan.

History: Approved 11-8-99; effective 1-1-00; amended a1/10-18-00 effective 1-1-01.

**Appendix A to NO_x RACT Plan - Amendment 1
Requirements for NO_x CEMS**

I. General Operating Requirements

- A. Primary measurement requirements.** The LG&E/CRGS shall, for each utility boiler, install, certify, operate, and maintain, in accordance with the requirements of 40 CFR 75, an oxides of nitrogen (NO_x) continuous emission monitoring system (CEMS), consisting of a NO_x pollutant concentration monitor and an oxygen (O₂) or carbon dioxide (CO₂) diluent gas monitor, with an automated data acquisition and handling system for measuring and recording NO_x concentration (in parts per million [ppm]), O₂ or CO₂ concentration (in percent O₂ or CO₂) and NO_x emission rate (in lb/mmBtu of heat input) discharged to the atmosphere. Any reference in this Appendix to an annual average shall be read as a rolling 30-day average. The LG&E/CRGS shall account for total NO_x emissions, both nitrogen oxide (NO) and nitrogen dioxide (NO₂), either by monitoring for both NO and NO₂ or by monitoring for NO only and adjusting the emissions data to account for NO₂.
- B. Primary equipment performance requirements.** The LG&E/CRGS shall ensure that each CEMS used to demonstrate compliance with the NO_x emission limit meets the equipment, installation, and performance specifications in 40 CFR 75 Appendix A, and is maintained according to the quality assurance and quality control procedures in 40 CFR 75 Appendix B. The NO_x emission rate for each utility boiler shall be recorded as lb/mmBtu of heat input.
- C. Primary equipment hourly operating requirements.**
1. The LG&E/CRGS shall ensure that all CEMS are in operation and monitoring the emissions from the associated utility boiler at all times that the utility boiler combusts any fuel except during a period of any of the following:
 - a. Calibration, quality assurance, or preventive maintenance, any of which is performed pursuant to 40 CFR §75.21, 40 CFR 75 Appendix B, District regulations, District permit conditions, or this NO_x RACT Plan, or
 - b. Repair, backups of data from the data acquisition and handling system, or recertification, any of which is performed pursuant to 40 CFR §75.20.
 2. The LG&E/CRGS shall ensure that the following requirements are met:
 - a. Each CEMS and component thereof is capable of completing a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute interval. The LG&E/CRGS shall reduce all volumetric flow, CO₂ concentration, O₂ concentration, NO_x concentration, and NO_x emission rate data collected by the monitors to hourly averages. Hourly averages shall be computed using at least one data point in each 15-minute quadrant of an hour during which the utility boiler combusted fuel during that quadrant of the hour. Notwithstanding this requirement, an hourly average may be computed from at least two data points separated by a minimum of 15 minutes (where the unit operates for more than one quadrant of the hour) if

data are unavailable as a result of the performance of any activity specified in paragraph I.C.1. of this Appendix. The LG&E/CRGS shall use all valid measurements or data points collected during an hour to calculate the hourly averages. All data points collected during an hour shall be, to the extent practicable, evenly spaced over the hour.

- b. Failure of a CO₂ or O₂ diluent concentration monitor, flow monitor, or NO_x pollutant concentration monitor to acquire the minimum number of data points for calculation of an hourly average shall result in the failure to obtain a valid hour of data and the loss of such component data for the entire hour. An hourly average NO_x emission rate in lb/mmBtu of heat input is valid only if the minimum number of data points are acquired by both the pollutant concentration monitor (NO_x) and the diluent monitor (CO₂ or O₂). If a valid hour of data is not obtained, the owner or operator shall estimate and record emissions, moisture, or flow data for the missing hour by means of the automated data acquisition and handling system, in accordance with the applicable procedure for missing data substitution in 40 CFR 75 Subpart D.
- D. Optional backup monitor requirements.** If the LG&E/CRGS chooses to use two or more CEMS, each of which is capable of monitoring the same stack or duct at a specific utility boiler, then the LG&E/CRGS shall designate one CEMS as the primary monitoring system and shall record this designation in the monitoring plan. The LG&E/CRGS shall designate any other CEMS as a backup CEMS in the monitoring plan. Any other backup CEMS shall be designated as a redundant backup CEMS, non-redundant backup CEMS, or reference method CEMS, as described in 40 CFR §75.20(d). When the certified primary monitoring system is operating and not out-of-control as defined in 40 CFR §75.24, only data from the certified primary monitoring system shall be reported as valid, quality-assured data. Thus, data from a backup CEMS may be reported as valid, quality-assured data only when a backup CEMS is operating and not out-of-control as defined in 40 CFR §75.24 or in the applicable reference method in 40 CFR 60 Appendix A and when the certified primary monitoring system is not operating or is operating but out-of-control. A particular monitor may be designated both as a certified primary monitor for one unit and as a certified redundant backup monitor for another unit.
- E. Minimum measurement capability requirements.** Each CEMS and component thereof shall be capable of accurately measuring, recording, and reporting data, and shall not incur a full scale exceedance, except as provided in section 2.1.2.5 of 40 CFR 75 Appendix A.
- F.** The LG&E/CRGS shall not operate a utility boiler so as to discharge, or allow to be discharged, emissions of NO_x to the atmosphere without accounting for all such emissions in accordance with the methods and procedures specified in this Appendix.
- G.** The LG&E/CRGS shall not disrupt the CEMS, any portion thereof, or any other approved emission monitoring method, and thereby avoid monitoring and recording

NO_x emissions discharged into the atmosphere, except for periods of recertification or periods when calibration, quality assurance testing, or maintenance is performed in accordance with the provisions of this Appendix.

- H. The LG&E/CRGS shall not retire or permanently discontinue use of the CEMS, any component thereof, or any other approved emission monitoring system under this Appendix except under any one of the following circumstances:
 - 1. The LG&E/CRGS is monitoring NO_x emissions from the utility boiler with another certified monitoring system approved in accordance with the provisions of paragraph I.D. of this Appendix, or
 - 2. The LG&E/CRGS submits notification of the date of certification testing of a replacement monitoring system.
- I. The quality assurance and quality control requirements in 40 CFR §75.21 that apply to NO_x pollutant concentration monitors and diluent gas monitors shall be met. A NO_x pollutant concentration monitor for determining NO_x emissions shall meet the same certification testing requirements, quality assurance requirements, and bias test requirements as those specified in 40 CFR 75 for an SO₂ pollutant concentration monitor.
- J. **Moisture correction.** If a correction for the stack gas moisture content is needed to properly calculate the NO_x emission rate in lb/mmBtu of heat input (i.e., if the NO_x pollutant concentration monitor measures on a different moisture basis from the diluent monitor), LG&E/CRGS shall either report a fuel-specific default moisture value for each utility boiler operating hour, as provided in 40 CFR §75.11(b)(1), or shall install, operate, maintain, and quality assure a continuous moisture monitoring system, as defined in 40 CFR §75.11(b)(2). Notwithstanding this requirement, if Equation 19-3, 19-4 or 19-8 in Method 19 in Appendix A to 40 CFR Part 60 is used to measure NO_x emission rate, the following fuel-specific default moisture percentages shall be used in lieu of the default values specified in 40 CFR §75.11(b)(1): 5.0%, for anthracite coal; 8.0% for bituminous coal; 12.0% for sub-bituminous coal; 13.0% for lignite coal; and 15.0% for wood.

II. Specific Provisions for Monitoring NO_x Emission Rate (NO_x and diluent gas monitors)

- A. The LG&E/CRGS shall meet the general operating requirements in 40 CFR §75.10 for a NO_x CEMS for each utility boiler. The diluent gas monitor in the NO_x CEMS may measure either O₂ or CO₂ concentration in the flue gases.
- B. The LG&E/CRGS shall calculate hourly and rolling 30-day NO_x emission rates (in lb/mmBtu of heat input) by combining the NO_x concentration (in ppm), diluent concentration (in percent O₂ or CO₂), and percent moisture (if applicable) measurements according to the procedures in 40 CFR 75 Appendix F.

III. Monitoring plan

The LG&E/CRGS shall prepare and maintain a monitoring plan as specified in 40 CFR 75.53. The monitoring plan shall be submitted to the District no later than 45 days prior to the first scheduled certification test.

IV. Recordkeeping Provisions

- A. The LG&E/CRGS shall maintain for each utility boiler a file of all measurements, data, reports, and other information required by this Appendix at the stationary source in a form suitable for inspection for at least 5 years from the date of each record. This file shall contain the following information:
1. The data and information required in paragraph IV.B. of this Appendix,
 2. The component data and information used to calculate values required in paragraph IV.B. of this Appendix,
 3. The current monitoring plan as specified in 40 CFR §75.53, and
 4. The quality control plan as described in 40 CFR 75 Appendix B.
- B. **NO_x emission record provisions.** The LG&E/CRGS shall record hourly the following information as measured and reported from the certified primary monitor, certified back-up or certified portable monitor, or other approved method of emissions determination for each utility boiler:
1. Date and hour,
 2. Hourly average NO_x concentration (ppm, rounded to the nearest tenth),
 3. Hourly average diluent gas concentration (percent O₂ or percent CO₂, rounded to the nearest tenth),
 4. Hourly average NO_x emission rate (lb/mmBtu of heat input, rounded to nearest hundredth),
 5. Hourly average NO_x emission rate (lb/mmBtu of heat input, rounded to nearest hundredth) adjusted for bias, if a bias adjustment factor is required by 40 CFR §75.24 (d),
 6. Percent monitoring system data availability (recorded to the nearest tenth of a percent), calculated pursuant to 40 CFR §75.32,
 7. Method of determination for hourly average NO_x emission rate using Codes 1-55 in 40 CFR §75.57 Table 4A, and
 8. Unique code identifying emissions formula used to derive hourly average NO_x emission rate, as provided for in 40 CFR §75.53.

V. Certification, Quality Assurance, and Quality Control Record Provisions

- A. For each NO_x pollutant concentration monitor and diluent gas monitor, the LG&E/CRGS shall record the following:
1. Results of all trial runs and certification tests and quality assurance activities and measurements (including all reference method field test sheets, charts, records of

Louisville Gas and Electric Company
Cane Run Generating Station

- combined system responses, laboratory analyses, and example calculations) necessary to substantiate compliance with all relevant requirements of this Appendix,
2. Bias test results as specified in 40 CFR 75, Appendix A, section 7.6.4,
 3. The appropriate bias adjustment factor as follows:
 - a. The value derived from Equations A-11 and A-12 in 40 CFR 75 Appendix A for any monitoring system or component that failed the bias test, or
 - b. A value of 1.0 for any monitoring system or component that passed the bias test, and
 4. The component/system identification code.
- B.** For each NO_x pollutant concentration monitor and diluent gas monitor, the LG&E/CRGS shall record the following for all daily and 7-day calibration error tests, including any follow-up tests after corrective action:
1. Instrument span and span scale,
 2. Date and hour,
 3. Reference value (i.e., calibration gas concentration or reference signal value, in ppm or other appropriate units),
 4. Observed value (monitor response during calibration, in ppm or other appropriate units), (flag if using alternative performance specification for low emitters or differential pressure monitors),
 5. Percent calibration error (rounded to the nearest tenth of a percent),
 6. Calibration gas level,
 7. Test number and reason for test,
 8. For 7-day calibrations tests for certification or recertification, a certification from the cylinder gas vendor or CEMS vendor that calibration gases as defined in 40 CFR §72.2 and 40 CFR 75 Appendix A were used to conduct calibration error testing,
 9. Description of any adjustments, corrective actions, or maintenance following a test,
 10. For quality test for off-line calibration, whether the unit is off-line or on-line, and
 11. The component/system identification code.
- C.** For each NO_x pollutant concentration monitor and diluent gas monitor, the LG&E/CRGS shall record the following for the initial and all subsequent linearity checks, including any follow-up tests after corrective action:
1. Instrument span and span scale,
 2. Calibration gas level,
 3. Date, hour, and minute of each gas injection at each calibration gas level,
 4. Reference value (i.e., reference gas concentration for each gas injection at each calibration gas level, in ppm or other appropriate units),
 5. Observed value (monitor response to each reference gas injection at each calibration gas level, in ppm or other appropriate units),
 6. Mean of reference values and mean of measured values at each calibration gas level,
 7. Linearity error at each of the reference gases concentrations (rounded to the

Louisville Gas and Electric Company
Cane Run Generating Station

- nearest tenth of a percent), (flag if using alternative performance specification),
 8. Test number and reason for test (flag if aborted test),
 9. Description of any adjustments, corrective action, or maintenance prior to a passed test or following a failed test,
 10. The number of out-of-control hours, if any, following any tests, and
 11. The component/system identification code.
- D. For each NO_x pollutant concentration monitor and diluent gas monitor, the LG&E/CRGS shall record the following information for the initial and all subsequent relative accuracy tests and test audits:
1. Reference method(s) used,
 2. Individual test run data from the relative accuracy test audit for the NO_x pollutant concentration monitor or diluent gas monitor, including:
 - a. Date, hour, and minute of beginning of test run,
 - b. Date, hour, and minute of end of test run,
 - c. Monitoring system identification code,
 - d. Test number and reason for test,
 - e. Operating load level (low, mid, high, or normal, as appropriate) and number of load levels comprising test,
 - f. Normal load indicator for flow RATAs (except for peaking units),
 - g. Units of measure,
 - h. Run number,
 - i. Run data from CEMS being tested, in the appropriate units of measure,
 - j. Run data for reference method, in the appropriate units of measure,
 - k. Flag value (0, 1, or 9, as appropriate) indicating whether run has been used in calculating relative accuracy and bias values or whether the test was aborted prior to completion,
 - l. Average gross unit load (expressed as a total gross unit load rounded to the nearest MWe or as steam load rounded to the nearest thousand lb/hr), and
 - m. Flag to indicate whether an alternative performance specification has been used,
 3. Calculations and tabulated results, as follows:
 - a. Arithmetic mean of the monitoring system measurement values, reference method values, and of their differences, as specified in Equation A-7 in 40 CFR 75 Appendix A,
 - b. Standard deviation, as specified in Equation A-8 in 40 CFR 75 Appendix A,
 - c. Confidence coefficient, as specified in Equation A-9 in 40 CFR 75 Appendix A,
 - d. Statistical "t" value used in calculations,
 - e. Relative accuracy test results, as specified in Equation A-10 in 40 CFR 75 Appendix A,
 - f. Bias test results as specified in section 7.6.4 in 40 CFR 75 Appendix A,
 - g. Bias adjustment factor from Equation A-12 in 40 CFR 75 Appendix A for any monitoring system or component that failed the bias test (except as otherwise provided in section 7.6.5 in 40 CFR 75 Appendix A) and 1.000 for any

Louisville Gas and Electric Company
Cane Run Generating Station

- monitoring system or component that passed the bias test,
- h. F-factor value(s) used to convert NO_x pollutant concentration and diluent gas (O₂ or CO₂) concentration measurements into NO_x emission rates (in lb/mmBtu),
 - i. The raw data and calculated results for any stratification tests performed in accordance with sections 6.5.6.1 through 6.5.6.3 in 40 CFR 75 Appendix A, and
 - j. For moisture monitoring systems, the coefficient "K" factor or other mathematical algorithm used to adjust the monitoring system with respect to the reference method,
4. Description of any adjustment, corrective action, or maintenance prior to a passed test or following a failed or aborted test,
 5. For each run of each test using Method 7E or 3A in Appendix A of 40 CFR 60 to determine NO_x, CO₂, or O₂ concentration the following:
 - a. Pollutant or diluent gas being measured,
 - b. Span of reference method analyzer,
 - c. Type of reference method system (e.g., extractive or dilution type),
 - d. Reference method dilution factor (dilution type systems, only),
 - e. Reference gas concentration (low, mid, and high gas levels) used for the 3-point, pre-test analyzer calibration error test (or, for dilution type reference method systems, for the 3-point, pre-test system calibration error test) and for any subsequent recalibrations,
 - f. Analyzer responses to the zero-, mid-, and high-level calibration gases during the 3-point pre-test analyzer (or system) calibration error test and during any subsequent recalibration(s),
 - g. Analyzer calibration error at each gas level (zero, mid, and high) for the 3-point, pre-test analyzer (or system) calibration error test and for any subsequent recalibration(s) (percent of span value),
 - h. Upscale gas concentration (mid or high gas level) used for each pre-run or post-run system bias check or, for dilution type reference method systems, for each pre-run or post-run system calibration error check,
 - i. Analyzer response to the calibration gas for each pre-run or post-run system bias (or system calibration error) check,
 - j. The arithmetic average of the analyzer responses to the zero-level gas, for each pair of pre- and post-run system bias (or system calibration error) checks,
 - k. The arithmetic average of the analyzer responses to the upscale calibration gas, for each pair of pre- and post-run system bias (or system calibration error) checks,
 - l. The results of each pre-run and each post-run system bias (or system calibration error) check using the zero-level gas (percentage of span value),
 - m. The results of each pre-run and each post-run system bias (or system calibration error) check using the upscale calibration gas (percentage of span value),
 - n. Calibration drift and zero drift of analyzer during each RATA run (percentage of span value),

Louisville Gas and Electric Company
Cane Run Generating Station

- o. Moisture basis of the reference method analysis,
 - p. Moisture content of stack gas, in percent, during each test run (if needed to convert to moisture basis of CEMS being tested),
 - q. Unadjusted (raw) average pollutant or diluent gas concentration for each run,
 - r. Average pollutant or diluent gas concentration for each run, corrected for calibration bias (or calibration error) and, if applicable, corrected for moisture,
 - s. The F-factor used to convert reference method data to units of lb/mmBtu (if applicable)
 - t. Date(s) of the latest analyzer interference test(s),
 - u. Results of the latest analyzer interference test(s),
 - v. Date of the latest NO₂ to NO conversion test (Method 7E only),
 - w. Results of the latest NO₂ to NO conversion test (Method 7E only), and
 - x. For each calibration gas cylinder used during each RATA, record the cylinder gas vendor, cylinder number, expiration date, pollutant(s) in the cylinder, and certified gas concentration(s),
6. The number of out-of-control hours, if any, following any tests, and
 7. The component/system identification code.

VI. Notifications

- A. The LG&E/CRGS or a designated representative shall submit notice to the District for the following purposes, as required by this Appendix:
 1. Initial certification and recertification test notifications. Written notification shall be submitted of initial certification tests, recertification tests, and revised test dates as specified in 40 CFR §75.20 for continuous emission monitoring systems, except for testing only of the data acquisition and handling system, and
 2. Notification of initial certification testing. Initial certification test notifications shall be submitted not later than 45 days prior to the first scheduled day of initial certification testing. Testing may be performed on a date other than that already provided in a notice under this subparagraph as long as notice of the new date is provided either in writing or by telephone or other means at least 7 days prior to the original scheduled test date or the revised test date, whichever is earlier.
- B. For retesting following a loss of certification under 40 CFR §75.20(a)(5) or for recertification under 40 CFR §75.20(b), notice of testing shall be submitted either in writing or by telephone at least 7 days prior to the first scheduled day of testing, except that in emergency situations when testing is required following an uncontrollable failure of equipment that results in lost data, notice shall be sufficient if provided within 2 business days following the date when testing is scheduled. Testing may be performed on a date other than that already provided in a notice under this subparagraph as long as notice of the new date is provided by telephone or other means at least 2 business days prior to the original scheduled test date or the revised test date, whichever is earlier.
- C. Notwithstanding the notice requirements of paragraph B. above, the LG&E/CRGS may elect to repeat a certification test immediately, without advance notification, whenever

the LG&E/CRGS has determined during the certification testing that a test was failed or that a second test is necessary in order to attain a reduced relative accuracy test frequency.

- D. Written notice shall be submitted, either by mail or facsimile, of the date of periodic relative accuracy testing performed under 40 CFR Part 75 Appendix B no later than 21 days prior to the first scheduled day of testing. Testing may be performed on a date other than that already provided in a notice under this subparagraph as long as notice of the new date is provided either in writing or by telephone or other means acceptable to the District, and the notice is provided as soon as practicable after the new testing date is known, but no later than 24 hours in advance of the new date of testing.
- E. Notwithstanding the notice requirements under paragraph D. above, the LG&E/CRGS may elect to repeat a periodic relative accuracy test immediately, without additional notification whenever the LG&E/CRGS has determined that a test was failed, or that a second test is necessary in order to attain a reduced relative accuracy test frequency. If an observer from the District is present when a test is rescheduled, the observer may waive all notification requirements under paragraph D. above for the rescheduled test.

VII. Quarterly reports

- A. The LG&E/CRGS shall, within 30 days following the end of each calendar quarter, submit a report to the District that includes the following data and information for each utility boiler:
 - 1. The information and hourly data required in this Appendix, including all emissions and quality assurance data, and
 - 2. Average NO_x emission rate (lb/mmBtu of heat input, rounded to the nearest hundredth) during the rolling 30-day averaging periods.
- B. The LG&E/CRGS shall submit a certification in support of each quarterly emissions monitoring report. This certification shall indicate whether the monitoring data submitted were recorded in accordance with the requirements of this Appendix. In the event of any missing data periods, this certification shall include a description of the measures taken to minimize or eliminate the causes for the missing data periods.

JAMES E. BICKFORD
SECRETARY



APB
KY129
PAUL E. PATTON
GOVERNOR

COMMONWEALTH OF KENTUCKY
NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET

OFFICE OF THE SECRETARY
FRANKFORT, KENTUCKY 40601

TELEPHONE: (502) 564-3350

May 23, 2001

Mr. Stanley Meiburg
Acting Regional Administrator
U.S. EPA, Region 4
Atlanta Federal Center
61 Forsyth Street, S.W.
Atlanta, Georgia 30303-8960

Dear Mr. Meiburg:

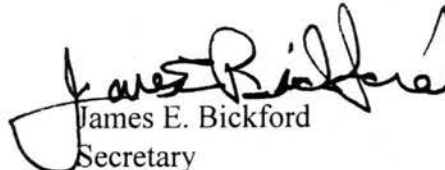
Enclosed for your consideration are five copies of a revision to the Jefferson County portion of Kentucky's State Implementation Plan (SIP). The proposed SIP revision package contains nine Reasonably Available Control Technology (RACT) plans for major sources of oxides of nitrogen (NO_x). The following eight plans replace the version submitted to the U.S. Environmental Protection Agency on November 12, 1999, by the Natural Resources and Environmental Protection Cabinet:

Ford Louisville Assembly Plant
GE Appliances
Kosmos Cement Company
Louisville Gas & Electric Company – Cane Run Generating Station
Louisville Gas & Electric Company – Mill Creek Generating Station
Louisville Medical Center Steam Plant
Oxy Vinyls, LP.
Texas Gas Transmission

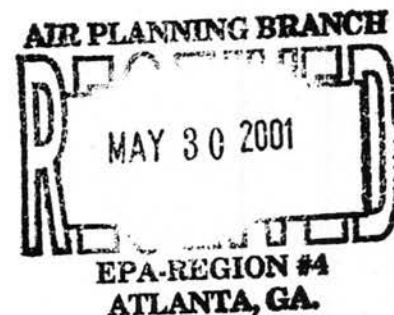
The ninth plan is new for the American Synthetic Rubber Company.

Your prompt consideration of this request is appreciated. If you have any questions or comments concerning this matter, please contact Lona Brewer at the Division for Air Quality at (502) 573-3382 or Jonathan Trout with the Air Pollution Control District of Jefferson County at (502) 574-7251.

Sincerely,


James E. Bickford
Secretary

JEB:mrl
Enclosures
cc: Kay Prince



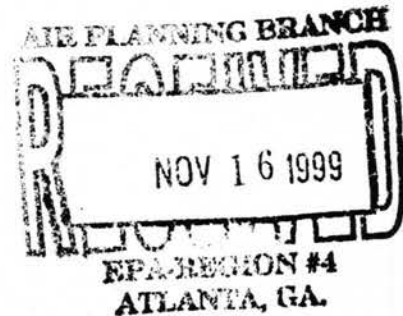
JAMES E. BICKFORD
SECRETARY



PAUL E. PATTON
GOVERNOR

COMMONWEALTH OF KENTUCKY
NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET
OFFICE OF THE SECRETARY
FRANKFORT KENTUCKY 40601
TELEPHONE: (502) 564-3350
November 12, 1999

Mr. John H. Hankinson, Jr.
Regional Administrator
U.S. EPA, Region IV
Atlanta Federal Center
61 Forsyth Street, S.W.
Atlanta, Georgia 30303



Dear Mr. Hankinson:

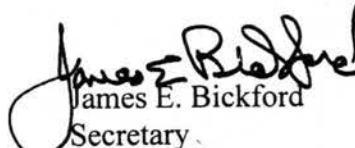
Enclosed are four copies of a request from the Air Pollution Control District of Jefferson County for a revision to the Jefferson County portion of the Kentucky State Implementation Plan.

This proposed SIP revision submittal package contains ten reasonably available control technology (RACT) plans for major sources of oxides of nitrogen (NOx). These plans were developed by the Air Pollution Control District of Jefferson County and apply to the following major sources:

E.I. DuPont de Nemours & Company
Ford Louisville Assembly Plant
GE Appliances
Kosmos Cement Company
Louisville Gas & Electric Company – Cane Run Generating Station
Louisville Gas & Electric Company – Mill Creek Generating Station
Louisville Medical Center Steam Plant
Oxy Vinyls, LP.
Rohm & Haas Company
Texas Gas Transmission

Your prompt consideration of this request is appreciated. If you have any questions or comments, please contact Mr. Arthur L. Williams at (502) 574-8689.

Sincerely,


James E. Bickford
Secretary

JEB:jt

Enclosures



Air Pollution Control Board of Jefferson County Board Order - Amendment 1

This amended Board Order is issued by the Air Pollution Control Board of Jefferson County pursuant to the authority granted in Kentucky Revised Statutes Chapter 77 Air Pollution Control.

Company: Louisville Gas and Electric Company
Mill Creek Generating Station (LG&E/MCGS)
14660 Dixie Highway
Louisville, Kentucky 40272

Background and Discussion

Regulation 6.42 *Reasonably Available Control Technology Requirements for Major Volatile Organic Compound- and Nitrogen Oxides-Emitting Facilities* requires the establishment and implementation of reasonably available control technology (RACT) for certain affected facilities that emit oxides of nitrogen (NO_x) and that are located at a major stationary source for NO_x. Section 4.4 requires that each determination of RACT approved by the Air Pollution Control District of Jefferson County (District) be submitted to the U.S. Environmental Protection Agency (EPA) as a site-specific revision of the Kentucky State Implementation Plan (SIP).

The initial Board Order was approved by the Board on November 8, 1999, and submitted to the EPA by the Kentucky Natural Resources and Environmental Protection Cabinet on November 12, 1999, as a site-specific revision of the Kentucky SIP. Subsequently, the EPA identified issues needing resolution before this NO_x RACT determination would be approved as part of the Kentucky SIP. This amended Board Order addresses those issues.

A Public Hearing on this amended Board Order was held before the Board on October 18, 2000. Based upon the evidence presented at that hearing, the Board determined that approval of this amended Board Order and submittal as a site-specific revision of the Kentucky SIP were appropriate.

Now therefore be it ordered that:

1. The attached NO_x RACT Plan - Amendment 1, applicable to the LG&E/MCGS, is approved by the District. The LG&E/MCGS shall comply with this plan.
2. Compliance with the attached NO_x RACT Plan - Amendment 1 shall be deemed compliance with the requirements of Regulation 6.42 section 1.2, section 1.3, Section 2 to the extent that this Section applies to section 4.3, section 4.3, and Section 5 to the extent that this Section applies to verification of compliance with the requirements pursuant to section 4.3.

3. This amended Board Order shall not be deemed or construed to be the result of any violation of any federal, state, or local statute, regulation, or ordinance for any purpose whatsoever.
4. The LG&E/MCGS has reviewed this amended Board Order and consents to all its requirements and terms.
5. The effective date of this amended Board Order is January 1, 2001. The initial Board Order, approved on November 8, 1999, shall remain in effect until January 1, 2001.

Dated this 18th day of October, 2000.

Air Pollution Control Board
of Jefferson County

By: Robert W. Powell
Robert W. Powell, M.D.
Chairman

Louisville Gas and Electric Company
Mill Creek Generating Station

By: Caryl M. Pfeiffer
Caryl M. Pfeiffer
Director, Environmental Affairs

Air Pollution Control District
of Jefferson County

By: Jesse M. Goldsmith
Jesse M. Goldsmith
Air Pollution Control Officer

Approved as to form and legality:
Air Pollution Control District
of Jefferson County

By: Gaylord B. Ballard
Gaylord B. Ballard
Attorney

NO_x RACT Plan - Amendment 1

1. The oxides of nitrogen (NO_x, expressed as NO₂) emission from each utility boiler shall not exceed the rate as specified below, based upon a rolling 30-day average:

| | |
|--------|-----------------------------|
| Unit 1 | 0.47 lb/mmBtu of heat input |
| Unit 2 | 0.47 lb/mmBtu of heat input |
| Unit 3 | 0.52 lb/mmBtu of heat input |
| Unit 4 | 0.52 lb/mmBtu of heat input |

2. The NO_x emission rate for each utility boiler shall be determined using the methods and procedures specified in NO_x RACT Plan Appendix A - Amendment 1, except that any reference to an annual average shall be read as a rolling 30-day average.
3. The Louisville Gas and Electric Company Mill Creek Generating Station (LG&E/MCGS) shall install, maintain, and operate a NO_x continuous emissions monitoring system (CEMS) for each utility boiler and shall keep records and submit reports and other notifications as specified in NO_x RACT Plan Appendix A - Amendment 1.
4. The LG&E/MCGS shall keep a record identifying all deviations from the requirements of this NO_x RACT Plan and shall submit to the District a written report of all deviations that occurred during the preceding calendar quarter. The report shall contain the following information:
 - A. The boiler number,
 - B. The beginning and ending date of the reporting period,
 - C. Identification of all periods during which a deviation occurred,
 - D. A description, including the magnitude, of the deviation,
 - E. If known, the cause of the deviation, and
 - F. A description of all corrective actions taken to abate the deviation.

If no deviation occurred during the calendar quarter, the report shall contain a negative declaration. Each report shall be submitted within 30 days following the end of the calendar quarter.

5. In lieu of the requirements in this NO_x RACT Plan, the LG&E/MCGS may comply with alternative requirements regarding emission limitations, equipment operation, test methods, monitoring, recordkeeping, or reporting, provided the following conditions are met:
 - A. The alternative requirements are established and incorporated into an operating permit pursuant to a Title V Operating Permit issuance, renewal, or significant permit revision process as established in Regulation 2.16,
 - B. The alternative requirements are consistent with the streamlining procedures and guidelines set forth in section II.A. of *White Paper Number 2 for Improved Implementation of the Part 70 Operating Permits Program*, March 5, 1996, U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards. The overall effect of compliance with alternative requirements shall consider the effect on an intrinsic basis, such as pounds per million Btu of heat input. However,

Louisville Gas and Electric Company
Mill Creek Generating Station

alternative requirements that are developed based upon revisions to the applicable requirements contained in 40 CFR Part 60 or Part 75 shall be approvable pursuant to this NO_x RACT Plan Element,

- C. The U.S. Environmental Protection Agency (EPA) has not objected to the issuance, renewal, or revision of the Title V Operating Permit, and either
- D. If the public comment period preceded the EPA review period, then the District had transmitted any public comments concerning the alternative requirements to EPA with the proposed permit, or
- E. If the EPA and public comment periods ran concurrently, then the District had transmitted any public comments concerning the alternative requirements to EPA no later than 5 working days after the end of the public comment period.

The District's determination of approval of any alternative requirements is not binding on EPA. Noncompliance with any alternative requirement established pursuant to the Title V Operating Permit process constitutes a violation of this NO_x RACT Plan.

History: Approved 11-8-99; effective 1-1-00; amended a1/10-18-00 effective 1-1-01.

**Appendix A to NO_x RACT Plan - Amendment 1
Requirements for NO_x CEMS**

I. General Operating Requirements

- A. Primary measurement requirements.** The LG&E/MCGS shall, for each utility boiler, install, certify, operate, and maintain, in accordance with the requirements of 40 CFR 75, an oxides of nitrogen (NO_x) continuous emission monitoring system (CEMS), consisting of a NO_x pollutant concentration monitor and an oxygen (O₂) or carbon dioxide (CO₂) diluent gas monitor, with an automated data acquisition and handling system for measuring and recording NO_x concentration (in parts per million [ppm]), O₂ or CO₂ concentration (in percent O₂ or CO₂) and NO_x emission rate (in lb/mmBtu of heat input) discharged to the atmosphere. Any reference in this Appendix to an annual average shall be read as a rolling 30-day average. The LG&E/MCGS shall account for total NO_x emissions, both nitrogen oxide (NO) and nitrogen dioxide (NO₂), either by monitoring for both NO and NO₂ or by monitoring for NO only and adjusting the emissions data to account for NO₂.
- B. Primary equipment performance requirements.** The LG&E/MCGS shall ensure that each CEMS used to demonstrate compliance with the NO_x emission limit meets the equipment, installation, and performance specifications in 40 CFR 75 Appendix A, and is maintained according to the quality assurance and quality control procedures in 40 CFR 75 Appendix B. The NO_x emission rate for each utility boiler shall be recorded as lb/mmBtu of heat input.
- C. Primary equipment hourly operating requirements.**
1. The LG&E/MCGS shall ensure that all CEMS are in operation and monitoring the emissions from the associated utility boiler at all times that the utility boiler combusts any fuel except during a period of any of the following:
 - a. Calibration, quality assurance, or preventive maintenance, any of which is performed pursuant to 40 CFR §75.21, 40 CFR 75 Appendix B, District regulations, District permit conditions, or this NO_x RACT Plan, or
 - b. Repair, backups of data from the data acquisition and handling system, or recertification, any of which is performed pursuant to 40 CFR §75.20.
 2. The LG&E/MCGS shall ensure that the following requirements are met:
 - a. Each CEMS and component thereof is capable of completing a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute interval. The LG&E/MCGS shall reduce all volumetric flow, CO₂ concentration, O₂ concentration, NO_x concentration, and NO_x emission rate data collected by the monitors to hourly averages. Hourly averages shall be computed using at least one data point in each 15-minute quadrant of an hour during which the utility boiler combusted fuel during that quadrant of the hour. Notwithstanding this requirement, an hourly average may be computed from at least two data points separated by a minimum of 15 minutes (where the unit operates for more than one quadrant of the hour) if

data are unavailable as a result of the performance of any activity specified in paragraph I.C.1. of this Appendix. The LG&E/MCGS shall use all valid measurements or data points collected during an hour to calculate the hourly averages. All data points collected during an hour shall be, to the extent practicable, evenly spaced over the hour.

- b. Failure of a CO₂ or O₂ diluent concentration monitor, flow monitor, or NO_x pollutant concentration monitor to acquire the minimum number of data points for calculation of an hourly average shall result in the failure to obtain a valid hour of data and the loss of such component data for the entire hour. An hourly average NO_x emission rate in lb/mmBtu of heat input is valid only if the minimum number of data points are acquired by both the pollutant concentration monitor (NO_x) and the diluent monitor (CO₂ or O₂). If a valid hour of data is not obtained, the owner or operator shall estimate and record emissions, moisture, or flow data for the missing hour by means of the automated data acquisition and handling system, in accordance with the applicable procedure for missing data substitution in 40 CFR 75 Subpart D.

D. Optional backup monitor requirements. If the LG&E/MCGS chooses to use two or more CEMS, each of which is capable of monitoring the same stack or duct at a specific utility boiler, then the LG&E/MCGS shall designate one CEMS as the primary monitoring system and shall record this designation in the monitoring plan. The LG&E/MCGS shall designate any other CEMS as a backup CEMS in the monitoring plan. Any other backup CEMS shall be designated as a redundant backup CEMS, non-redundant backup CEMS, or reference method CEMS, as described in 40 CFR §75.20(d). When the certified primary monitoring system is operating and not out-of-control as defined in 40 CFR §75.24, only data from the certified primary monitoring system shall be reported as valid, quality-assured data. Thus, data from a backup CEMS may be reported as valid, quality-assured data only when a backup CEMS is operating and not out-of-control as defined in 40 CFR §75.24 or in the applicable reference method in 40 CFR 60 Appendix A and when the certified primary monitoring system is not operating or is operating but out-of-control. A particular monitor may be designated both as a certified primary monitor for one unit and as a certified redundant backup monitor for another unit.

- E. Minimum measurement capability requirements.** Each CEMS and component thereof shall be capable of accurately measuring, recording, and reporting data, and shall not incur a full scale exceedance, except as provided in section 2.1.2.5 of 40 CFR 75 Appendix A.
- F.** The LG&E/MCGS shall not operate a utility boiler so as to discharge, or allow to be discharged, emissions of NO_x to the atmosphere without accounting for all such emissions in accordance with the methods and procedures specified in this Appendix.
- G.** The LG&E/MCGS shall not disrupt the CEMS, any portion thereof, or any other approved emission monitoring method, and thereby avoid monitoring and recording

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NO_x emissions discharged into the atmosphere, except for periods of recertification or periods when calibration, quality assurance testing, or maintenance is performed in accordance with the provisions of this Appendix.

- H. The LG&E/MCGS shall not retire or permanently discontinue use of the CEMS, any component thereof, or any other approved emission monitoring system under this Appendix except under any one of the following circumstances:
1. The LG&E/MCGS is monitoring NO_x emissions from the utility boiler with another certified monitoring system approved in accordance with the provisions of paragraph I.D. of this Appendix, or
 2. The LG&E/MCGS submits notification of the date of certification testing of a replacement monitoring system.
- I. The quality assurance and quality control requirements in 40 CFR §75.21 that apply to NO_x pollutant concentration monitors and diluent gas monitors shall be met. A NO_x pollutant concentration monitor for determining NO_x emissions shall meet the same certification testing requirements, quality assurance requirements, and bias test requirements as those specified in 40 CFR 75 for an SO₂ pollutant concentration monitor.
- J. **Moisture correction.** If a correction for the stack gas moisture content is needed to properly calculate the NO_x emission rate in lb/mmBtu of heat input (i.e., if the NO_x pollutant concentration monitor measures on a different moisture basis from the diluent monitor), LG&E/MCGS shall either report a fuel-specific default moisture value for each utility boiler operating hour, as provided in 40 CFR §75.11(b)(1), or shall install, operate, maintain, and quality assure a continuous moisture monitoring system, as defined in 40 CFR §75.11(b)(2). Notwithstanding this requirement, if Equation 19-3, 19-4 or 19-8 in Method 19 in Appendix A to 40 CFR Part 60 is used to measure NO_x emission rate, the following fuel-specific default moisture percentages shall be used in lieu of the default values specified in 40 CFR §75.11(b)(1): 5.0%, for anthracite coal; 8.0% for bituminous coal; 12.0% for sub-bituminous coal; 13.0% for lignite coal; and 15.0% for wood.

II. Specific Provisions for Monitoring NO_x Emission Rate (NO_x and diluent gas monitors)

- A. The LG&E/MCGS shall meet the general operating requirements in 40 CFR §75.10 for a NO_x CEMS for each utility boiler. The diluent gas monitor in the NO_x CEMS may measure either O₂ or CO₂ concentration in the flue gases.
- B. The LG&E/MCGS shall calculate hourly and rolling 30-day NO_x emission rates (in lb/mmBtu of heat input) by combining the NO_x concentration (in ppm), diluent concentration (in percent O₂ or CO₂), and percent moisture (if applicable) measurements according to the procedures in 40 CFR 75 Appendix F.

III. Monitoring plan

The LG&E/MCGS shall prepare and maintain a monitoring plan as specified in 40 CFR 75.53. The monitoring plan shall be submitted to the District no later than 45 days prior to the first scheduled certification test.

IV. Recordkeeping Provisions

- A. The LG&E/MCGS shall maintain for each utility boiler a file of all measurements, data, reports, and other information required by this Appendix at the stationary source in a form suitable for inspection for at least 5 years from the date of each record. This file shall contain the following information:
1. The data and information required in paragraph IV.B. of this Appendix,
 2. The component data and information used to calculate values required in paragraph IV.B. of this Appendix,
 3. The current monitoring plan as specified in 40 CFR §75.53, and
 4. The quality control plan as described in 40 CFR 75 Appendix B.
- B. **NO_x emission record provisions.** The LG&E/MCGS shall record hourly the following information as measured and reported from the certified primary monitor, certified back-up or certified portable monitor, or other approved method of emissions determination for each utility boiler:
1. Date and hour,
 2. Hourly average NO_x concentration (ppm, rounded to the nearest tenth),
 3. Hourly average diluent gas concentration (percent O₂ or percent CO₂, rounded to the nearest tenth),
 4. Hourly average NO_x emission rate (lb/mmBtu of heat input, rounded to nearest hundredth),
 5. Hourly average NO_x emission rate (lb/mmBtu of heat input, rounded to nearest hundredth) adjusted for bias, if a bias adjustment factor is required by 40 CFR §75.24 (d),
 6. Percent monitoring system data availability (recorded to the nearest tenth of a percent), calculated pursuant to 40 CFR §75.32,
 7. Method of determination for hourly average NO_x emission rate using Codes 1-55 in 40 CFR §75.57 Table 4A, and
 8. Unique code identifying emissions formula used to derive hourly average NO_x emission rate, as provided for in 40 CFR §75.53.

V. Certification, Quality Assurance, and Quality Control Record Provisions

- A. For each NO_x pollutant concentration monitor and diluent gas monitor, the LG&E/MCGS shall record the following:
1. Results of all trial runs and certification tests and quality assurance activities and measurements (including all reference method field test sheets, charts, records of

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- combined system responses, laboratory analyses, and example calculations) necessary to substantiate compliance with all relevant requirements of this Appendix,
2. Bias test results as specified in 40 CFR 75, Appendix A, section 7.6.4,
 3. The appropriate bias adjustment factor as follows:
 - a. The value derived from Equations A-11 and A-12 in 40 CFR 75 Appendix A for any monitoring system or component that failed the bias test, or
 - b. A value of 1.0 for any monitoring system or component that passed the bias test, and
 4. The component/system identification code.
- B. For each NO_x pollutant concentration monitor and diluent gas monitor, the LG&E/MCGS shall record the following for all daily and 7-day calibration error tests, including any follow-up tests after corrective action:
1. Instrument span and span scale,
 2. Date and hour,
 3. Reference value (i.e., calibration gas concentration or reference signal value, in ppm or other appropriate units),
 4. Observed value (monitor response during calibration, in ppm or other appropriate units), (flag if using alternative performance specification for low emitters or differential pressure monitors),
 5. Percent calibration error (rounded to the nearest tenth of a percent),
 6. Calibration gas level,
 7. Test number and reason for test,
 8. For 7-day calibrations tests for certification or recertification, a certification from the cylinder gas vendor or CEMS vendor that calibration gases as defined in 40 CFR §72.2 and 40 CFR 75 Appendix A were used to conduct calibration error testing,
 9. Description of any adjustments, corrective actions, or maintenance following a test,
 10. For quality test for off-line calibration, whether the unit is off-line or on-line, and
 11. The component/system identification code.
- C. For each NO_x pollutant concentration monitor and diluent gas monitor, the LG&E/MCGS shall record the following for the initial and all subsequent linearity checks, including any follow-up tests after corrective action:
1. Instrument span and span scale,
 2. Calibration gas level,
 3. Date, hour, and minute of each gas injection at each calibration gas level,
 4. Reference value (i.e., reference gas concentration for each gas injection at each calibration gas level, in ppm or other appropriate units),
 5. Observed value (monitor response to each reference gas injection at each calibration gas level, in ppm or other appropriate units),
 6. Mean of reference values and mean of measured values at each calibration gas level
 7. Linearity error at each of the reference gases concentrations (rounded to the

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- nearest tenth of a percent), (flag if using alternative performance specification),
8. Test number and reason for test (flag if aborted test),
 9. Description of any adjustments, corrective action, or maintenance prior to a passed test or following a failed test,
 10. The number of out-of-control hours, if any, following any tests, and
 11. The component/system identification code.
- D. For each NO_x pollutant concentration monitor and diluent gas monitor, the LG&E/MCGS shall record the following information for the initial and all subsequent relative accuracy tests and test audits:
1. Reference method(s) used,
 2. Individual test run data from the relative accuracy test audit for the NO_x pollutant concentration monitor or diluent gas monitor, including:
 - a. Date, hour, and minute of beginning of test run,
 - b. Date, hour, and minute of end of test run,
 - c. Monitoring system identification code,
 - d. Test number and reason for test,
 - e. Operating load level (low, mid, high, or normal, as appropriate) and number of load levels comprising test,
 - f. Normal load indicator for flow RATAs (except for peaking units),
 - g. Units of measure,
 - h. Run number,
 - i. Run data from CEMS being tested, in the appropriate units of measure,
 - j. Run data for reference method, in the appropriate units of measure,
 - k. Flag value (0, 1, or 9, as appropriate) indicating whether run has been used in calculating relative accuracy and bias values or whether the test was aborted prior to completion,
 - l. Average gross unit load (expressed as a total gross unit load rounded to the nearest MWe or as steam load rounded to the nearest thousand lb/hr), and
 - m. Flag to indicate whether an alternative performance specification has been used,
 3. Calculations and tabulated results, as follows:
 - a. Arithmetic mean of the monitoring system measurement values, reference method values, and of their differences, as specified in Equation A-7 in 40 CFR 75 Appendix A,
 - b. Standard deviation, as specified in Equation A-8 in 40 CFR 75 Appendix A,
 - c. Confidence coefficient, as specified in Equation A-9 in 40 CFR 75 Appendix A,
 - d. Statistical "t" value used in calculations,
 - e. Relative accuracy test results, as specified in Equation A-10 in 40 CFR 75 Appendix A,
 - f. Bias test results as specified in section 7.6.4 in 40 CFR 75 Appendix A,
 - g. Bias adjustment factor from Equation A-12 in 40 CFR 75 Appendix A for any monitoring system or component that failed the bias test (except as otherwise provided in section 7.6.5 in 40 CFR 75 Appendix A) and 1.000 for any

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- monitoring system or component that passed the bias test,
- h. F-factor value(s) used to convert NO_x pollutant concentration and diluent gas (O₂ or CO₂) concentration measurements into NO_x emission rates (in lb/mmBtu),
 - i. The raw data and calculated results for any stratification tests performed in accordance with sections 6.5.6.1 through 6.5.6.3 in 40 CFR 75 Appendix A, and
 - j. For moisture monitoring systems, the coefficient "K" factor or other mathematical algorithm used to adjust the monitoring system with respect to the reference method,
4. Description of any adjustment, corrective action, or maintenance prior to a passed test or following a failed or aborted test,
 5. For each run of each test using Method 7E or 3A in Appendix A of 40 CFR 60 to determine NO_x, CO₂, or O₂ concentration the following:
 - a. Pollutant or diluent gas being measured,
 - b. Span of reference method analyzer,
 - c. Type of reference method system (e.g., extractive or dilution type),
 - d. Reference method dilution factor (dilution type systems, only),
 - e. Reference gas concentration (low, mid, and high gas levels) used for the 3-point, pre-test analyzer calibration error test (or, for dilution type reference method systems, for the 3-point, pre-test system calibration error test) and for any subsequent recalibrations,
 - f. Analyzer responses to the zero-, mid-, and high-level calibration gases during the 3-point pre-test analyzer (or system) calibration error test and during any subsequent recalibration(s),
 - g. Analyzer calibration error at each gas level (zero, mid, and high) for the 3-point, pre-test analyzer (or system) calibration error test and for any subsequent recalibration(s) (percent of span value),
 - h. Upscale gas concentration (mid or high gas level) used for each pre-run or post-run system bias check or, for dilution type reference method systems, for each pre-run or post-run system calibration error check,
 - i. Analyzer response to the calibration gas for each pre-run or post-run system bias (or system calibration error) check,
 - j. The arithmetic average of the analyzer responses to the zero-level gas, for each pair of pre- and post-run system bias (or system calibration error) checks,
 - k. The arithmetic average of the analyzer responses to the upscale calibration gas, for each pair of pre- and post-run system bias (or system calibration error) checks,
 - l. The results of each pre-run and each post-run system bias (or system calibration error) check using the zero-level gas (percentage of span value),
 - m. The results of each pre-run and each post-run system bias (or system calibration error) check using the upscale calibration gas (percentage of span value),
 - n. Calibration drift and zero drift of analyzer during each RATA run (percentage

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- of span value),
- o. Moisture basis of the reference method analysis,
 - p. Moisture content of stack gas, in percent, during each test run (if needed to convert to moisture basis of CEMS being tested),
 - q. Unadjusted (raw) average pollutant or diluent gas concentration for each run,
 - r. Average pollutant or diluent gas concentration for each run, corrected for calibration bias (or calibration error) and, if applicable, corrected for moisture,
 - s. The F-factor used to convert reference method data to units of lb/mmBtu (if applicable)
 - t. Date(s) of the latest analyzer interference test(s),
 - u. Results of the latest analyzer interference test(s),
 - v. Date of the latest NO₂ to NO conversion test (Method 7E only),
 - w. Results of the latest NO₂ to NO conversion test (Method 7E only), and
 - x. For each calibration gas cylinder used during each RATA, record the cylinder gas vendor, cylinder number, expiration date, pollutant(s) in the cylinder, and
- 6. The number of out-of-control hours, if any, following any tests, and
 - 7. The component/system identification code.

VI. Notifications

- A. The LG&E/MCGS or a designated representative shall submit notice to the District for the following purposes, as required by this Appendix:
 - 1. Initial certification and recertification test notifications. Written notification shall be submitted of initial certification tests, recertification tests, and revised test dates as specified in 40 CFR §75.20 for continuous emission monitoring systems, except for testing only of the data acquisition and handling system, and
 - 2. Notification of initial certification testing. Initial certification test notifications shall be submitted not later than 45 days prior to the first scheduled day of initial certification testing. Testing may be performed on a date other than that already provided in a notice under this subparagraph as long as notice of the new date is provided either in writing or by telephone or other means at least 7 days prior to the original scheduled test date or the revised test date, whichever is earlier.
- B. For retesting following a loss of certification under 40 CFR §75.20(a)(5) or for recertification under 40 CFR §75.20(b), notice of testing shall be submitted either in writing or by telephone at least 7 days prior to the first scheduled day of testing, except that in emergency situations when testing is required following an uncontrollable failure of equipment that results in lost data, notice shall be sufficient if provided within 2 business days following the date when testing is scheduled. Testing may be performed on a date other than that already provided in a notice under this subparagraph as long as notice of the new date is provided by telephone or other means at least 2 business days prior to the original scheduled test date or the revised test date, whichever is earlier.
- C. Notwithstanding the notice requirements of paragraph B. above, the LG&E/MCGS may elect to repeat a certification test immediately, without advance notification, whenever

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the LG&E/MCGS has determined during the certification testing that a test was failed or that a second test is necessary in order to attain a reduced relative accuracy test frequency.

- D. Written notice shall be submitted, either by mail or facsimile, of the date of periodic relative accuracy testing performed under 40 CFR Part 75 Appendix B no later than 21 days prior to the first scheduled day of testing. Testing may be performed on a date other than that already provided in a notice under this subparagraph as long as notice of the new date is provided either in writing or by telephone or other means acceptable to the District, and the notice is provided as soon as practicable after the new testing date is known, but no later than 24 hours in advance of the new date of testing.
- E. Notwithstanding the notice requirements under paragraph D. above, the LG&E/MCGS may elect to repeat a periodic relative accuracy test immediately, without additional notification whenever the LG&E/MCGS has determined that a test was failed, or that a second test is necessary in order to attain a reduced relative accuracy test frequency. If an observer from the District is present when a test is rescheduled, the observer may waive all notification requirements under paragraph D. above for the rescheduled test.

VII. Quarterly reports

- A. The LG&E/MCGS shall, within 30 days following the end of each calendar quarter, submit a report to the District that includes the following data and information for each utility boiler:
 - 1. The information and hourly data required in this Appendix, including all emissions and quality assurance data, and
 - 2. Average NO_x emission rate (lb/mmBtu of heat input, rounded to the nearest hundredth) during the rolling 30-day averaging periods.
- B. The LG&E/MCGS shall submit a certification in support of each quarterly emissions monitoring report. This certification shall indicate whether the monitoring data submitted were recorded in accordance with the requirements of this Appendix. In the event of any missing data periods, this certification shall include a description of the measures taken to minimize or eliminate the causes for the missing data periods.



MATTHEW G. BEVIN
GOVERNOR

CHARLES G. SNAVELY
SECRETARY

ENERGY AND ENVIRONMENT CABINET

300 SOWER BOULEVARD
FRANKFORT, KENTUCKY 40601
TELEPHONE: 502-564-3350
TELEFAX: 502-564-7484

R. BRUCE SCOTT
DEPUTY SECRETARY

March 24, 2017

Ms. V. Anne Heard
Acting Regional Administrator
U.S. EPA, Region 4
Sam Nunn Atlanta Federal Center
61 Forsyth Street, SW
Atlanta, Georgia 30303

Dear Ms. Heard:

On behalf of the Commonwealth of Kentucky, the Energy and Environment Cabinet (Cabinet) respectfully requests that the EPA approve the enclosed revision to the Jefferson County portion of the Kentucky State Implementation Plan (SIP).

The Louisville Metro Air Pollution Control District (District) requests to replace the Board Order Louisville Medical Center Steam Plant (NO_x RACT Plan 02/21/01) in the EPA-approved source specific requirements portion of the Kentucky SIP (40 CFR § 52.920(d)) with the attached Louisville Medical Center Steam Plant NO_x RACT Plan dated and effective January 18, 2017.

If you have any questions or comments concerning this matter, please contact Ms. Melissa Duff, Assistant Director, Division for Air Quality, at (502) 782-6597 or melissa.duff@ky.gov.

Sincerely,

Charles G. Snavely
Secretary

CGS/SA/amb
c: Beverly Banister, EPA Region 4
Scott Davis, EPA Region 4
Lynorae Benjamin, EPA Region 4
Enclosures



AIR POLLUTION CONTROL DISTRICT
LOUISVILLE, KENTUCKY

GREG FISCHER
MAYOR

KEITH H. TALLEY, SR.
DIRECTOR

February 17, 2017

Mr. Sean Alteri, Director
Division for Air Quality
300 Sower Blvd, 2nd Floor
Frankfort, KY 40601

Dear Mr. Alteri:

The Air Pollution Control District of Jefferson County (District) requests that the enclosed material be submitted to the U.S. Environmental Protection Agency (EPA) as revisions to the Jefferson County portion of the Kentucky State Implementation Plan (SIP). Enclosed are two paper copies, one of each for the EPA and one of each for the Kentucky Division for Air Quality (DAQ). Electronic copies of all materials included in this package have been forwarded separately by e-mail.

This package contains one (1) SIP requests. The District requests that the Commonwealth request the following:

1. Louisville Medical Center, Inc., NO_x RACT Plan Amendment 4 (January 18, 2017) – to replace Board Order Louisville Medical Center Steam Plant (NO_x RACT Plan 02/21/01) in the EPA-approved source specific requirements portion of the Kentucky SIP (40 CFR §52.920(d)).

Your prompt consideration of this request is appreciated. If you have any questions or comments, please contact Byron L. Gary at (502) 574-7253.

Sincerely,

Keith Talley, Sr.
Director

Enclosures



LOUISVILLE METRO AIR POLLUTION CONTROL DISTRICT CHECKLIST FOR SIP SUBMITTALS



Administrative Materials¹

- a) Letter²
- b) *Adoption* Signed Board Minutes adopting Plan
- c) Legal Authority - *see Background & Discussion*
- d) *Actual Regulation or document, including changes made*
 - i. Copy of Regulation or Plan
 - ii. Redline/Strikethrough (if reg change) - *see Amendment 1 (currently in SIP) & Amendment 3 (last submitted version)*
- e) *Commonwealth/Local procedural requirements*
 - i. Affidavit of 7-21 day public notice
 - ii. *See also* Louisville Metro Air Pollution Control Board: Board Order – Amendment 4
- f) Affidavit of 30 day public notice
- g) Signed Public Hearing Minutes
- h) Comment & Response document

Technical Support³

- a) Pollutant Identification
- b) Area Identification
- c) Quantification of changes *see spreadsheet comparing Amendment 1 to Amendment 3 of the NO_x RACT Plan, and explanation above in Pollutant and Area Identification*
- d) 110(l) Demonstration - *see explanation above in Pollutant and Area Identification*
- e) Modeling (if needed) - *see spreadsheet comparing Amendment 1 to Amendment 3 of the NO_x RACT Plan, and explanation above in Pollutant and Area Identification*
- f) Evidence limitations are based on continuous emission reduction technology (if necessary)
- g) Evidence plan contains emission limitations, work practice standards and recordkeeping/reporting requirements (if necessary) - *see the Plan*
- h) Compliance/enforcement strategies - *NO_x RACT Plan is an enforceable Board Order*
- i) Special economic and technological justifications (if required)
- j) Regulatory Impact Assessment⁴ (N/A)

¹ 40 CFR Part 51, Appendix V, 2.1

² Letter from Commonwealth is technically required. Letter to DAQ may be used to fulfill some administrative requirements.

³ 40 CFR Part 51, Appendix V, 2.2

⁴ RIA is not specifically required by App. V. For routine regulation updates (e.g., IBRs), required technical support may be included in the RIA.

REQUEST FOR EPA ACTION

The Air Pollution Control District of Jefferson County (District) requests a revision to the Jefferson County portion of the Kentucky State Implementation Plan (SIP):

Replace the Board Order Louisville Medical Center Steam Plant (NO_x RACT Plan 02/21/01) in the EPA-approved source specific requirements portion of the Kentucky SIP (40 CFR §52.920(d)) with the attached Louisville Medical Center Steam Plant NO_x RACT Plan dated and effective January 18, 2017.

Pollutant/Area Identification

Pollutant: All
Affected Area: Jefferson County, Kentucky
Location: Louisville MSA
Area Designation: PM_{2.5} (1997 Standard) – Nonattainment
SO₂ (2010 Standard) – Partial Nonattainment
Ozone (2008 Standard) - Maintenance

Resulting Emissions Changes:

The only change regarding emissions is the replacement of former Requirement 7 (including a 10% seasonal capacity factor for boilers #1 & #3) with new Requirements 1 and 2 (a 32.8 ton annual limit and a 4 ton ozone season limit for NO_x, respectively). As shown in the attached spreadsheet quantifying changes (2.2(c)&(e) 20161025 Lou Med NO_x RACT Am 1 v Am 4.xlsx), the new limits are slightly more conservative than the previous limit of a 10% seasonal capacity factor, which resulted in a 4.04 ton NO_x potential to emit (PTE) during the ozone season, and a 32.8 ton annual PTE per boiler. The changes between Amendment 1 and the current version of this NO_x RACT therefore result in an emissions reduction of .04 tons of NO_x per boiler for boilers #1 & #3 during the ozone season.

Note:

The version of the NO_x RACT Plan for Louisville Medical Center currently approved in the EPA-approved source specific requirements portion of the Kentucky SIP (40 CFR §52.920(d)) is Amendment 1. Amendment 3 (dated and effective August 21, 2013) was submitted to the EPA with a request to replace Amendment 1 on October 29, 2013, but no action has been taken on that submittal.

Below is a summary of changes between Amendment 4 (submitted in this SIP request) and Amendment 1 (currently approved into the SIP) and Amendment 3 (the last version submitted to the EPA, but not acted upon).

Changes made between Amendment 1 & Amendment 4:

- Addition of new Requirements numbered 1 & 2 outlining emissions limits for Boilers #1 & #3.;
- Specification of averaging period in Requirements 3 & 4 (former Requirements 1 & 2);
- Addition of Boilers #1 & #3 to Requirements 5 & 6 (annual performance testing and record of non-routine boiler maintenance activities – former Requirements 3 & 4, respectively);
- Requirement that all testing shall be conducted at 90% or greater of maximum rated heat input capacity of the boiler to Requirement 5.C. (formerly Requirement 3.C.);
- Elimination of former Requirement 6;
- Elimination of former Requirements 7 & 8, outlining requirements for boilers #1 & #3 (see new requirements 1 & 2).

Changes made between Amendment 3 & Amendment 4:

- Replacement of Requirements 1 & 2 (a 0.20 lb/MMBtu limit for Boiler # 3, and a 0.10 lb/MMBtu limit for Boiler #1) with new Requirements 1 & 2 outlining limits for Boilers #1 & #3.

**Minutes
Regular Meeting
of the
Louisville Metro Air Pollution Control Board**

January 18, 2017

A regular meeting of the Louisville Metro Air Pollution Control Board was called to order on Wednesday, January 18, 2017, at 10:00 a.m. in the Edison Room, at 701 W. Ormsby Ave., Louisville, Kentucky, by the Chairman, Dr. Robert Powell. Other Board members present were: Carl Hilton, Bill Jacob, and Dr. Neville Pinto. A quorum was present.

The following Louisville Metro Air Pollution Control District staff members were present: Keith Talley, Sr., Rachael Hamilton, Matt King, Paul Aud, Michelle, King, Tom Nord, Billy DeWitt, Rick Williams, Cherri Steiner, Kristie Mallory, Tina Oakes, Amber Mudd, Steve Oswald, Mario Beeler, Byron Gary, Dee Lynch, Louie Kurucz, Craig Butler, Bradley Coomes, Bryan Paris, and Susan Bowman. Assistant County Attorneys Stacy Fritze Dott and Peter Ervin and County Attorney staff member Tammy Brown were also present.

The following guests were present: James McDonald, AECOM; Jon O'Neil, Marcus Paint; Emily McKinney, Frost, Brown, Todd, LLC; Dennis Conniff, Frost, Brown, Todd, LLC; Eric Wallin, Swift Pork Company; Tim Stein, Swift Pork Company; Cheryl Fisher, Accord Advising LLC, Corinne Greenberg, Carbide Industries LLC; Micah Revell, BGD; Philip Imber, LGE & KU Energy, LLC; Barb Hall, Ford KTP; and Mike DeBusschere, NSF/KEC.

Public Recognitions

Mary Ellen Wiederwohl, Chief of Louisville Forward presented Dr. Neville Pinto with a plaque to thank and honor him for his many years of commitment and service to the Louisville community. Dr. Powell also extended his thanks on behalf of the Board and District.

Approval of Minutes

The minutes of the regular Board meeting held on December 21, 2016, were approved with no corrections.

The minutes of the Policy meeting held on January 4, 2017, were approved with no corrections.

New Business

1. Agreed Board Order with ConAgra Foods Packaged Foods, LLC

Mr. Matt King recommended on behalf of the District that the Board adopt the Order with ConAgra Foods Packaged Foods, LLC.

Motion: Mr. Bill Jacob moved to adopt the Order.

The motion was seconded and passed unanimously.

2. Agreed Board Order with Swift Pork Company

Mr. Matt King recommended on behalf of the District that the Board adopt the Order with Swift Pork Company.

Motion: Mr. Carl Hilton moved to adopt the Order.

The motion was seconded and passed unanimously.

3. Amended Agreed Board Order for a NOx RACT Plan with Louisville Medical Center, Inc.

Mr. Paul Aud recommended on behalf of the District that the Board adopt the amended Order with Louisville Medical Center, Inc.

Motion: Mr. Bill Jacob moved to adopt the amended Order.

The motion was seconded and passed unanimously.

Committee Reports

Mr. Bill Jacob reported that the Policy Committee convened on January 4, 2017, and approved a 30-day public comment period for draft amendments to Regulation 2.05, *Prevention of Significant Deterioration of Air Quality*, Version 12 and Regulation 3.01, *Ambient Air Quality Standards*, Version 7. Dr. Powell confirmed that copies of the proposed regulations were publicly available for review and comment.

Staff Reports

A. Director

Keith Talley, Director, updated the Board on Louisville Metro's participation in 100 Resilient Cities, which focuses on helping cities worldwide become more resilient to physical, social, and economic challenges. There will be an agenda-setting workshop January 31, 2017, and the District will be represented.

Mr. Talley informed the Board about recent meetings with the Rubbertown Emergency Action (REACT) and the West Jefferson County Community Task Force (WJCCTF). Similar topics, including the District's odor investigation process and local air toxics program, were discussed at both meetings. Mr. Talley informed the Board that the District would be adding automated gas chromatography instrumentation to its Firearms Training air monitoring site. This will allow collections of real-time data on toxic and ozone-forming chemicals in the ambient air in the Rubbertown area. The District's goal is to have this new equipment installed by the end of 2017. The data will be available on AirNow.

Mr. Talley stated that, in accordance with an EPA mandate, the District will add a Photochemical Assessment Monitoring System (PAMS) to the Bowman Field/Cannons Lane location. The PAMS equipment will be similar to the automated gas chromatography equipment planned for the Firearms Training site and will focus on ozone-forming volatile organic compounds (VOCs).

Mr. Talley informed the Board that the EPA has selected a project in Rubbertown under its Regional Applied Research Effort (RARE) grant as an upcoming test site for Next Generation Emission Measurement (NGEM) devices for fugitive; area source and fence-line toxic pollutants. In accordance with EPA regulations and protocols, the EPA will release data from the RARE project. The District will work in collaboration with this project by assisting with the siting and operation of sensors being used. The District will work hard to support EPA and foster additional research and community opportunities in Louisville. In response to requests by the community, the EPA and District will be looking for opportunities to improve community involvement and relations.

Mr. Talley commended Brian Bingham with the Metropolitan Sewer District for attending the recent community meetings and addressing sewer odor complaints regarding the collection system and Morris Forman Waste Water Treatment Plant.

In response to questions about the method for validating real-time monitoring data, Billy DeWitt, Air Monitoring Program Manager, explained the use of quality control checks to look for signs of instrument malfunction. Ms. Hamilton distinguished the District's federally required QA/QC program from other air monitoring projects like the sampling conducted by the WJCCTF. The District's data must be validated in accordance with federal standards. Raw data is available through AirNow; validated data is available from EPA's Air Quality System (AQS).

In response to a question about the equipment to be used in the RARE project and whether it can fingerprint diesel fuel sources, Ms. Hamilton stated that diesel particulates are not a PAMS VOC concern. Mr. DeWitt explained also that this study will focus on cumulative sources that are specific to the Rubbertown area.

B. Air Quality Report

The air quality monitoring report was submitted for filing. A copy is attached to the original minutes.

C. Enforcement Status Report

The enforcement status report was submitted for filing. A copy is attached to the original minutes.

D. Excess Emission Event Report

The excess emission event report was submitted for filing. A copy is attached to the original minutes.

E. Lawn Care for Cleaner Air Annual Report

The lawn care for cleaner air report was submitted for filing. A copy is attached to the original minutes.

Next Meeting

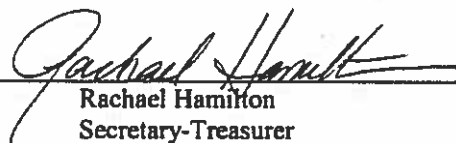
The next regular Board meeting is scheduled for Wednesday, February 15, 2017, at 10:00 a.m.

Adjourn

The meeting was adjourned at 10:59 a.m.



Robert W. Powell, M.D.
Chairman



Rachael Hamilton
Secretary-Treasurer

**Louisville Metro Air Pollution Control Board
Board Order – Amendment 4**

This amended Board Order is issued by the Louisville Metro Air Pollution Control Board pursuant to the authority granted in Kentucky Revised Statutes Chapter 77 Air Pollution Control.

Owner: Louisville Medical Center, Inc.
Source: Louisville Medical Center, Inc., Steam and Chilled Water Plant
235 Abraham Flexner Way
Louisville, KY 40202

Background and Discussion

Regulation 6.42 *Reasonably Available Control Technology Requirements for Major Volatile Organic Compound- and Nitrogen Oxides-Emitting Facilities* requires the establishment and implementation of reasonably available control technology (RACT) for certain affected facilities that emit oxides of nitrogen (NO_x) and that are located at a major stationary source for NO_x. Section 4.4 requires that each determination of RACT approved by the Air Pollution Control District of Jefferson County (District) be submitted to the U.S. Environmental Protection Agency (EPA) as a site-specific revision of the Kentucky State Implementation Plan (SIP).

The initial Board Order was approved by the Board on November 8, 1999, and submitted to the EPA by the Kentucky Natural Resources and Environmental Protection Cabinet (KNREPC) on November 12, 1999, as a site-specific revision of the Kentucky SIP. Subsequently, the EPA identified issues needing resolution before this NO_x RACT determination would be approved as part of the Kentucky SIP. Board Order Amendment 1 was approved by the Board on February 21, 2001. Board Order Amendment 2 was approved by the Board on March 19, 2008. Board Order Amendment 3 was approved by the Board on August 21, 2013.

The company has agreed to annual and ozone season NO_x emission limits for Boilers #1 and #3. The District is amending Board Order Amendment 3 to include these limits in accordance with the requirements of Section 110(l) of the Clean Air Act. No increase in emissions will result from this amendment.

Now therefore be it ordered that:

1. The attached NO_x RACT Plan - Amendment 4, applicable to the Louisville Medical Center, Inc., is approved by the District. The Louisville Medical Center, Inc. shall comply with this plan.

2. Compliance with the attached NO_x RACT Plan - Amendment 4 shall be deemed compliance with the requirements of Regulation 6.42 section 1.2, section 1.3, Section 2 to the extent that this Section applies to section 4.3, and Section 5 to the extent that this Section applies to verification of compliance with the requirements pursuant to section 4.3.
3. This amended Board Order shall not be deemed or construed to be the result of any violation of any federal, state, or local statute, regulation, or ordinance for any purpose whatsoever.
4. The Louisville Medical Center, Inc. has reviewed this amended Board Order and consents to all its requirements and terms.
5. This amended Board Order is effective on the date of its adoption by the Board.

Dated this 18th day of January, 2017

Louisville Metro Air Pollution
Control Board

By: Robert W. Powell, M.D.
Robert W. Powell, M.D.
Chairman

Louisville Medical Center, Inc.

By: John Bartley
John Bartley
General Manager

Louisville Metro Air Pollution
Control District

By: Paul Aud 1-18-17
Paul Aud
Air Pollution Control Officer

Approved as to form and legality:

By: Stacy Fritz Dott
Stacy Fritz Dott
Assistant County Attorney

NO_x RACT Plan - Amendment 4

1. The NO_x (expressed as NO₂) emission from Boilers #1 and #3 shall not exceed 32.8 tons per year per boiler, based on a 30 day rolling average period.
2. The owner or operator shall comply with a 4 ton limit for NO_x (Expressed as NO₂) during ozone season (May through September) for each Boiler #1 and Boiler #3.
3. The oxides of nitrogen (NO_x, expressed as NO₂) emission from each of Boiler #2, Boiler #4, and Boiler #5 while natural gas is combusted shall not exceed 0.20 pound per million Btu of heat input, based on a 30 day rolling average period.
4. The NO_x (expressed as NO₂) emission from Boiler #4, Boiler #5, and Boiler #6 while coal is combusted shall not exceed 0.50 pound per million Btu of heat input, based on a 30 day rolling average period.
5. The Louisville Medical Center, Inc. shall conduct an annual performance test for NO_x for each of the following: Boiler #1, Boiler #2, Boiler #3, Boiler #4, Boiler #5, and Boiler #6. If the requirements of Regulation 6.42 *Reasonably Available Control Technology Requirements for Major Volatile Organic Compound- and Nitrogen Oxides-Emitting Facilities*, section 5.1 are met, and subject to the annual performance test schedule reinstatement provision, performance testing may be done on a biennial schedule. Performance testing shall meet the following requirements:
 - A. Emissions concentrations and the mass determinations shall be obtained using Reference Methods of 40 CFR Part 60 Appendix A. The following methods shall be used:
 - (1) Method 1 or 1A, which furnishes guidance in site and traverse selection for sampling velocity at traverse points in stationary sources,
 - (2) Method 2, 2A, 2B, 2C, 2D, 2E, 2F, 2G, or 2H, which applies to measurements of gas volumetric flow rates,
 - (3) Method 3, 3A, 3B, or 3C, which is applicable for determining the concentrations of one or more of the following gases: carbon dioxide, oxygen, carbon monoxide, nitrogen, and methane,
 - (4) Method 4, which determines the moisture content in stack gases, and
 - (5) Method 7, 7A, 7B, 7C, 7D, or 7E, which provides the analytical method for determining the concentration of NO_x emissions from stationary sources.
 - B. The use of other Reference Methods that are added to 40 CFR 60 Appendix A, alternative tests, or modifications to the Reference Methods listed in NO_x RACT Plan Element (Element) No. 5.A. may be proposed by the Louisville Medical Center Steam Plant as part of the testing plan required by Element No. 5.D. Such methods may be used if approved in writing by the Louisville Metro Air Pollution Control District (District).

- C. Performance testing shall meet the requirements of Regulation 1.04, *Performance Tests*, which are not addressed in this Element. All testing shall be conducted at 90% or greater of the maximum rated heat input capacity of the boiler.
 - D. A notification of intent to conduct a performance test shall be submitted to the District at least 25 working days in advance of the projected starting date for the performance test. The notification shall include the proposed test methods to be used.
 - E. If a pre-test conference to discuss the proposed test methods is deemed necessary by the District, a pre-test conference shall be arranged by District personnel.
 - F. At least 10 working days' prior notice of the scheduled starting date for the performance test shall be provided to the District.
 - G. A performance test report shall be submitted to the District within 60 days of completion of performance testing. The report shall include the quantity and type of fuel combusted during each 1-hr test run and calculations used to determine emissions. The NO_x emission rate shall be expressed in both pounds per hour and pounds per million Btu formats. The raw data shall be retained by the Louisville Medical Center, Inc. for a minimum of 5 years and made available to the District upon request. Selected portions of the raw data used to calculate the emissions shall be included in the report in a format provided by the District.
6. The Louisville Medical Center, Inc. shall, each year prior to April 1, perform and make a record of the following non-routine boiler maintenance activities for Boiler #1, Boiler #2, Boiler #3, Boiler #4, Boiler #5, and Boiler #6:
- A. Inspect the fuel combustion system and, as needed, clean or replace the components of the fuel combustion system.
 - B. Inspect the flame pattern for the boiler and make any needed adjustments to the fuel combustion system to optimize the flame pattern to minimize total emissions of NO_x and carbon monoxide,
 - C. Inspect the combustion control system to determine whether the combustion control system is operating properly and the air-to-fuel ratio is correctly calibrated and make any needed system adjustments or replacements,
 - D. Adjust the air-to-fuel ratio to minimize excess air and maximize boiler efficiency, and
 - E. Inspect all other components of the boiler and make any needed adjustments or repairs to improve boiler efficiency.
7. The Louisville Medical Center, Inc. shall include in each report pursuant to Element No. 8 a summary of the boiler maintenance activities required by Element No. 6 that occurred during the preceding semi-annual period.
8. The Louisville Medical Center, Inc. shall keep a record identifying all deviations from the requirements of this NO_x RACT Plan and shall submit to the District a written report of all deviations that occurred during the preceding semi-annual period. Semi-annual periods shall run from January 1 to June 30 and July 1 to December 31. The report shall contain the following information:

- A. The boiler number,
- B. The beginning and ending date of the reporting period,
- C. Identification of all periods during which a deviation occurred,
- D. A description, including the magnitude, of the deviation,
- E. If known, the cause of the deviation, and
- F. A description of all corrective actions taken to abate the deviation.

If no deviation occurred during the semi-annual period, the report shall contain a negative declaration. Each report shall be submitted within 60 days following the end of the semi-annual period.

9. In lieu of the requirements in this NO_x RACT Plan, the Louisville Medical Center, Inc. may comply with alternative requirements regarding emission limitations, equipment operation, test methods, monitoring, recordkeeping, or reporting, provided the following conditions are met:

- A. The alternative requirements are established and incorporated into an operating permit pursuant to a Title V Operating Permit issuance, renewal, or significant permit revision process as established in Regulation 2.16,
- B. The alternative requirements are consistent with the streamlining procedures and guidelines set forth in section II.A. of *White Paper Number 2 for Improved Implementation of the Part 70 Operating Permits Program*, March 5, 1996, U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards. The overall effect of compliance with alternative requirements shall consider the effect on an intrinsic basis, such as pounds per million Btu of heat input. However, alternative requirements that are developed based upon revisions to the applicable requirements contained in 40 CFR Part 60 or Part 75 shall be approvable pursuant to this NO_x RACT Plan Element,
- C. The U.S. Environmental Protection Agency (EPA) has not objected to the issuance, renewal, or revision of the Title V Operating Permit, and either
- D. If the public comment period preceded the EPA review period, then the District transmitted any public comments concerning the alternative requirements to EPA with the proposed permit, or
- E. If the EPA and public comment periods ran concurrently, then the District transmitted any public comments concerning the alternative requirements to EPA no later than 5 working days after the end of the public comment period.

The District's determination of approval of any alternative requirements is not binding on EPA. Noncompliance with any alternative requirement established pursuant to the Title V Operating Permit process constitutes a violation of this NO_x RACT Plan.

History: Approved 11-8-99, effective 1-1-00; amended a1/2-21-01, effective 4-1-01; amended a2/3-19-08, effective 3-24-08; amended a3/08-17-13, effective 08-17-13, amended a4/01-18-17, effective 01-18-17

**Air Pollution Control Board of Jefferson County
Board Order - Amendment 1**

This amended Board Order is issued by the Air Pollution Control Board of Jefferson County pursuant to the authority granted in Kentucky Revised Statutes Chapter 77 Air Pollution Control.

Company: Louisville Medical Center Steam Plant (Medical Center)
235 Abraham Flexner Way
Louisville, Kentucky 40202

Background and Discussion

Regulation 6.42 *Reasonably Available Control Technology Requirements for Major Volatile Organic Compound- and Nitrogen Oxides-Emitting Facilities* requires the establishment and implementation of reasonably available control technology (RACT) for certain affected facilities that emit oxides of nitrogen (NO_x) and that are located at a major stationary source for NO_x. Section 4.4 requires that each determination of RACT approved by the Air Pollution Control District of Jefferson County (District) be submitted to the U.S. Environmental Protection Agency (EPA) as a site-specific revision of the Kentucky State Implementation Plan (SIP).

The initial Board Order was approved by the Board on November 8, 1999, and submitted to the EPA by the Kentucky Natural Resources and Environmental Protection Cabinet on November 12, 1999, as a site-specific revision of the Kentucky SIP. Subsequently, the EPA identified issues needing resolution before this NO_x RACT determination would be approved as part of the Kentucky SIP. This amended Board Order addresses those issues.

A Public Hearing on this amended Board Order was held before the Board on February 21, 2001. Based upon the evidence presented at that hearing, the Board determined that approval of this amended Board Order and submittal as a site-specific revision of the Kentucky SIP were appropriate.

Now therefore be it ordered that:

1. The attached NO_x RACT Plan - Amendment 1, applicable to the Medical Center, is approved by the District. The Medical Center shall comply with this plan.
2. Compliance with the attached NO_x RACT Plan - Amendment 1 shall be deemed compliance with the requirements of Regulation 6.42 section 1.2, section 1.3, Section 2 to the extent that this Section applies to section 4.3, section 4.3, and Section 5 to the extent that this Section applies to verification of compliance with the requirements pursuant to section 4.3.

3. This amended Board Order shall not be deemed or construed to be the result of any violation of any federal, state, or local statute, regulation, or ordinance for any purpose whatsoever.
4. The Medical Center has reviewed this amended Board Order and consents to all its requirements and terms.
5. The effective date of this Board Order is April 1, 2001.

Dated this 21st day of February, 2001.

Air Pollution Control Board
of Jefferson County

By: Robert W. Powell, M.D.
Robert W. Powell, M.D.
Chairman

Louisville Medical Center Steam Plant

By: Edward A. Dusch
Edward A. Dusch
General Manager

Air Pollution Control District
of Jefferson County

By: Jesse M. Goldsmith
Jesse M. Goldsmith
Air Pollution Control Officer

Approved as to form and legality:
Air Pollution Control District
of Jefferson County

By: Gaylord B. Ballard
Gaylord B. Ballard
Attorney

NO_x RACT Plan - Amendment 1

1. The oxides of nitrogen (NO_x, expressed as NO₂) emission from each of Boiler #2, Boiler #4, and Boiler #5 while natural gas is combusted in that boiler shall not exceed 0.20 pound per million Btu of heat input.
2. The NO_x (expressed as NO₂) emission from each of Boiler #4, Boiler #5, and Boiler #6 while coal is combusted in that boiler shall not exceed 0.50 pound per million Btu of heat input.
3. The Louisville Medical Center Steam Plant (Medical Center) shall conduct an annual performance test for NO_x for each of Boiler #2, Boiler #4, Boiler #5, and Boiler #6 . If the requirements of Regulation 6.42 *Reasonably Available Control Technology Requirements for Major Volatile Organic Compound- and Nitrogen Oxides-Emitting Facilities* section 5.1 are met, and subject to the annual performance test schedule reinstatement provision, performance testing may be done on a biennial schedule. Performance testing shall meet the following requirements:
 - A. Emissions concentrations and the mass determinations shall be obtained using Reference Methods of 40 CFR Part 60 Appendix A. The following methods shall be used:
 - (1) Method 1 or 1A, which furnishes guidance in site and traverse selection for sampling velocity at traverse points in stationary sources,
 - (2) Method 2, 2A, 2B, 2C, 2D, 2E, 2F, 2G, or 2H, which applies to measurements of gas volumetric flow rates,
 - (3) Method 3, 3A, 3B, or 3C, which is applicable for determining the concentrations of one or more of the following gases: carbon dioxide, O₂, CO, nitrogen, and methane,
 - (4) Method 4, which determines the moisture content in stack gases, and
 - (5) Method 7, 7A, 7B, 7C, 7D, or 7E, which provides the analytical method for determining the concentration of NO_x emissions from stationary sources.
 - B. The use of other Reference Methods that are added to 40 CFR Part 60 Appendix A, alternative tests, or modifications to the Reference Methods listed in NO_x RACT Plan Element (Element) No. 3.A. may be proposed by the Medical Center as part of the testing plan required by Element No. 3.D. Such methods may be used if approved in writing by the District.
 - C. Performance testing shall meet the requirements of Regulation 1.04 *Performance Tests* that are not addressed in this Element.
 - D. A notification of intent to conduct a performance test shall be submitted to the District at least 25 working days in advance of the projected starting date for the performance test. The notification shall include the proposed test methods to be used.
 - E. If a pre-test conference to discuss the proposed test methods is deemed necessary by the District, a pre-test conference shall be arranged by District personnel.
 - F. At least 10 working days' prior notice of the scheduled starting date for the performance test shall be provided to the District.

Louisville Medical Center Steam Plant

- G. A performance test report shall be submitted to the District within 60 days of completion of performance testing. The report shall include the calculations used to determine emissions. The NO_x emission rate shall be expressed in both pounds per hour and pounds per million Btu formats. The raw data shall be retained by the Medical Center for a minimum of 5 years and made available to the District upon request. Selected portions of the raw data used to calculate the emissions shall be included in the report in a format provided by the District.
4. The Medical Center shall, each year prior to April 1, perform and make a record of the following non-routine boiler maintenance activities for Boiler #2, Boiler #4, Boiler #5, and Boiler #6:
- A. Inspect the fuel combustion system and, as needed, clean or replace the components of the fuel combustion system,
 - B. Inspect the flame pattern for the boiler and make any needed adjustments to the fuel combustion system to optimize the flame pattern to minimize total emissions of NO_x and carbon monoxide (CO),
 - C. Inspect the combustion control system to determine whether the combustion control system is operating properly and the air-to-fuel ratio is correctly calibrated and make any needed system adjustments or replacements,
 - D. Adjust the air-to-fuel ratio to minimize excess air and maximize boiler efficiency, and
 - E. Inspect all other components of the boiler and make any needed adjustments or repairs to improve boiler efficiency.
5. The Medical Center shall include in each report pursuant to Element No. 9 a summary of the boiler maintenance activities required by Element No. 4 that occurred during the preceding semi-annual period.
6. The Medical Center shall, before April 1, 2001, submit to the District a written description of daily activities and procedures that may be conducted by the boiler operators to ensure optimum operating efficiency of Boiler #2, Boiler #4, Boiler #5, and Boiler #6.
7. Neither Boiler #1 nor Boiler #3 shall have a seasonal capacity factor greater than 10.0%. The term "seasonal capacity factor" means the ratio between the actual heat input to a boiler from fuel combusted during the period April 1 through October 31 and the potential heat input to the boiler had it been operated for 24 hours per day for each day during that period at the maximum steady state design heat input capacity. The maximum heat input capacity provided by the manufacturer shall be used unless the Medical Center determines the maximum heat input capacity using the heat loss method described in sections 5 and 7.3 of the ASME *Power Test Codes* 4.1.
8. The Medical Center shall make a record of the type and amount of fuel combusted during each day of operation of Boiler #1 or Boiler #3 during the period April 1 through October 31. The Medical Center shall, at the end of each month during this period, calculate and record, for each of Boiler #1 and Boiler #3, the seasonal capacity factor based

Louisville Medical Center Steam Plant

upon the season to date. Each record shall be maintained for a minimum of 5 years and made available to the District upon request.

9. The Medical Center shall keep a record identifying all deviations from the requirements of this NO_x RACT Plan and shall submit to the District a written report of all deviations that occurred during the preceding semi-annual period. Semi-annual periods shall run from January 1 to June 30 and July 1 to December 31. The report shall contain the following information:
- A. The boiler number,
 - B. The beginning and ending date of the reporting period,
 - C. Identification of all periods during which a deviation occurred,
 - D. A description, including the magnitude, of the deviation,
 - E. If known, the cause of the deviation, and
 - F. A description of all corrective actions taken to abate the deviation.

If no deviation occurred during the semi-annual period, the report shall contain a negative declaration. Each report shall be submitted within 60 days following the end of the semi-annual period.

10. In lieu of the requirements in this NO_x RACT Plan, the Medical Center may comply with alternative requirements regarding emission limitations, equipment operation, test methods, monitoring, recordkeeping, or reporting, provided the following conditions are met:
- A. The alternative requirements are established and incorporated into an operating permit pursuant to a Title V Operating Permit issuance, renewal, or significant permit revision process as established in Regulation 2.16,
 - B. The alternative requirements are consistent with the streamlining procedures and guidelines set forth in section II.A. of *White Paper Number 2 for Improved Implementation of the Part 70 Operating Permits Program*, March 5, 1996, U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards. The overall effect of compliance with alternative requirements shall consider the effect on an intrinsic basis, such as pounds per million Btu,
 - C. The U.S. Environmental Protection Agency (EPA) has not objected to the issuance, renewal, or revision of the Title V Operating Permit, and either
 - D. If the public comment period preceded the EPA review period, then the District had transmitted any public comments concerning the alternative requirements to EPA with the proposed permit, or
 - E. If the EPA and public comment periods ran concurrently, then the District had transmitted any public comments concerning the alternative requirements to EPA no later than 5 working days after the end of the public comment period.

The District's determination of approval of any alternative requirements is not binding on EPA. Noncompliance with any alternative requirement established pursuant to the Title V Operating Permit process constitutes a violation of the NO_x RACT Plan.

History: Approved 11-8-99; effective 1-1-00; amended a1/2-21-01 effective 4-1-01.

**Louisville Metro Air Pollution Control Board
Board Order – Amendment 3**

This amended Board Order is issued by the Louisville Metro Air Pollution Control Board pursuant to the authority granted in Kentucky Revised Statutes Chapter 77 Air Pollution Control.

Company: Louisville Medical Center Steam Plant
235 Abraham Flexner Way
Louisville, KY 40202

Background and Discussion

Regulation 6.42 *Reasonably Available Control Technology Requirements for Major Volatile Organic Compound- and Nitrogen Oxides-Emitting Facilities* requires the establishment and implementation of reasonably available control technology (RACT) for certain affected facilities that emit oxides of nitrogen (NO_x) and that are located at a major stationary source for NO_x. Section 4.4 requires that each determination of RACT approved by the Air Pollution Control District of Jefferson County (District) be submitted to the U.S. Environmental Protection Agency (EPA) as a site-specific revision of the Kentucky State Implementation Plan (SIP).

The initial Board Order was approved by the Board on November 8, 1999, and submitted to the EPA by the Kentucky Natural Resources and Environmental Protection Cabinet (KNREPC) on November 12, 1999, as a site-specific revision of the Kentucky SIP. Subsequently, the EPA identified issues needing resolution before this NO_x RACT determination would be approved as part of the Kentucky SIP. Board Order Amendment 1 was approved by the Board on February 21, 2001. Board Order Amendment 2 was approved by the Board on March 19, 2008.

The Louisville Medical Center Steam Plant has now requested an amendment to Board Order Amendment 2 that removes the 10% seasonal capacity factor for Boiler #3 from the requirements, allowing full operation, since the coal stoker of Boiler #3 has been removed and replaced with a low NO_x natural gas burner. This amended Board Order addresses that request.

Now therefore be it ordered that:

1. The attached NO_x RACT Plan - Amendment 3, applicable to the Louisville Medical Center Steam Plant, is approved by the District. The Louisville Medical Center Steam Plant shall comply with this plan.
2. Compliance with the attached NO_x RACT Plan - Amendment 3 shall be deemed compliance with the requirements of Regulation 6.42 section 1.2, section 1.3, Section 2 to the extent that this Section applies to section 4.3, and Section 5 to the

NO_x RACT Plan - Amendment 3

1. The oxides of nitrogen (NO_x, expressed as NO₂) emission from each of Boiler #2, Boiler #3, Boiler #4, and Boiler #5 while natural gas is combusted shall not exceed 0.20 pound per million Btu of heat input, based on a 30 day rolling average period.
2. The NO_x (expressed as NO₂) emission from Boiler #1 while natural gas is combusted shall not exceed 0.10 pound per million Btu of heat input, based on a 30 day rolling average period.
3. The NO_x (expressed as NO₂) emission from Boiler #4, Boiler #5, and Boiler #6 while coal is combusted shall not exceed 0.50 pound per million Btu of heat input, based on a 30 day rolling average period.
4. The Louisville Medical Center Steam Plant shall conduct an annual performance test for NO_x for each of the following: Boiler #1, Boiler #2, Boiler #3, Boiler #4, Boiler #5, and Boiler #6. If the requirements of Regulation 6.42 *Reasonably Available Control Technology Requirements for Major Volatile Organic Compound- and Nitrogen Oxides-Emitting Facilities*, section 5.1 are met, and subject to the annual performance test schedule reinstatement provision, performance testing may be done on a biennial schedule. Performance testing shall meet the following requirements:
 - A. Emissions concentrations and the mass determinations shall be obtained using Reference Methods of 40 CFR Part 60 Appendix A. The following methods shall be used:
 - (1) Method 1 or 1A, which furnishes guidance in site and traverse selection for sampling velocity at traverse points in stationary sources,
 - (2) Method 2, 2A, 2C, 2D, 2F, 2G, or 2H, which applies to measurements of gas volumetric flow rates,
 - (3) Method 3, 3A, 3B, or 3C, which is applicable for determining the concentrations of one or more of the following gases: carbon dioxide, oxygen, carbon monoxide, nitrogen, and methane,
 - (4) Method 4, which determines the moisture content in stack gases, and
 - (5) Method 7, 7A, 7B, 7C, 7D, or 7E, which provides the analytical method for determining the concentration of NO_x emissions from stationary sources.
 - B. The use of other Reference Methods that are added to 40 CFR 60 Appendix A, alternative tests, or modifications to the Reference Methods listed in NO_x RACT Plan Element (Element) No. 4.A. may be proposed by the Louisville Medical Center Steam Plant as part of the testing plan required by Element No. 4.D. Such methods may be used if approved in writing by the Louisville Metro Air Pollution Control District (District).
 - C. Performance testing shall meet the requirements of Regulation 1.04, *Performance Tests*, which are not addressed in this Element. All testing shall be conducted at 90% or greater of the maximum rated heat input capacity of the boiler.
 - D. A notification of intent to conduct a performance test shall be submitted to the District at least 25 working days in advance of the projected starting date for the

- performance test. The notification shall include the proposed test methods to be used.
- E. If a pre-test conference to discuss the proposed test methods is deemed necessary by the District, a pre-test conference shall be arranged by District personnel.
 - F. At least 10 working days' prior notice of the scheduled starting date for the performance test shall be provided to the District.
 - G. A performance test report shall be submitted to the District within 60 days of completion of performance testing. The report shall include the quantity and type of fuel combusted during each 1-hr test run and calculations used to determine emissions. The NO_x emission rate shall be expressed in both pounds per hour and pounds per million Btu formats. The raw data shall be retained by the Louisville Medical Center Steam Plant for a minimum of 5 years and made available to the District upon request. Selected portions of the raw data used to calculate the emissions shall be included in the report in a format provided by the District.
5. The Louisville Medical Center Steam Plant shall, each year prior to April 1, perform and make a record of the following non-routine boiler maintenance activities for Boiler #1, Boiler #2, Boiler #3, Boiler #4, Boiler #5, and Boiler #6:
- A. Inspect the fuel combustion system and, as needed, clean or replace the components of the fuel combustion system.
 - B. Inspect the flame pattern for the boiler and make any needed adjustments to the fuel combustion system to optimize the flame pattern to minimize total emissions of NO_x and carbon monoxide,
 - C. Inspect the combustion control system to determine whether the combustion control system is operating properly and the air-to-fuel ratio is correctly calibrated and make any needed system adjustments or replacements,
 - D. Adjust the air-to-fuel ratio to minimize excess air and maximize boiler efficiency, and
 - E. Inspect all other components of the boiler and make any needed adjustments or repairs to improve boiler efficiency.
6. The Louisville Medical Center Steam Plant shall include in each report pursuant to Element No. 7 a summary of the boiler maintenance activities required by Element No. 5 that occurred during the preceding semi-annual period.
7. The Louisville Medical Center Steam Plant shall keep a record identifying all deviations from the requirements of this NO_x RACT Plan and shall submit to the District a written report of all deviations that occurred during the preceding semi-annual period. Semi-annual periods shall run from January 1 to June 30 and July 1 to December 31. The report shall contain the following information:
- A. The boiler number,
 - B. The beginning and ending date of the reporting period,
 - C. Identification of all periods during which a deviation occurred,
 - D. A description, including the magnitude, of the deviation,

- E. If known, the cause of the deviation, and
- F. A description of all corrective actions taken to abate the deviation.

If no deviation occurred during the semi-annual period, the report shall contain a negative declaration. Each report shall be submitted within 60 days following the end of the semi-annual period.

- 8. In lieu of the requirements in this NO_x RACT Plan, the Louisville Medical Center Steam Plant may comply with alternative requirements regarding emission limitations, equipment operation, test methods, monitoring, recordkeeping, or reporting, provided the following conditions are met:
 - A. The alternative requirements are established and incorporated into an operating permit pursuant to a Title V Operating Permit issuance, renewal, or significant permit revision process as established in Regulation 2.16,
 - B. The alternative requirements are consistent with the streamlining procedures and guidelines set forth in section II.A. of *White Paper Number 2 for Improved Implementation of the Part 70 Operating Permits Program*, March 5, 1996, U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards. The overall effect of compliance with alternative requirements shall consider the effect on an intrinsic basis, such as pounds per million Btu of heat input. However, alternative requirements that are developed based upon revisions to the applicable requirements contained in 40 CFR Part 60 or Part 75 shall be approvable pursuant to this NO_x RACT Plan Element,
 - C. The U.S. Environmental Protection Agency (EPA) has not objected to the issuance, renewal, or revision of the Title V Operating Permit, and either
 - D. If the public comment period preceded the EPA review period, then the District transmitted any public comments concerning the alternative requirements to EPA with the proposed permit, or
 - E. If the EPA and public comment periods ran concurrently, then the District transmitted any public comments concerning the alternative requirements to EPA no later than 5 working days after the end of the public comment period.

The District's determination of approval of any alternative requirements is not binding on EPA. Noncompliance with any alternative requirement established pursuant to the Title V Operating Permit process constitutes a violation of this NO_x RACT Plan.

History: Approved 11-8-99, effective 1-1-00; amended a1/2-21-01, effective 4-1-01; amended a2/3-19-08, effective 3-24-08; amended a3/08-17-13, effective 08-21-13

extent that this Section applies to verification of compliance with the requirements pursuant to section 4.3.

3. This amended Board Order shall not be deemed or construed to be the result of any violation of any federal, state, or local statute, regulation, or ordinance for any purpose whatsoever.
4. The Louisville Medical Center Steam Plant has reviewed this amended Board Order and consents to all its requirements and terms.
5. This amended Board Order is effective on the date of its adoption by the Board.

Dated this 21st day of August, 2013

Louisville Metro Air Pollution
Control Board

By: Robert W. Powell, M.D.
Robert W. Powell, M.D.
Chairman

Louisville Medical Center Steam Plant

By: Edward Dusch
Edward Dusch
General Manager

Louisville Metro Air Pollution
Control District

By: Paul Aud 8-21-13
Paul Aud
Air Pollution Control Officer

Approved as to form and legality:

By: Stacy Fritze Dott
Stacy Fritze Dott
Assistant County Attorney

RECEIVED

FEB 08 2017

A.P.C.D.
ADMINISTRATION

AFFIDAVIT

Christine Manning of Louisville, Kentucky, being duly sworn, says that she is the clerk of the Legal Advertising Department of the Courier Journal newspaper printed and published in the state of Kentucky, County of Jefferson, and having general circulation in the county of Jefferson, and that the advertisement of which the annexed is a true copy has been published in (Courier Journal) on the following dates:

5th day of January, 2017

Christine Manning

Inbound Account Executive, Legal Advertising Department Subscribed and sworn to before me, a Notary Public, withing and for the State and County aforesaid, by Janice Richardson to me personally known, this

5th day of January, 2017

Janice C. Richardson

Copy of Advertisement
Exhibit "A"

Ad Number: 0001835562

Handwritten signature
2-9-17

Notice of Public Comment Period and Hearing

The Louisville Metro Air Pollution Control District opens a public comment period December 14, 2016, on a submittal to the U.S. Environmental Protection Agency for inclusion into the Kentucky State Implementation Plan (SIP) of an amended Board Order and site-specific plan for oxides of nitrogen (NOx) reasonably available control technology (RACT) for Louisville Medical Center, Inc., 235 Abraham Flexner Way, Louisville, KY 40202.

Written statements will be accepted by the District Secretary-Treasurer, Rachael Hamilton, Louisville Metro Air Pollution Control District, 701 W. Ormsby Ave., Suite 303, Louisville, Ky 40203, until 5:00 p.m., January 13, 2017. Written statements will also be accepted electronically until the same deadline via the Internet at the e-mail address airregs@louisvilleky.gov.

Oral statements will be accepted at a public hearing in the Board Room of the Air Pollution Control District, 701 W. Ormsby Ave., Louisville at 10:00 a.m., January 18, 2017, if a public hearing is requested. Requests for a hearing must be received no later than 5:00 p.m., January 13, 2017. If no request for a public hearing is received the hearing will be cancelled and notice of the cancellation will be posted on the District's website, www.louisvilleky.gov/apcd, or you may call (502) 574-6000.

A paper copy of the amended NOx RACT plan may be obtained from Cherri Steiner, (502) 574-5606, between 8 a.m. and 5 p.m. Monday through Friday. An electronic copy of the plan may be downloaded from the District's website at www.louisvilleky.gov/APCD/Docket.htm.

The Courier-Journal

A GANNETT COMPANY

AFFIDAVIT OF PUBLICATION

State of Kentucky

County of Jefferson

I Christine Manning, of The Courier Journal, Inbound Special Services Representative, general circulation printed and published at 525 West Broadway, Louisville, Kentucky, do solemnly swear that from my own personal knowledge, and reference to the files of said publication, the advertisement of:

Ad No. 0001795998

Start Date: 12/14/16

Run Dates: 12/14/16

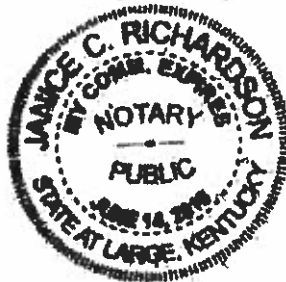
C. Manning

Christine Manning, Inbound Special Services representative
Signature of the person making proof

Subscribed and sworn to before me this

Janice C. Richardson

Janice C. Richardson, Notary Public



AFFIDAVIT

Christine Manning of Louisville, Kentucky, being duly sworn, says that she is the clerk of the Legal Advertising Department of the Courier Journal newspaper printed and published in the state of Kentucky, County of Jefferson, and having general circulation in the county of Jefferson, and that the advertisement of which the annexed is a true copy has been published in (Courier Journal) on the following dates:

14th day of December, 2016

Christine Manning

Inbound Account Executive, Legal Advertising Department Subscribed and sworn to before me, a Notary Public, withing and for the State and County aforesaid, by Janice Richardson to me personally known, this

14th day of December, 2016

Janice C. Richardson

Copy of Advertisement
Exhibit "A"

Ad Number: 0001795998

Notice of Public Comment
Period and Hearing

The Louisville Metro Air Pollution Control District opens a public comment period December 14, 2016, on a submittal to the U.S. Environmental Protection Agency for inclusion into the Kentucky State Implementation Plan (SIP) of an amended Board Order and site-specific plan for oxides of nitrogen (NOx) reasonably available control technology (RACT) for Louisville Medical Center, Inc., 285 Abraham Flexner Way, Louisville, KY 40202.

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A paper copy of the amended NOx RACT plan may be obtained from Monica Little (502) 574-7246 between 8 a.m. and 5 p.m. Monday through Friday. An electronic copy of the plan may be downloaded from the District's website at www.louisvilleky.gov/APCD/Docket.htm.

Janice Richardson

Notice of Public Comment
Period and Hearing

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**Minutes
Public Hearing Meeting
of the
Louisville Metro Air Pollution Control Board**

January 18, 2017

A public hearing of the Louisville Metro Air Pollution Control Board was called to order on January 18, 2017, at 10:00 a.m. in the Edison Room, at 701 W. Ormsby Ave., Louisville, Kentucky, by the Chairman, Dr. Robert Powell.

General Statement, Rules and Purpose

The Chairman read the opening announcements, rules and purpose of the public hearing, which was to review the following matters:

1. Agreed Board Order with ConAgra Foods Packaged Foods, LLC

Mr. Matt King, Compliance and Enforcement Manager, asked the Board to consider and adopt a proposed Agreed Board Order alleging that ConAgra Foods Packaged Foods, LLC, violated its District operating permit, and directing the company to pay an administrative penalty. The company agreed to the terms of the Order.

ConAgra Foods Packaged Foods, LLC owns and operates a facility that produces frozen food products pursuant to a federally enforceable District operating permit. The District alleged that the company failed to document safety-related information, failed to certify safety-related procedures, and failed to update and maintain the Clean Air Act Risk Management Program (RMP).

The Risk Management Program requires companies to take measures to prevent accidental releases of toxic and flammable substances as well as prepare for a response to an accident. On September 14, 2015, a District employee, along with a member of Emergency Management, performed an on-site inspection of the facility.

The District noted thirty-eight deficiencies including failure to document the following: a management system to oversee the implementation of the RMP; correct data and methodology to analyze all release scenarios; all required process safety information; a system to promptly address findings of the Process Hazards Analysis; annually updated operating procedures; an employee training program; mechanical integrity inspections and tests; deficiencies corrected after compliance audits; and contractor safety information. ConAgra has corrected the deficiencies documented in the Notice of Violation. An inspection was conducted by the District and Emergency Management in December 2016. Preliminary results show that the company is in compliance with the Risk Management Program.

The District assessed a penalty of \$225,000 for all of the violations.

Statements

Mr. Tom Culross, Vice President of Environmental Health, Safety & Security at ConAgra Packaged Foods LLC, thanked the District for working with them and emphasized the company's commitment to operate safely and comply with all regulations.

2. Agreed Board Order with Swift Pork Company

Mr. Matt King, Compliance and Enforcement Manager, asked the Board to consider and adopt a proposed Agreed Board Order alleging that Swift Pork Company violated its District operating permit, and directing the company to pay an administrative penalty. The company agreed to the terms of the Order.

Swift Pork Company operates a pork processing plant pursuant to a federally enforceable District operating permit. The District alleges that between February 2011 and March 2016, the company emitted objectionable odors beyond the property line and entering the surrounding neighborhood on several occasions, which resulted in the District issuing eight Notices of Violation (NOVs).

The company also reported failure to conduct work practices, monitoring and recordkeeping on its odor control devices as required by its operating permit in its 2015 Annual Compliance Report. The company failed to keep stop records on two occasions, and perform visual inspections of the cooker condenser on twelve occasions; failed to record readings for water outlet temperature and exhaust temperature on forty-three days on the hair hydrolyzer condenser, and failed to conduct two monthly inspections; failed to conduct two monthly inspections of the Venturi scrubber; failed to monitor exhaust temperature on twelve days and flow rate on four occasions, and to conduct fourth quarter cleaning on the 75K scrubber; and failed to monitor flow rate on two occasions on one day on the 40K scrubber.

The District assessed a penalty of \$124,500 for all of the violations.

Statements

Ms. Rachael Hamilton summarized Regulation 1.13, the Control of Objectionable Odors in the Ambient Air, which states that the District may use an instrument, device, or technique to determine an odor's intensity as part of regulation enforcement. The District will move to a 5-point Odor Intensity Reference Scale using specific terms and reference to a 5-point scale. This method will allow for a more consistent odor description. The District intends to hire a qualified consultant to train staff, develop a Standard Operating Guide for field staff, and develop a form for recording field observations, including weather conditions. Ms. Hamilton also stated that the 5-point scale will not be the only technique to describe odor intensity but that field staff will also be able to enter their personal observations as well. As part of its commitment to continuous improvement, the District will explore other techniques for determining odor intensity as provided in Regulation 1.13.

Ms. Hamilton thanked District staff for their commitment to investigate odor complaints, maintaining documentation and prompt communication with Swift so that corrective action could be taken immediately.

Mr. Keith Talley noted the long process to resolve this issue and thanked the Jefferson County Attorney's Office staff, Stacy Fritze Dott, Peter Ervin and Tammy Brown, as well as the District's Community Compliance Staff, Tina Oakes, Steve Oswald, Mario Beeler, and Susan Bowman, for their work on this enforcement matter.

Eric Wallin, General Manager at Swift, thanked the District for working with them. He stated that Swift respects the fact that the company is located in a densely populated area but believes they do more to prevent odors than any other packing company in America. He stated that Swift's intention is not to emit odors and offend neighbors or businesses around them. Mr. Wallin wanted to assure the public that Swift will work very hard to control odors and explore new technologies. He also stated that, from

time to time, there may be an operational situation that causes Swift to emit an odor. In that event, they will react quickly and take corrective actions. Mr. Wallin stated that Swift has always been a good member of the community and wants to be a good neighbor. He thanked the District for reaching this compromise and moving forward positively.

Mr. Dennis Conniff, counsel for Swift Pork Company, stated that the District's plan to use a 5-point scale for determining odor intensity was a factor in the company's decision to settle the matter in lieu of going to hearing. He thanked the District for listening to their concerns about subjectivity in the application of the odor standard.

Mr. Carl Hilton commended the District for resolving the issue and expressed his hope that the agreement will help eliminate future odors. He also asked how the District responds to reported odor during the District's off hours and weekends. Mr. Matt King stated that there is an answering service for those hours, and that District staff will address the issues each work day morning. If there is an emergency that is immediately affecting the health of citizens, they should use their own judgment in calling 911.

3. Agreed Board Order with Louisville Medical Center, Inc., Steam and Chilled Water Plant

Mr. Paul Aud, Industrial Permitting Manager, asked the Board to consider and adopt a proposed Board Order with Louisville Medical Center, Inc., Steam and Chilled Water Plant – NOx RACT Plan Amendment 4.


Louisville Medical Center, which currently operates several coal-fired boilers, natural gas-fired boilers and diesel-powered emergency generators, is subject to a Title V operating permit issued by the District and a NOx RACT plan originally approved by the Board in 1999 and amended in 2001. The EPA had identified issues that had to be resolved as part of the Kentucky State Implementation Plan (SIP). There have been three previous amendments to address changes, and Amendment 4, which the District offers for proposal today, adds annual and ozone season NOx emission limits for Boilers #1 and #3. These limits are in accordance with Section 110(l) of the Clean Air Act. No increase in emissions will result from this amendment.

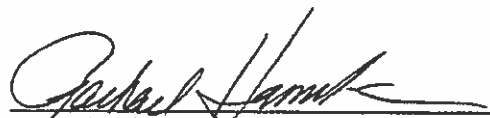
Statements

There were no statements.

Adjourn

The public hearing was adjourned at 10:20 a.m.


Robert W. Powell, M.D.
Chairman


Rachael Hamilton
Secretary-Treasurer

| LMCSP, Boiler #1 | | | |
|--------------------------|----------|------------------------------------|--------------------------|
| Boiler Type | | Coal fired, Stoker
Ammendment 1 | NOx RACT
Ammendment 4 |
| Capacity | MMBtu/hr | 56 | 56 |
| Fuels heat content | | 26.6 | |
| NOx EF | | 7.5 | |
| O3 Season Period | days | 213 | |
| O3 Season Factor | % | 10% | |
| O3 Season Operating time | hour | 511.2 | |
| Non-O3 Season Period | days | 152 | |
| Annual Operating time | hour | 4159.2 | |
| O3 Season NOx (PTE) | tpy | 4.04 | 4.0 |
| Annual NOx (PTE) | tpy | 32.8 | 32.8 |

| LMCSP, Boiler #3 | | | |
|--------------------------|----------|------------------------------------|--------------------------|
| Boiler Type | | Coal fired, Stoker
Ammendment 1 | NOx RACT
Ammendment 4 |
| Capacity | MMBtu/hr | 56 | 56 |
| Fuels heat content | | 26.6 | |
| NOx EF | | 7.5 | |
| O3 Season Period | days | 213 | |
| O3 Season Factor | % | 10% | |
| O3 Season Operating time | hour | 511.2 | |
| Non-O3 Season Period | days | 152 | |
| Annual Operating time | hour | 4159.2 | |
| O3 Season NOx (PTE) | tpy | 4.04 | 4.0 |
| Annual NOx (PTE) | tpy | 32.8 | 32.8 |

MES E. BICKFORD
SECRETARY



APB
KY129
PAUL E. PATTON
GOVERNOR

COMMONWEALTH OF KENTUCKY
NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET
OFFICE OF THE SECRETARY
FRANKFORT, KENTUCKY 40601
TELEPHONE: (502) 564-3350
May 23, 2001

Mr. Stanley Meiburg
Acting Regional Administrator
U.S. EPA, Region 4
Atlanta Federal Center
61 Forsyth Street, S.W.
Atlanta, Georgia 30303-8960

Dear Mr. Meiburg:

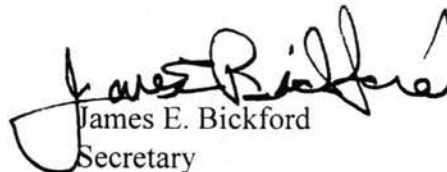
Enclosed for your consideration are five copies of a revision to the Jefferson County portion of Kentucky's State Implementation Plan (SIP). The proposed SIP revision package contains nine Reasonably Available Control Technology (RACT) plans for major sources of oxides of nitrogen (NO_x). The following eight plans replace the version submitted to the U.S. Environmental Protection Agency on November 12, 1999, by the Natural Resources and Environmental Protection Cabinet:

Ford Louisville Assembly Plant
GE Appliances
Kosmos Cement Company
Louisville Gas & Electric Company – Cane Run Generating Station
Louisville Gas & Electric Company – Mill Creek Generating Station
Louisville Medical Center Steam Plant
Oxy Vinyls, LP.
Texas Gas Transmission

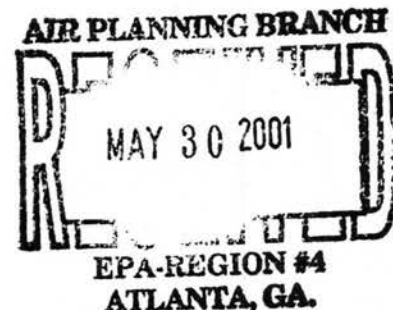
The ninth plan is new for the American Synthetic Rubber Company.

Your prompt consideration of this request is appreciated. If you have any questions or comments concerning this matter, please contact Lona Brewer at the Division for Air Quality at (502) 573-3382 or Jonathan Trout with the Air Pollution Control District of Jefferson County at (502) 574-7251.

Sincerely,


James E. Bickford
Secretary

JEB:mrl
Enclosures
cc: Kay Prince



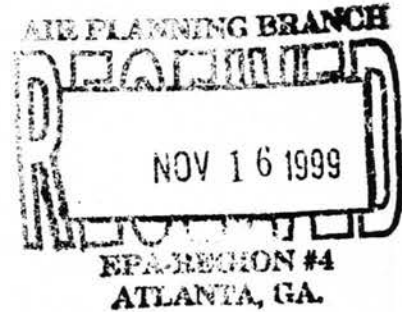
JAMES E. BICKFORD
SECRETARY



PAUL E. PATTON
GOVERNOR

COMMONWEALTH OF KENTUCKY
NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET
OFFICE OF THE SECRETARY
FRANKFORT KENTUCKY 40601
TELEPHONE: (502) 564-3350
November 12, 1999

Mr. John H. Hankinson, Jr.
Regional Administrator
U.S. EPA, Region IV
Atlanta Federal Center
61 Forsyth Street, S.W.
Atlanta, Georgia 30303



Dear Mr. Hankinson:

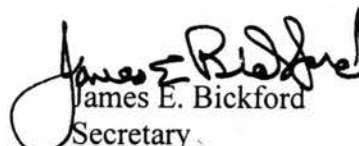
Enclosed are four copies of a request from the Air Pollution Control District of Jefferson County for a revision to the Jefferson County portion of the Kentucky State Implementation Plan.

This proposed SIP revision submittal package contains ten reasonably available control technology (RACT) plans for major sources of oxides of nitrogen (NOx). These plans were developed by the Air Pollution Control District of Jefferson County and apply to the following major sources:

E.I. DuPont de Nemours & Company
Ford Louisville Assembly Plant
GE Appliances
Kosmos Cement Company
Louisville Gas & Electric Company – Cane Run Generating Station
Louisville Gas & Electric Company – Mill Creek Generating Station
Louisville Medical Center Steam Plant
Oxy Vinyls, LP.
Rohm & Haas Company
Texas Gas Transmission

Your prompt consideration of this request is appreciated. If you have any questions or comments, please contact Mr. Arthur L. Williams at (502) 574-8689.

Sincerely,


James E. Bickford
Secretary

JEB:jt

Enclosures



AN EQUAL OPPORTUNITY EMPLOYER M/F/D

**Air Pollution Control Board of Jefferson County
Board Order - Amendment 1**

This amended Board Order is issued by the Air Pollution Control Board of Jefferson County pursuant to the authority granted in Kentucky Revised Statutes Chapter 77 Air Pollution Control.

Company: Oxy Vinyls, LP (Oxy Vinyls)
4014 Bells Lane
Louisville, Kentucky 40211

Background and Discussion

Regulation 6.42 *Reasonably Available Control Technology Requirements for Major Volatile Organic Compound- and Nitrogen Oxides-Emitting Facilities* requires the establishment and implementation of reasonably available control technology (RACT) for certain affected facilities that emit oxides of nitrogen (NO_x) and that are located at a major stationary source for NO_x. Section 4.4 requires that each determination of RACT approved by the Air Pollution Control District of Jefferson County (District) be submitted to the U.S. Environmental Protection Agency (EPA) as a site-specific revision of the Kentucky State Implementation Plan (SIP).

The initial Board Order was approved by the Board on November 8, 1999, and submitted to the EPA by the Kentucky Natural Resources and Environmental Protection Cabinet on November 12, 1999, as a site-specific revision of the Kentucky SIP. Subsequently, the EPA identified issues needing resolution before this NO_x RACT determination would be approved as part of the Kentucky SIP. This amended Board Order addresses those issues.

A Public Hearing on this amended Board Order was held before the Board on December 20, 2000. Based upon the evidence presented at that hearing, the Board determined that approval of this amended Board Order and submittal as a site-specific revision of the Kentucky SIP were appropriate.

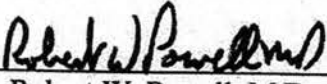
Now therefore be it ordered that:

1. The attached NO_x RACT Plan - Amendment 1, applicable to Oxy Vinyls, is approved by the District. Oxy Vinyls shall comply with this plan.
2. Compliance with the attached NO_x RACT Plan - Amendment 1 shall be deemed compliance with the requirements of Regulation 6.42 section 1.2, section 1.3, Section 2 to the extent that this Section applies to section 4.3, section 4.3, and Section 5 to the extent that this Section applies to verification of compliance with the requirements pursuant to section 4.3.

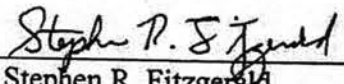
3. This amended Board Order shall not be deemed or construed to be the result of any violation of any federal, state, or local statute, regulation, or ordinance for any purpose whatsoever.
4. Oxy Vinyls has reviewed this amended Board Order and consents to all its requirements and terms.
5. The effective date of this amended Board Order and the attached NO_x RACT Plan - Amendment 1 is January 1, 2001. The initial Board Order, approved on November 8, 1999, shall remain in effect until January 1, 2001.

Dated this 20th day of December, 2000.

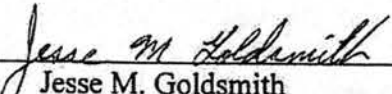
Air Pollution Control Board
of Jefferson County

By: 
Robert W. Powell, M.D.
Chairman

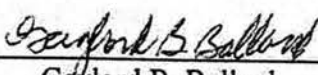
Oxy Vinyls, LP

By: 
Stephen R. Fitzgerald
Senior Vice President

Air Pollution Control District
of Jefferson County

By: 
Jesse M. Goldsmith
Air Pollution Control Officer

Approved as to form and legality:
Air Pollution Control District
of Jefferson County

By: 
Gaylord B. Ballard
Attorney

NO_x RACT Plan - Amendment 1

1. The oxides of nitrogen (NO_x, expressed as NO₂) emission from Boiler #4 shall not exceed 0.60 pound per million Btu of heat input.
2. The NO_x (expressed as NO₂) emission from Boiler #6 shall not exceed 0.70 pound per million Btu of heat input.
3. Oxy Vinyls, LP (Oxy Vinyls) shall conduct an annual performance test for NO_x for each of Boiler #4 and Boiler #6. If the requirements of Regulation 6.42 *Reasonably Available Control Technology Requirements for Major Volatile Organic Compound- and Nitrogen Oxides-Emitting Facilities* section 5.1 are met, and subject to the annual performance test schedule reinstatement provision, performance testing may be done on a biennial schedule. Performance testing shall meet the following requirements:
 - A. Emissions concentrations and the mass determinations shall be obtained using Reference Methods of 40 CFR Part 60 Appendix A. The following methods shall be used:
 - (1) Method 1 or 1A, which furnishes guidance in site and traverse selection for sampling velocity at traverse points in stationary sources,
 - (2) Method 2, 2A, 2B, 2C, 2D, 2E, 2F, 2G, or 2H, which applies to measurements of gas volumetric flow rates,
 - (3) Method 3, 3A, 3B, or 3C, which is applicable for determining the concentrations of one or more of the following gases: carbon dioxide, O₂, CO, nitrogen, and methane,
 - (4) Method 4, which determines the moisture content in stack gases, and
 - (5) Method 7, 7A, 7B, 7C, 7D, or 7E, which provides the analytical method for determining the concentration of NO_x emissions from stationary sources.
 - B. The use of other Reference Methods that are added to 40 CFR Part 60 Appendix A, alternative tests, or modifications to the Reference Methods listed in NO_x RACT Plan Element (Element) No. 3.A. may be proposed by Oxy Vinyls as part of the testing plan required by Element No. 3.D. Such methods may be used if approved in writing by the District.
 - C. Performance testing shall meet the requirements of Regulation 1.04 *Performance Tests* that are not addressed in this Element.
 - D. A notification of intent to conduct a performance test shall be submitted to the District at least 25 working days in advance of the projected starting date for the performance test. The notification shall include the proposed test methods to be used.
 - E. If a pre-test conference to discuss the proposed test methods is deemed necessary by the District, a pre-test conference shall be arranged by District personnel.
 - F. At least 10 working days' prior notice of the scheduled starting date for the performance test shall be provided to the District.
 - G. A performance test report shall be submitted to the District within 60 days of completion of performance testing. The report shall include the calculations used to determine emissions. The NO_x emission rate shall be expressed in both pounds

per hour and pounds per million Btu formats. The raw data shall be retained by Oxy Vinyls for a minimum of 5 years and made available to the District upon request. Selected portions of the raw data used to calculate the emissions shall be included in the report in a format provided by the District.

4. Oxy Vinyls shall, each year prior to May 1, perform and make a record of the following non-routine boiler maintenance activities for Boiler #4 and Boiler #6:
 - A. Inspection of the fuel combustion system and the cleaning or replacement of any component of the fuel combustion system,
 - B. Inspection of the flame pattern for the boiler and any adjustments made to the fuel combustion system to optimize the flame pattern to minimize total emissions of NO_x and carbon monoxide (CO),
 - C. Inspection of the combustion control system to determine whether the combustion control system is operating properly and the air-to-fuel ratio is correctly calibrated, and any resulting system adjustments or replacements,
 - D. Adjustment of the air-to-fuel ratio to minimize excess air and maximize boiler efficiency, and
 - E. Inspection of all other components of the boiler and any resulting adjustments or repairs made to improve boiler efficiency.
5. Oxy Vinyls shall include in each report pursuant to Element No. 13 a summary of the boiler maintenance activities required by Element No. 4 that occurred during the preceding semi-annual period.
6. Oxy Vinyls shall, before May 1, 2001, submit to the District a written description of daily activities and procedures conducted by the boiler operators to ensure optimum operating efficiency of Boiler #4 and Boiler #6.
7. Boiler #1 shall comply with the following requirements:
 - A. Boiler #1 shall not have an annual capacity factor greater than 10.0 % for any consecutive 12-month period. The term "annual capacity factor" means the ratio between the actual heat input to a boiler from fuel combusted during a consecutive 12-month period and the potential heat input to the boiler had it been operated for 8,760 hours during that consecutive 12-month period at the maximum steady state design heat input capacity. The maximum heat input capacity provided by the manufacturer shall be used unless Oxy Vinyls determines the maximum heat input capacity using the heat loss method described in sections 5 and 7.3 of the ASME *Power Test Codes* 4.1, and
 - B. Boiler #1 shall not combust a fuel other than natural gas, distillate oil, or residual oil.
8. Oxy Vinyls shall make a record of the type, heat content, and amount of fuel combusted during each day of operation of Boiler #1. Oxy Vinyls shall, at the end of each month, calculate and record the annual capacity factor based upon the preceding consecutive 12-month period. Each record shall be maintained for a minimum of 5 years and made available to the District upon request.

Oxy Vinyls, LP

9. The NO_x (expressed as NO₂) emission from Boiler #5 shall not exceed 0.20 pound per million Btu of heat input.
10. By January 1, 2000, Oxy Vinyls shall submit to the District a performance test report, in conformance with the requirements specified in Element No. 3 Paragraphs A through G, demonstrating compliance with the NO_x emission limit specified in Element No. 9.
11. If the seasonal capacity factor for Boiler #5 exceeds 15.0%, Oxy Vinyls shall conduct a performance test for NO_x in conformance with the requirements specified in Element No. 3 Paragraphs A through G no later than 30 days after the end of that season. The term "seasonal capacity factor" means the ratio between the actual heat input to a boiler from fuel combusted during the period May 1 through September 30 and the potential heat input to the boiler had it been operated for 3,672 hours during that period at the maximum steady state design heat input capacity. The maximum heat input capacity provided by the manufacturer shall be used unless Oxy Vinyls determines the maximum heat input capacity using the heat loss method described in sections 5 and 7.3 of the ASME *Power Test Codes* 4.1. If a performance test is required for Boiler #5 in two consecutive years and if the requirements of Regulation 6.42 *Reasonably Available Control Technology Requirements for Major Volatile Organic Compound- and Nitrogen Oxides-Emitting Facilities* section 5.1 are met, and subject to the annual performance test schedule reinstatement provision, then subsequent performance testing may be done on a biennial schedule.
12. Oxy Vinyls shall make a record of the type, heat content, and amount of fuel combusted during each day of operation of Boiler #5 during the period May 1 through September 30. Oxy Vinyls shall, at the end of each month during this period, calculate and record the seasonal capacity factor based upon the season to date. Each record shall be maintained for a minimum of 5 years and made available to the District upon request.
13. Oxy Vinyls shall keep a record identifying all deviations from the requirements of this NO_x RACT Plan and shall submit to the District a written report of all deviations that occurred during the preceding semi-annual period. Semi-annual periods shall run from January 1 to June 30 and July 1 to December 31. The report shall contain the following information:
 - A. The boiler number,
 - B. The beginning and ending date of the reporting period,
 - C. Identification of all periods during which a deviation occurred,
 - D. A description, including the magnitude, of the deviation,
 - E. If known, the cause of the deviation, and
 - F. A description of all corrective actions taken to abate the deviation.If no deviation occurred during the semi-annual period, the report shall contain a negative declaration. Each report shall be submitted within 60 days following the end of the semi-annual period.
14. In lieu of the requirements in this NO_x RACT Plan, Oxy Vinyls may comply with alternative requirements regarding emission limitations, equipment operation, test methods, monitoring, record keeping, or reporting, provided the following conditions are met:

- A. The alternative requirements are established and incorporated into an operating permit pursuant to a Title V Operating Permit issuance, renewal, or significant permit revision process as established in Regulation 2.16,
- B. The alternative requirements are consistent with the streamlining procedures and guidelines set forth in section II.A. of *White Paper Number 2 for Improved Implementation of the Part 70 Operating Permits Program*, March 5, 1996, U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards. The overall effect of compliance with alternative requirements shall consider the effect on an intrinsic basis, such as pounds per million Btu,
- C. The U.S. Environmental Protection Agency (EPA) has not objected to the issuance, renewal, or revision of the Title V Operating Permit, and either
- D. If the public comment period preceded the EPA review period, then the District had transmitted any public comments concerning the alternative requirements to EPA with the proposed permit, or
- E. If the EPA and public comment periods ran concurrently, then the District had transmitted any public comments concerning the alternative requirements to EPA no later than 5 working days after the end of the public comment period.

The District's determination of approval of any alternative requirements is not binding on EPA. Noncompliance with any alternative requirement established pursuant to the Title V Operating Permit process constitutes a violation of this NO_x RACT Plan.

History: Approved 11-8-99; effective 1-1-00; amended a1/12-20-00 effective 1-1-01.

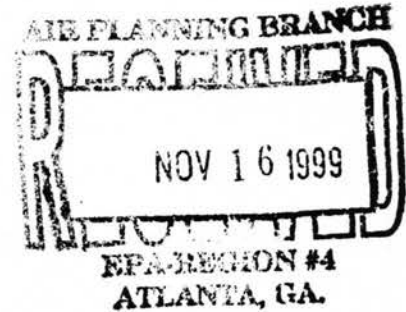
JAMES E. BICKFORD
SECRETARY



PAUL E. PATTON
GOVERNOR

COMMONWEALTH OF KENTUCKY
NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET
OFFICE OF THE SECRETARY
FRANKFORT KENTUCKY 40601
TELEPHONE: (502) 564-3350
November 12, 1999

Mr. John H. Hankinson, Jr.
Regional Administrator
U.S. EPA, Region IV
Atlanta Federal Center
61 Forsyth Street, S.W.
Atlanta, Georgia 30303



Dear Mr. Hankinson:


Enclosed are four copies of a request from the Air Pollution Control District of Jefferson County for a revision to the Jefferson County portion of the Kentucky State Implementation Plan.

This proposed SIP revision submittal package contains ten reasonably available control technology (RACT) plans for major sources of oxides of nitrogen (NOx). These plans were developed by the Air Pollution Control District of Jefferson County and apply to the following major sources:

E.I. DuPont de Nemours & Company
Ford Louisville Assembly Plant
GE Appliances
Kosmos Cement Company
Louisville Gas & Electric Company – Cane Run Generating Station
Louisville Gas & Electric Company – Mill Creek Generating Station
Louisville Medical Center Steam Plant
Oxy Vinyls, LP.
Rohm & Haas Company
Texas Gas Transmission

Your prompt consideration of this request is appreciated. If you have any questions or comments, please contact Mr. Arthur L. Williams at (502) 574-8689.

Sincerely,


James E. Bickford
Secretary

JEB:jt

Enclosures



AN EQUAL OPPORTUNITY EMPLOYER M/F/D

**Air Pollution Control Board of Jefferson County
Board Order**

This Board Order is issued by the Air Pollution Control Board of Jefferson County pursuant to the authority granted in Kentucky Revised Statutes Chapter 77 Air Pollution Control.

Company: Rohm and Haas Company (Rohm&Haas)
4300 Camp Ground Road
Louisville, Kentucky 40232

Background and Discussion

Regulation 6.42 *Reasonably Available Control Technology Requirements for Major Volatile Organic Compound- and Nitrogen Oxides-Emitting Facilities* requires the establishment and implementation of reasonably available control technology (RACT) for certain affected facilities that emit oxides of nitrogen (NO_x) and that are located at a major stationary source for NO_x. Section 4.4 requires that each determination of RACT approved by the Air Pollution Control District of Jefferson County (District) be submitted to the U.S. Environmental Protection Agency (EPA) as a site-specific revision of the Kentucky State Implementation Plan (SIP).

A Public Hearing on this Board Order was held before the Board on November 8, 1999. Based upon the evidence presented at that hearing, the Board determined that approval of this Board Order and submittal as a site-specific revision of the Kentucky SIP were appropriate.

Now therefore be it ordered that:

1. The attached NO_x RACT Plan applicable to Rohm&Haas is approved by the District. Rohm&Haas shall comply with this plan.
2. Compliance with the attached NO_x RACT Plan shall be deemed compliance with the requirements of Regulation 6.42 section 1.2, section 1.3, Section 2 to the extent that this Section applies to section 4.3, section 4.3, and Section 5 to the extent that this Section applies to verification of compliance with the requirements pursuant to section 4.3.
3. This Board Order shall not be deemed or construed to be the result of any violation of any federal, state, or local statute, regulation, or ordinance for any purpose whatsoever.
4. Rohm&Haas has reviewed this Board Order and consents to all its requirements and terms.

5. The effective date of this Board Order is January 1, 2000.

Dated this 8th day of November, 1999.

Air Pollution Control Board
of Jefferson County

By: Robert W. Powell, M.D.
Robert W. Powell, M.D.
Chairman

Rohm and Haas Company

By: Phillip W. Davis
Phillip W. Davis
Plant Manager

Air Pollution Control District
of Jefferson County

By: Arthur L. Williams
Arthur L. Williams
Acting Air Pollution
Control Officer

Approved as to form and legality:
Air Pollution Control District
of Jefferson County

By: Gaylord B. Ballard
Gaylord B. Ballard
Attorney

NO_x RACT Plan

1. When fossil fuel (natural gas or distillate fuel oil) alone is combusted, the oxides of nitrogen (NO_x, expressed as NO₂) emission from Boiler No. 100 shall not exceed 0.20 pound per million Btu (86 ng/J) of heat input, based upon a 30-day rolling average. This limit applies at all times during this fuel option, including periods of startup, shutdown, or malfunction.
2. When fossil fuel (natural gas or distillate fuel oil) and chemical by-product waste are simultaneously combusted in Boiler No. 100, the following provisions are applicable:
 - A. The oxides of nitrogen (NO_x, expressed as NO₂) emission from the boiler shall not exceed 1.1 pounds per million Btu (473 ng/J) of heat input, based upon a 30-day rolling average. This limit applies at all times during this fuel option, including periods of startup, shutdown, or malfunction,
 - B. The air ratio control damper tee handle shall be at a minimum of 5 inches out of the boiler, and
 - C. The flue gas recirculation line shall be operated at a minimum of 10 % open as indicated by its valve opening position indicator.
3. For the purpose of NO_x RACT Plan Element No. 2., the following definitions shall apply:
 - A. "Air ratio control damper" means the part of the low NO_x burner that is adjusted to control the split of total combustion air delivered to the reducing and oxidation portions of the combustion flame,
 - B. "Chemical by-product waste" means any liquid or gaseous substance produced at a chemical manufacturing plant and combusted in a steam generating unit for heat recovery or for disposal. Gaseous substances with carbon dioxide levels greater than 50 % or carbon monoxide levels greater than 10 % are not included, and
 - C. "Flue gas recirculation line" means the part of Boiler No. 100 that recirculates a portion of the boiler flue gas back into the combustion air.
4. The air ratio control damper tee handle setting and the flue gas recirculation line valve opening position indicator setting for Boiler No. 100 shall be recorded during each 8-hour operating period during which any chemical by-product waste is combusted.
5. Rohm&Haas shall install, calibrate, maintain, and operate a continuous emissions monitoring system (CEMS), and record the output of the system, for measuring NO_x emissions from Boiler No. 100. The following requirements apply to the CEMS:
 - A. The CEMS shall be operated and data recorded during all periods of operation of the boiler except for CEMS breakdowns and repairs. Data shall be recorded during calibration checks and zero and span adjustments,
 - B. The 1-hour average NO_x emission rates measured by the CEMS shall be expressed in pounds per million Btu heat input and shall be used to calculate the average emission rates under NO_x RACT Plan Element (Element) No. 1 and No. 2,
 - C. The 1-hour averages shall be calculated using the data points required under



- 40 CFR §60.13(b). At least 2 data points shall be used to calculate each 1-hour average,
- D. The procedures under 40 CFR §60.13 shall be followed for installation, evaluation, and operation of the CEMS,
 - E. The span value for NO_x is 1000, and
 - F. When NO_x emission data are not obtained because of CEMS breakdowns, repairs, calibration checks and zero and span adjustments, emission data shall be obtained by using standby monitoring systems, Method 7, Method 7a, or other reference methods approved by the District to provide emission data for a minimum of 75 % of the operating hours in the boiler operating day, in at least 22 out of 30 successive boiler operating days.
6. By January 1, 2000, Rohm&Haas shall submit to the District the performance evaluation of the CEMS for Boiler No. 100 using the applicable performance specifications in 40 CFR Part 60 Appendix B.
7. Rohm&Haas shall maintain the records listed in 40 CFR §60.49b (g) for Boiler No. 100 with the following clarifications:
- A. The NO_x emission rates shall be expressed in pounds per million Btu heat input measured unless Rohm&Haas cannot maintain a CEMS whose output is recorded in pounds per million Btu without a significant additional cost for data conversion, in which case the NO_x emission rates shall be expressed in ng/J, and
 - B. The applicable NO_x emission limits are contained in Element No. 1 and No. 2.
- Each record shall be maintained for a minimum of 5 years and made available to the District upon request.
8. Boiler No. 500 shall comply with one of the following options:
- A. Option 1: The boiler shall not have an annual capacity factor greater than 10.0 % for any consecutive 12-month period. The term "annual capacity factor" means the ratio between the actual heat input to a boiler from fuel combusted during a consecutive 12-month period and the potential heat input to the boiler had it been operated for 8,760 hours during that consecutive 12-month period at the maximum steady state design heat input capacity. The maximum heat input capacity provided by the manufacturer shall be used unless Rohm&Haas determines the maximum heat input capacity using the heat loss method described in sections 5 and 7.3 of the ASME *Power Test Codes* 4.1, or
 - B. Option 2: The NO_x (expressed as NO₂) emission from Boiler No. 500 shall not exceed 0.20 pound per million Btu of heat input, based upon a 30-day rolling average. This limit applies at all times, including periods of startup, shutdown, or malfunction.
9. Rohm&Haas shall, before January 1, 2000, notify the District in writing as to which option will be applicable to Boiler No. 500 starting January 1, 2000. If Rohm&Haas decides to switch from this initial option, then Rohm&Haas shall notify the District in writing, before the date of implementing the other option, of its decision to switch to that option. Option 2

shall not be implemented unless a construction permit or modified operating permit is issued by the District that authorizes the use of Boiler No. 500 at a level greater than a 10% annual capacity factor.

10. If Option 1 of Element No. 8 is in effect, Rohm&Haas shall make a record of the type and amount of fuel combusted during each day of operation of Boiler No. 500. Rohm&Haas shall, at the end of each month, calculate and record, for Boiler No. 500, the annual capacity factor based upon the preceding consecutive 12-month period. Each record shall be maintained for a minimum of 5 years and made available to the District upon request.
11. If Option 2 of Element No. 8 is in effect, Rohm&Haas shall comply with the following requirements for Boiler No. 500:
 - A. The NO_x CEMS requirements as specified in Element No. 5, except the average emission rate is established in Element No. 8.B. and the span value for NO_x is 500,
 - B. Within 90 days after achieving the maximum production rate at which Boiler No. 500 will be operated, but not later than 210 days after implementation of Option 2, Rohm&Haas shall conduct the performance evaluation of the CEMS for Boiler No. 500 using the applicable performance specifications in 40 CFR Part 60 Appendix B and, within 60 days of the completion of the performance evaluation, submit the report for the performance evaluation to the District, and
 - C. The maintenance of records as specified in Element No. 7, except the applicable NO_x emission limit is contained in Element No. 8.
12. Rohm&Haas shall submit to the District the following reports:
 - A. Excess emission reports for any excess emissions that occurred during the reporting period. "Excess emissions" means any calculated 30-day rolling average NO_x emission rate, as determined under Element No. 5, that exceeds the emission limit contained in Element No. 1 and No. 2, or as determined under Element No. 11.A., that exceeds the emission limit contained in Element No. 8.B., and
 - B. Reports containing the information required to be recorded by Element No. 7 and, if applicable, Element 11.C.
13. The reports required to be submitted by Element No. 12 shall reflect the preceding semi-annual period. Semi-annual periods shall run from January 1 to June 30 and July 1 to December 31. If no deviation occurred during the semi-annual period, the report shall contain a negative declaration. Each report shall be submitted within 60 days following the end of the semi-annual period.
14. In lieu of the requirements in this NO_x RACT Plan, Rohm&Haas may comply with alternative requirements regarding emission limitations, equipment operation, test methods, monitoring, recordkeeping, or reporting, provided the following conditions are met:
 - A. The alternative requirements are established and incorporated into an operating permit pursuant to a Title V Operating Permit issuance, renewal, or significant



- permit revision process as established in Regulation 2.16,
- B. The alternative requirements are consistent with the streamlining procedures and guidelines set forth in section II.A. of *White Paper Number 2 for Improved Implementation of the Part 70 Operating Permits Program*, March 5, 1996, U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards. The overall effect of compliance with alternative requirements shall consider the effect on an intrinsic basis, such as pounds per million Btu. However, alternative requirements that are developed based upon revisions to the applicable requirements contained in 40 CFR Part 60 shall be approvable pursuant to this Element,
 - C. The U.S. Environmental Protection Agency (EPA) has not objected to the issuance, renewal, or revision of the Title V Operating Permit, and either
 - D. If the public comment period preceded the EPA review period, then the District had transmitted any public comments concerning the alternative requirements to EPA with the proposed permit, or
 - E. If the EPA and public comment periods ran concurrently, then the District had transmitted any public comments concerning the alternative requirements to EPA no later than 5 working days after the end of the public comment period.

The District's determination of approval of any alternative requirements is not binding on EPA. Noncompliance with any alternative requirement established pursuant to the Title V Operating Permit process constitutes a violation of the NO_x RACT Plan.



AIR POLLUTION CONTROL DISTRICT
LOUISVILLE, KENTUCKY

JERRY E. ABRAMSON
MAYOR

LAUREN ANDERSON, EXECUTIVE DIRECTOR

November 19, 2010

Mr. John Lyons, Director
Division for Air Quality
200 Fair Oaks Lane, 1st Floor
Frankfort, KY 40601

Dear Mr. Lyons:

The Air Pollution Control District of Jefferson County (District) requests that the enclosed material be submitted to the U.S. Environmental Protection Agency (EPA) as revisions to the Jefferson County portion of the Kentucky State Implementation Plan (SIP). Enclosed are two paper copies and two CD's, one of each for the EPA and one of each for the Kentucky Division for Air Quality (DAQ).

This package contains separate SIP requests for two regulations and three source specific requirements. The District requests that the Commonwealth request the following for each:

1. Regulation 6.29, *Standard of Performance for Graphic Arts Facilities Using Rotogravure or Flexographic Printing* – Submit for approval into the SIP.
2. Regulation 7.57, *Standard of Performance for New Graphic Arts Facilities Using Rotogravure or Flexographic Printing* – Remove the existing version from the SIP.
3. Louisville Medical Steam Plant - Reasonably Available Control Technology for a major source of oxides of nitrogen (NOx RACT), Board Order - Amendment 2
 - a. Submit for approval into the SIP.
 - b. Withdraw from the SIP NOx RACT Board Order – Amendment 1, approved on October 23, 2001.
4. Texas Gas Transmission - Reasonably Available Control Technology for a major source of oxides of nitrogen (NOx RACT), Board Order - Amendment 2 (Revision 1)
 - a. Submit for approval into the SIP.
 - b. Withdraw from the SIP t NOx RACT Board Order – Amendment 1, approved on October 23, 2001.

General Electric - Remove the Bubble Action approved on January 12, 1982.

www.louisvilleky.gov

Your prompt consideration of this request is appreciated. If you have any questions or comments, please contact Ms. Cynthia Lee at (502) 574-7217.

Sincerely,

A handwritten signature in black ink, appearing to be 'LA', with a long horizontal line extending to the right.

Lauren Anderson
Executive Director

Enclosures

**Louisville Metro Air Pollution Control District
State Implementation Plan Amendment Submittal**

District Regulations

Regulation 6.29, *Standard of Performance for Graphic Arts Facilities
Using Rotogravure or Flexographic Printing*

Regulation 7.57, *Standard of Performance for New Graphic Arts Facilities
Using Rotogravure or Flexographic Printing*

Source Specific NOx RACT

Louisville Medical Steam Plant
Texas Gas Transmission

Bubble Actions

General Electric

Prepared by:

**Louisville Metro Air Pollution Control District
850 Barret Avenue, Room 205
Louisville, Kentucky 40204**

November 19, 2010

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District Regulation 6.29

Standard of Performance for Graphic Arts Facilities Using Rotogravure or Flexographic Printing

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| Regulation Version 6 (May 1991) | |
| Regulation Version 7 (September 2002) | |
| Red line strike out version | |
| Final version | |
| Regulatory Impact Assessment | |
| Comment Response Document | |
| Policy Committee Meeting Agenda | |
| Public Notice | |
| Public Hearing and Board Meeting Agenda (August 2002) | |
| Minutes of the Public Hearing | |
| Minutes of the Regular Meeting | |
| Special Board Meeting Agenda (September 2002) | |
| Minutes of the Special Meeting | |
| Regulation Version 8 (November 2002) | |
| Red line strike out version | |
| Final version | |
| Regulatory Impact Assessment | |
| Comment Response Document | |
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| Public Notice | |
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- Red line strike out version
- Final version
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SIP Approval 47 FR 1291

REQUEST FOR EPA ACTION

Louisville Metro Air Pollution Control District requests a source specific revision to the Jefferson County portion of the State Implementation Plan (SIP) for **Texas Gas Transmission:**

Withdraw from the SIP, the oxides of nitrogen reasonably available control technology (NOx RACT) Board Order – Amendment 1 and substitute it with the NOx RACT Board Order – Amendment 2 (Revision 1).

This proposed SIP revision submittal package contains a copy of the plan approved by EPA on October 23, 2001 and the corresponding amendment.

Completeness Checklist

Program NOx RACT

1. Pollutant/Area Identification
2. Board Order, Amendment 1
3. Board Order, Amendment 2
4. Public Notices
5. Public Hearing Minutes
6. Board Minutes
7. Board Order, Amendment 2 (Revision1)
8. Public Notices
9. Public Hearing Minutes
10. Board Minutes

Pollutant/Area Identification

Pollutant: All

Affected Area: Jefferson County, Kentucky

Location: Louisville MSA

Area Designation: Nonattainment - Annual PM_{2.5};
Attainment - all other pollutants

Area SIP Status: Ozone - maintenance

Resulting Emissions Changes:

Increase _____

Decrease Not quantified – RACT intrinsic reduction

NOTE:

A comparative review of the Permit and State Effective Dates versus those noticed in the CFR identified a discrepancy:

66 CFR53685 noted: Permit No. NOx RACT Plan 11/08/99; State Effective Date 01/01/00

Correct: Permit No. NOx RACT Plan 12/20/00; State Effective Date 01/01/01

Air Pollution Control Board of Jefferson County Board Order - Amendment 1

This amended Board Order is issued by the Air Pollution Control Board of Jefferson County pursuant to the authority granted in Kentucky Revised Statutes Chapter 77 Air Pollution Control.

Company: Texas Gas Transmission (Texas Gas)
10327 Gaslight Way
Louisville, Kentucky

Background and Discussion

Regulation 6.42 *Reasonably Available Control Technology Requirements for Major Volatile Organic Compound- and Nitrogen Oxides-Emitting Facilities* requires the establishment and implementation of reasonably available control technology (RACT) for certain affected facilities that emit oxides of nitrogen (NO_x) and that are located at a major stationary source for NO_x. Section 4.4 requires that each determination of RACT approved by the Air Pollution Control District of Jefferson County (District) be submitted to the U.S. Environmental Protection Agency (EPA) as a site-specific revision of the Kentucky State Implementation Plan (SIP).

The initial Board Order was approved by the Board on November 8, 1999, and submitted to the EPA by the Kentucky Natural Resources and Environmental Protection Cabinet on November 12, 1999, as a site-specific revision of the Kentucky SIP. Subsequently, the EPA identified issues needing resolution before this NO_x RACT determination would be approved as part of the Kentucky SIP. This amended Board Order addresses those issues.

A Public Hearing on this amended Board Order was held before the Board on November 15, 2000. Based upon the evidence presented at that hearing, the Board determined that approval of this amended Board Order and submittal as a site-specific revision of the Kentucky SIP were appropriate.

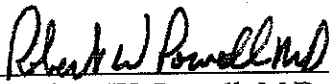
Now therefore be it ordered that:

1. The attached NO_x RACT Plan - Amendment 1, applicable to Texas Gas, is approved by the District. Texas Gas shall comply with this plan.
2. Compliance with the attached NO_x RACT Plan - Amendment 1 shall be deemed compliance with the requirements of Regulation 6.42 section 1.2, section 1.3, Section 2 to the extent that this Section applies to section 4.3, section 4.3, and Section 5 to the extent that this Section applies to verification of compliance with the requirements pursuant to section 4.3.

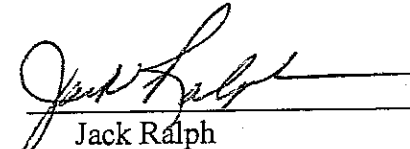
3. This amended Board Order shall not be deemed or construed to be the result of any violation of any federal, state, or local statute, regulation, or ordinance for any purpose whatsoever.
4. Texas Gas has reviewed this amended Board Order and consents to all its requirements and terms.
5. The effective date of this amended Board Order and the attached NO_x RACT Plan is January 1, 2001. The initial Board Order, approved on November 8, 1999, shall remain in effect until January 1, 2001.

Dated this 20th day of December, 2000.

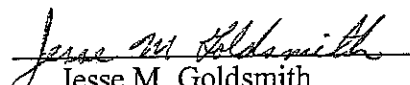
Air Pollution Control Board
of Jefferson County

By: 
Robert W. Powell, M.D.
Chairman

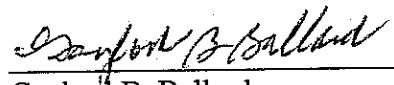
Texas Gas Transmission

By: 
Jack Ralph
Vice President, Operations

Air Pollution Control District
of Jefferson County

By: 
Jesse M. Goldsmith
Air Pollution Control Officer

Approved as to form and legality:
Air Pollution Control District
of Jefferson County

By: 
Gaylord B. Ballard
Attorney

NO_x RACT Plan - Amendment 1

1. The oxides of nitrogen (NO_x, expressed as NO₂) emissions from each of Internal Combustion (IC) Engines #1 through #9 shall not exceed 3 grams per brake-horsepower-hour (g/bhp-hr), according to the following schedule:
 - A. Four IC engines by no later than November 15, 2001, and
 - B. Five IC engines by no later than November 15, 2002.Until an individual IC engine is subject to the 3 g/bhp-hr NO_x emissions limit, Texas Gas Transmission (Texas Gas) shall restrict the operation of that IC engine to less than or equal to 1350 brake horsepower during the time period of May 1 through September 30 each year.

2. Until October 1, 2004, the NO_x (expressed as NO₂) emissions from Turbine T-1 shall not exceed 100 pounds per hour. Additionally, the exhaust temperature for Turbine T-1 shall not exceed 1006 °F. On and after October 1, 2004, the NO_x (expressed as NO₂) emissions from Turbine T-1 shall not exceed 75 parts per million by volume on a dry gas basis (ppmvd) corrected to 15% O₂. Additionally, Texas Gas shall comply with the following schedule for Turbine T-1:

| | |
|--|---------|
| A. Submit application for construction permit for Dry Low NO _x (DLN) controls | 3-1-03 |
| B. Place order for DLN controls | 6-1-03 |
| C. Begin installation of DLN controls | 6-1-04 |
| D. Begin operation of DLN controls | 10-1-04 |
| E. Conduct NO _x performance test for Turbine T-1 | 12-1-04 |
| F. Submit performance test results to the District | 1-15-05 |

3. The NO_x (expressed as NO₂) emissions from the Emergency Generator Engine shall not exceed 2.6 grams per brake horsepower-hour.

4. Texas Gas shall monitor and record the following information:
 - A. For each IC engine until it is subject to the 3 g/bhp-hr NO_x emissions limit:
 - (1) The daily hours of operation, and
 - (2) The brake horsepower every 4 hours,
 - B. For each IC engine after it is subject to the 3 g/bhp-hr NO_x emissions limit, the following parameters:
 - (1) Engine speed,
 - (2) Engine load,
 - (3) Fuel gas flow,
 - (4) Air manifold temperature,
 - (5) Air manifold pressure, and
 - (6) Ignition timing,
 - C. For Turbine T-1 until October 1, 2004:
 - (1) The daily hours of operation,
 - (2) The brake horsepower every 4 hours, and
 - (3) The exhaust temperature every 4 hours, except that the requirement to record the exhaust temperature shall begin January 15, 2001,
 - D. For Turbine T-1 on and after October 1, 2004, the combustion characteristic

parameters as determined appropriate by the District. The monitoring plan approved by the District shall be subject to EPA review and approval and shall be incorporated into a Title V Operating Permit pursuant to the provisions of NO_x RACT Plan Element (Element) No. 8, and

E. For the Emergency Generator Engine:

- (1) The weekly hours of operation.

Texas Gas shall record all periods when the required information in this Element was not available, the reason for the loss of data, and any corrective actions taken to resolve the problem. Each record shall be maintained for a minimum of 5 years and made available to the Air Pollution Control District (District) upon request.

5. Texas Gas shall conduct NO_x performance tests for the equipment identified in this Element according to the following schedule:

- A. Each year, one IC engine from the group of IC Engines #1 through #6. Testing of the engines shall be alternated such that each IC engine in this group has been tested in a six-year period,
- B. Each year, one IC engine from the group of IC Engines #7 through #9. Testing of the engines shall be alternated such that each IC engine in this group has been tested in a three-year period, and
- C. Each year starting in 2005, Turbine T-1.

If the requirements of Regulation 6.42 *Reasonably Available Control Technology Requirements for Major Volatile Organic Compound- and Nitrogen Oxides-Emitting Facilities* section 5.1 are met, and subject to the annual performance test schedule reinstatement provision, performance testing for the Turbine T-1 may be done on a biennial schedule.

6. Performance testing shall meet the following requirements:

- A. Emissions concentrations and the mass determinations shall be obtained using Reference Methods of 40 CFR Part 60 Appendix A. The following methods shall be used:
- (1) Method 1 or 1A, which furnishes guidance in site and traverse selection for sampling velocity at traverse points in stationary sources,
- (2) Method 2, 2A, 2B, 2C, 2D, 2E, 2F, 2G, or 2H, which applies to measurements of gas volumetric flow rates,
- (3) Method 3, 3A, 3B, or 3C, which is applicable for determining the concentrations of one or more of the following gases: carbon dioxide, oxygen (O₂), carbon monoxide, nitrogen, and methane,
- (4) Method 4, which determines the moisture content in stack gases, and
- (5) Method 7, 7A, 7B, 7C, 7D, or 7E, which provides the analytical method for determining the concentration of NO_x emissions from stationary sources.
- B. The use of other Reference Methods that are added to 40 CFR Part 60 Appendix A, alternative tests, or modifications to the Reference Methods listed in Element No. 6.A. may be proposed by Texas Gas as part of the testing plan required by Element No. 6.D. Such methods may be used if approved in writing by the District.
- C. Performance testing shall meet the requirements of Regulation 1.04 *Performance*

Tests that are not addressed in this Element.

- D. A notification of intent to conduct a performance test shall be submitted to the District at least 25 working days in advance of the projected starting date for the performance test. The notification shall include the proposed test methods to be used.
 - E. If a pre-test conference to discuss the proposed test methods is deemed necessary by the District, a pre-test conference shall be arranged by District personnel.
 - F. At least 10 working days' prior notice of the scheduled starting date for the performance test shall be provided to the District.
 - G. A performance test report shall be submitted to the District within 60 days of completion of performance testing. The report shall include the calculations used to determine emissions. The NO_x emission rate for each emissions unit for which performance testing is required in Element No. 5 shall be expressed in pounds per hour and grams per brake horsepower-hour. The NO_x emission rate for the Turbine T-1 shall also be expressed in parts per million by volume on a dry gas basis, corrected to 15% O₂. The raw data shall be retained by Texas Gas for a minimum of 5 years and made available to the District upon request. Selected portions of the raw data used to calculate the emissions shall be included in the report in a format provided by the District.
7. Texas Gas shall keep a record identifying all deviations from the requirements of this NO_x RACT Plan and shall submit to the District a written report of all deviations that occurred during the preceding semi-annual period. Semi-annual periods shall run from January 1 to June 30 and July 1 to December 31. The report shall contain the following information:
- A. The equipment designation,
 - B. The beginning and ending date of the reporting period,
 - C. Identification of all periods during which a deviation occurred, including the loss of data as required by Element No. 4,
 - D. A description, including the magnitude, of the deviation,
 - E. If known, the cause of the deviation, and
 - F. A description of all corrective actions taken to abate the deviation.
- If no deviation occurred during the semi-annual period, the report shall contain a negative declaration. The report shall also include a progress update regarding the installation of control equipment to meet the final emission limits in Elements No. 1 and 2. Each report shall be submitted within 60 days following the end of the semi-annual period.
8. In lieu of the requirements in this NO_x RACT Plan, Texas Gas may comply with alternative requirements regarding emission limitations, equipment operation, test methods, monitoring, recordkeeping, or reporting, provided the following conditions are met:
- A. The alternative requirements are established and incorporated into an operating permit pursuant to a Title V Operating Permit issuance, renewal, or significant permit revision process as established in Regulation 2.16,
 - B. The alternative requirements are consistent with the streamlining procedures and guidelines set forth in section II.A. of *White Paper Number 2 for Improved Implementation of the Part 70 Operating Permits Program*, March 5, 1996, U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards.

The overall effect of compliance with alternative requirements shall consider the effect on an intrinsic basis, such as grams per brake horsepower-hour,

- C. The U.S. Environmental Protection Agency (EPA) has not objected to the issuance, renewal, or revision of the Title V Operating Permit, and either
- D. If the public comment period preceded the EPA review period, then the District had transmitted any public comments concerning the alternative requirements to EPA with the proposed permit, or
- E. If the EPA and public comment periods ran concurrently, then the District had transmitted any public comments concerning the alternative requirements to EPA no later than 5 working days after the end of the public comment period.

The District's determination of approval of any alternative requirements is not binding on EPA. Noncompliance with any alternative requirement established pursuant to the Title V Operating Permit process constitutes a violation of this NO_x RACT Plan.

History: Approved 11-8-99; effective 1-1-00; amended a1/12-20-00 effective 1-1-01.

**Air Pollution Control Board of Jefferson County
Board Order - Amendment 2**

This amended Board Order is issued by the Air Pollution Control Board of Jefferson County pursuant to the authority granted in Kentucky Revised Statutes Chapter 77 Air Pollution Control.

Company: Texas Gas Transmission, LLC (Texas Gas)
10327 Gaslight Way
Louisville, Kentucky

Background and Discussion

Regulation 6.42 *Reasonably Available Control Technology Requirements for Major Volatile Organic Compound- and Nitrogen Oxides-Emitting Facilities* requires the establishment and implementation of reasonably available control technology (RACT) for certain affected facilities that emit oxides of nitrogen (NO_x) and that are located at a major stationary source for NO_x. Section 4.4 requires that each determination of RACT approved by the Air Pollution Control District of Jefferson County (District) be submitted to the U.S. Environmental Protection Agency (EPA) as a site-specific revision of the Kentucky State Implementation Plan (SIP).

The initial Board Order was approved by the Board on November 8, 1999, and submitted to the EPA by the Kentucky Natural Resources and Environmental Protection Cabinet on November 12, 1999, as a site-specific revision of the Kentucky SIP. Subsequently, the EPA identified issues needing resolution before this NO_x RACT determination would be approved as part of the Kentucky SIP. This amended Board Order addresses those issues.

A Public Hearing on this Board Order Amendment 1 was held before the Board on November 15, 2000. Based upon the evidence presented at that hearing, the Board determined that approval of this amended Board Order and submittal as a site-specific revision of the Kentucky SIP were appropriate.

Amendment 2 of this Board Order was done to remove old compressor turbine T-1 emission requirements, add emission requirements for new compressor turbine T-2, and incorporate emission requirements for the Lean Emission Combustion (LEC) modifications performed to the nine (9) reciprocating internal combustion engine compressors.

Now therefore be it ordered that:

1. The attached NO_x RACT Plan - Amendment 2, applicable to Texas Gas, is approved by the District. Texas Gas shall comply with this plan.
2. Compliance with the attached NO_x RACT Plan - Amendment 2 shall be deemed compliance with the requirements of Regulation 6.42 section 1.2, section 1.3, Section 2 to the extent that this Section applies to section 4.3, and Section 5 to the extent that this

Section applies to verification of compliance with the requirements pursuant to section 4.3.

3. This amended Board Order shall not be deemed or construed to be the result of any violation of any federal, state, or local statute, regulation, or ordinance for any purpose whatsoever.
4. Texas Gas has reviewed this amended Board Order and consents to all its requirements and terms.
5. The initial Board Order was approved on November 8, 1999. Amendment 1 was approved on December 20, 2000.
6. The effective date of this amended Board Order and the attached NO_x RACT Plan is June 17, 2009. The amended Board Order, approved on December 20, 2000, shall remain in effect until June 17, 2009.

Dated this 17th day of June, 2009.

Air Pollution Control Board
of Jefferson County

By: Robert W. Powell
Robert W. Powell, M.D.
Chairman

Texas Gas Transmission, LLC

By: David Goodwin
David Goodwin
VP, Compliance & Operations Services

Air Pollution Control District
of Jefferson County

By: Paul Aud
Paul Aud
Air Pollution Control Officer

Approved as to form and legality:
Air Pollution Control District
of Jefferson County

By: Stacy A. Fritze
Stacy A. Fritze
Assistant County Attorney

NO_x RACT Plan - Amendment 2

1. The oxides of nitrogen (NO_x, expressed as NO₂) emissions from each of Internal Combustion (IC) Engines #1 through #9 shall not exceed 3 grams per brake-horsepower-hour (g/bhp-hr), based on a thirty (30) day rolling average period.
2. Existing Lean Emission Combustion (LEC) equipment modifications, completed October 2002, per construction permit 68-01-C, to the nine (9) Reciprocating Internal Combustion Engines (RICE) shall remain in place, to ensure the 3g/bhp-hr limit of NO_x, based on a thirty (30) day rolling average period, is maintained.
3. The NO_x emissions (expressed as NO₂) for the new compressor turbine T-2 (emission point U21) shall not exceed thirty-seven and one-half parts per million by volume on a dry gas basis (37.5 ppmvd) corrected to 15% O₂, based on a one hour average. (Regulation 6.42)
4. No stationary gas turbine shall discharge any gases into the atmosphere which contain nitrogen oxides in excess of one hundred ninety-seven parts per million by volume on a dry gas basis (197 ppmvd) corrected to 15% O₂, based on a one hour average. (40 CFR 60.332 (a) (2))
5. No fuel shall be combusted in the stationary gas turbine that contains sulfur in excess of 0.8 % by weight. (40 CFR 60.333 (b))
6. The NO_x (expressed as NO₂) emissions from the Emergency Generator Engine shall not exceed 2.6 grams per brake horsepower-hour, per manufacturer's guarantee, based on a thirty (30) day rolling average period, and generator usage shall not exceed 1,500 hr/yr.
7. Texas Gas shall monitor and record the following information:
 - A. For each IC engine after it is subject to the 3 g/bhp-hr NO_x emissions limit, the following parameters shall be monitored continuously on a real time basis, but no regular interval recording shall be required. Engines will continue to be properly maintained and operated based on monitored parameters.
 - (1) Engine speed,
 - (2) Engine load,
 - (3) Fuel gas flow,
 - (4) Air manifold temperature,
 - (5) Air manifold pressure, and
 - (6) Ignition timing, and
 - (7) Stack tests as required in Element No. 8, to confirm NO_x emissions less than 3 g/bhp-hr.
 - B. For Turbine T-2 (new) the following monitoring and recording plan, which shall be approved by the District, subject to EPA review and approval, and shall be incorporated into the Title V Operating Permit pursuant to the provisions of NO_x RACT Plan Element No. 11, shall be implemented:
 - (1) Periods of time when turbine T-2 is not operating in the SoLoNO_x mode, and startup and shutdown time periods, and
 - (2) Stack tests as required in Element No. 8, to confirm NO_x emissions less than 37.5 ppmvd, corrected to 15% O₂, when operating in SoLoNO_x mode.

C. For the Emergency Generator Engine:

- (1) The weekly hours of operation and the twelve (12) consecutive month period total hours of operation, shall be recorded each month, to show that the total hours of operation during the previous twelve consecutive (12) month period is less than 1,500 hrs.

Texas Gas shall record all periods when the required information in this Element was not available, the reason for the loss of data, and any corrective actions taken to resolve the problem. Each record shall be maintained for a minimum of 5 years and made available to the Air Pollution Control District (District) upon request.

8. Texas Gas shall conduct NO_x performance tests for the equipment identified in this Element according to the following schedule:
 - A. Each year, two IC engines from the group of IC Engines #1 through #6. Testing of the engines shall be alternated such that each IC engine in this group has been tested in a three-year period,
 - B. Each year, one IC engine from the group of IC Engines #7 through #9. Testing of the engines shall be alternated such that each IC engine in this group has been tested in a three-year period, and
 - C. Each year, Turbine T-2.
9. Performance testing shall meet the following requirements:
 - A. Emissions concentrations and the mass determinations shall be obtained using Reference Methods of 40 CFR Part 60 Appendix A. The following methods shall be used:
 - (1) Method 1 or 1A, which furnishes guidance in site and traverse selection for sampling velocity at traverse points in stationary sources,
 - (2) Method 2, 2A, 2B, 2C, 2D, 2E, 2F, 2G, or 2H, which applies to measurements of gas volumetric flow rates,
 - (3) Method 3, 3A, 3B, or 3C, which is applicable for determining the concentrations of one or more of the following gases: carbon dioxide (CO₂), oxygen (O₂), carbon monoxide (CO), nitrogen, and methane,
 - (4) Method 4, which determines the moisture content in stack gases, and
 - (5) Method 7, 7A, 7B, 7C, 7D, or 7E, which provides the analytical method for determining the concentration of NO_x emissions from stationary sources.
 - (6) Method 19, which is acceptable for determine the exhaust flow rate.
 - B. The use of other Reference Methods that are added to 40 CFR Part 60 Appendix A, alternative tests, or modifications to the Reference Methods listed in NO_x RACT Plan Element No. 9.A. may be proposed by Texas Gas as part of the testing plan required by Element No. 9.D. Such methods may be used if approved in writing by the Louisville Metro Air Pollution Control District (District).
 - C. Performance testing shall meet the requirements of Regulation 1.04 *Performance Tests* that are not addressed in this Element. All testing shall be conducted at 90% or greater of the maximum rated heat input capacity of the equipment.
 - D. A notification of intent (protocol) to conduct a performance test shall be submitted to the District at least 25 working days in advance of the projected starting date for the performance test. The notification shall include the proposed test methods to be used.
 - E. If a pre-test conference to discuss the proposed test methods is deemed necessary by the District, a pre-test conference shall be arranged by District personnel.

- F. At least 10 working days' prior notice of the scheduled starting date for the performance test shall be provided to the District.
 - G. A performance test report shall be submitted to the District within 60 days of completion of performance testing. The report shall include the calculations used to determine emissions. The NO_x emission rate for each RICE emissions unit for which performance testing is required in Element No. 8, shall be expressed in pounds per hour and grams per brake horsepower-hour. The NO_x emission rate for the Turbine T-2 shall be expressed in parts per million by volume on a dry gas basis, corrected to 15% O₂. The raw data shall be retained by Texas Gas for a minimum of 5 years and made available to the District upon request. Selected portions of the raw data used to calculate the emissions shall be included in the report in a format provided by the District.
10. Texas Gas shall keep a record identifying all deviations from the requirements of this NO_x RACT Plan and shall submit to the District a written report of all deviations that occurred during the preceding semi-annual period. Semi-annual periods shall run from January 1 to June 30 and July 1 to December 31. The report shall contain the following information:
- A. The equipment designation,
 - B. The beginning and ending date of the reporting period,
 - C. Identification of all periods during which a deviation occurred, including the loss of data as required by Element 7,
 - D. A description, including the magnitude, of the deviation,
 - E. If known, the cause of the deviation, and
 - F. A description of all corrective actions taken to abate the deviation.
- If no deviation occurred during the semi-annual period, the report shall contain a negative declaration. Each report shall be submitted within 60 days following the end of the semi-annual period.
11. In lieu of the requirements in this NO_x RACT Plan, Texas Gas may comply with alternative requirements regarding emission limitations, equipment operation, test methods, monitoring, record keeping, or reporting, provided the following conditions are met:
- A. The alternative requirements are established and incorporated into an operating permit pursuant to a Title V Operating Permit issuance, renewal, or significant permit revision process as established in Regulation 2.16,
 - B. The alternative requirements are consistent with the streamlining procedures and guidelines set forth in section II.A. of *White Paper Number 2 for Improved Implementation of the Part 70 Operating Permits Program*, March 5, 1996, U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards. The overall effect of compliance with alternative requirements shall consider the effect on an intrinsic basis, such as grams per brake horsepower-hour,
 - C. The U.S. Environmental Protection Agency (EPA) has not objected to the issuance, renewal, or revision of the Title V Operating Permit, and either
 - D. If the public comment period preceded the EPA review period, then the District had transmitted any public comments concerning the alternative requirements to EPA with the proposed permit, or
 - E. If the EPA and public comment periods ran concurrently, then the District had transmitted any public comments concerning the alternative requirements to EPA no later than 5 working days after the end of the public comment period.

The District's determination of approval of any alternative requirements is not binding on EPA. Noncompliance with any alternative requirement established pursuant to the Title V Operating Permit process constitutes a violation of this NO_x RACT Plan.

History: Approved 11-8-99; effective 1-1-00; amended a1/12-20-00; effective 01-01-01; a2/02-XX-09 effective 3-XX-09.

Notice of Public Comment Period and Hearing

The Louisville Metro Air Pollution Control Board opens a public comment period May 18, 2009, on an amended Board Order and site-specific plan for oxides of nitrogen (NOx) reasonably available control technology (RACT) for Texas Gas Transmission, LLC. If approved by the Board, this amended NOx RACT plan will be submitted to the U.S. Environmental Protection Agency for revision of the Kentucky State Implementation Plan.

Written statements will be accepted by the Board, Joseph Schweinhart, Secretary-Treasurer, Louisville Metro Air Pollution Control District, 850 Barret Ave., Louisville, KY 40204-1745, until 5:00 p.m. June 17, 2009. Written statements will also be accepted electronically until the same deadline via the Internet at the email address airorder@louisvilleky.gov. Oral statement will be accepted at the public hearing on June 17, 2009, at 10:00 a.m. in the Board Room, 850 Barret Ave., Louisville.

A paper copy of the proposed Board Order may be obtained from Monica Little, (502) 574-7246, between 8:00 a.m. and 5:00 p.m., Monday through Friday. An electronic copy of the proposed Board Order may be downloaded from the District's website at www.louisvilleky.gov/APCD/Docket.htm.

To be published on May 18, 2009, and June 10, 2009, in *The Courier-Journal* Metro edition, 14 Public Notices column.

cc: Powell, Al-Shami, Anderson, Addison, Aud, Shipley, Stull, Schweinhart, Lee, and Lobby Bulletin Board

THE COURIER-JOURNAL INC.

STATE OF KENTUCKY
County of Jefferson

Affidavit of Publication

I, Margie Wise of THE COURIER-JOURNAL, Inc., clerk of THE COURIER JOURNAL general circulation printed and published at Louisville, Kentucky, do solemnly swear that from my own personal knowledge, and reference to the files of said publication, the advertisement of:

Title: *Notice of Public Comment* Total Lines: *86*
Period & Hearing
Run Date(s): *5/17/2009* Total Inches: *1x8.38*

Margie Wise
Signature of person making proof

Subscribed and sworn to before me this *2nd* day of *May*, 2009.

Jantice Capris Richardson
/ Notary/ My Commission expires



JCR

TX 6AS

Office of Public Information, Period and Hearing, The Courier-Journal, Inc., 600 North 2nd Street, Louisville, KY 40202-1745, (502) 582-7246, between 8:00 a.m. and 5:00 p.m., Monday through Friday. An electronic copy of the proposed Board Order may be obtained from Monday through Friday, 8:00 a.m. to 5:00 p.m., Monday through Friday. An electronic copy of the proposed Board Order may be obtained from the website at www.louisvilleky.gov/APed/060409.htm

**Public Hearing Minutes
of the
Louisville Metro Air Pollution Control Board
June 17, 2009**

A public hearing of the Louisville Metro Air Pollution Control Board was called to order on June 17, 2009, at 9:57 a.m. in the Board Room of the Louisville Metro Air Pollution Control District (District), 850 Barret Avenue, Louisville, Kentucky, by the Chairman, Dr. Robert Powell.

General Statement, Rules and Purpose

The Chairman read the opening announcements, rules and purpose of the Public Hearing which was to review an Amended NO_x RACT Agreed Board Order with Texas Gas Transmission, LLC, and an Agreed Board Order with American Synthetic Rubber Company.

1. Amended NO_x RACT Agreed Board Order with Texas Gas Transmission, LLC

Ms. Anderson said the Agreed Board Order with Texas Gas is the second amendment to their NO_x RACT plan. She said there were initially ten NO_x RACT orders that were entered into between several companies and the Board in 1999. Ms. Anderson said that Amendment 2 of the Agreed Board with Texas Gas replaced the outdated requirements that were in Amendment 1. She reported that Texas Gas has replaced one of their turbines with a new turbine and added NO_x combustion controls which lowered NO_x emission limits.

Ms. Anderson said that overall, the projects that were incorporated in the Amended Agreed Board Order with Texas Gas reduced allowable NO_x emissions from 4,288 tons per year to 871 tons per year, which was a reduction of 3,417 tons of NO_x emissions. She said changes Texas Gas have made meet the requirements of any Reasonably Available Control Technology (RACT). Ms. Anderson said that changes in the company's second Amended Board Order would be incorporated into their Title V operating permit.

Comments

Mr. Jacobs stated that lower emission limits from Texas Gas is good for the community.

2. Agreed Board Order with American Synthetic Rubber Company

Ms. Phelps asked the Board to consider adoption of a proposed Agreed Board Order alleging that American Synthetic Rubber Company (ASRC) violated its District permit and directing the company to pay an administrative penalty and to take corrective action. The company had agreed to the terms of the order.

Ms. Phelps said ASRC, which is a division of Michelin North America, Inc., owns and operates a synthetic rubber manufacturing facility pursuant to a Title V operating permit issued by the District and before the Title V was issued in 2006, pursuant to a District construction and operating permit. The District alleged that the facility's emissions from its boilers, Number 1 and 2, exceeded the hourly sulfur dioxide limits in its Title V permit and prevention of significant deterioration (PSD) permit on numerous occasions dating back to 2002. The PSD program is a federal permitting program for major sources of certain pollutants that is designed

to prevent deterioration of air quality in areas that currently meet the national ambient air quality standards and to protect national parks and other special areas. Ms. Phelps said the company disputed that its boiler emissions had exceeded the hourly sulfur dioxide standards as alleged by the District. Also, she said the company disputed that its boilers were subject to an hourly sulfur dioxide standard although the standard appeared on the face of its permit and in the section designated "allowable emissions."

Ms. Phelps said the District filed petitions for an administrative hearing on these alleged violations and the company had filed petitions for a hearing to contest the issuance of its revised PSD permit and Title V permit in 2005 and 2006 because they contained the hourly sulfur dioxide emissions limit. Ms. Phelps said that in order to move beyond this dispute, the District and the company had agreed that the company would request revisions to its PSD permits and provide justification for its proposal. She said the District had reviewed the company's application and demonstration of Best Available Control Technology (BACT) and had prepared and released for public review and comment a draft permit containing the following conditions: combustion of less than one percent sulfur coal; a lower sulfur dioxide emission limit of 0.2 lbs/MMBtu on a 30-day rolling average; and an operations and maintenance plan which should decrease the downtime of the sulfur dioxide removal system. Ms. Phelps said that after the 30-day notice period and EPA's review of the draft permit, the District would issue revised PSD permits. The company had agreed not to contest the permits if they were substantially the same as those released for public comment. The company also agreed to comply with the new, more stringent standard in the draft permit in exchange for the District's agreement not to take enforcement on any exceedance of the hourly limit in the current permit.

Ms. Phelps said the company had agreed to pay an administrative penalty of \$112,500 to settle the District allegations of exceedance of the hourly sulfur dioxide limits in the past.

Ms. Phelps said the District recommended that the Board adopt the Agreed Board Order as proposed.

Statements

Brad Karac, Chief Operating Officer at American Synthetic Rubber Company (ASRC), made a statement regarding the alleged violations. Mr. Karac said that ASRC has continually made improvements at the facility since the permit application was granted in 1990 for the construction of two coal-fired boilers. He stated the company believes their sulfur dioxide emissions were within the limitation range listed in the 1990 construction permit. Mr. Karac said ASRC has always taken actions to minimize sulfur dioxide emissions and the company disputes the District's allegations of violating the sulfur dioxide limitations. He said in order to resolve the dispute with the District, ASRC has agreed to pay the administrative penalty amount for violations they did not commit. Mr. Karac asked the Board to approve the Agreed Board Order.

Dr. Al-Shami asked how many pounds per year of sulfur dioxide were emitted by ASRC and if the emissions were allowable by EPA. Mr. Karac said the permit allowed the company to emit 619 tons per year, and during the last few years they emitted 150 pounds. He said the company has been over-scrubbing and have been well below the permit limitations for a while. Also, Mr. Karac said he believed the company's goal to achieve a 30-day rolling average of sulfur dioxide emissions is consistent with similar operations across the country.

Emily Boone, LCSW and a member of the Clifton Community Council, thanked the Board for their perseverance in finalizing the Agreed Board Order with ASRC.

Adjournment

The public hearing adjourned at 10:14 a.m.



Robert W. Powell, M.D.
Chairman



Joseph E. Schweinhart
Secretary-Treasurer

**Minutes
Regular Meeting
of the
Louisville Metro Air Pollution Control Board
June 17, 2009**

The regular meeting of the Louisville Metro Air Pollution Control Board (Board) was called to order on June 17, 2009, at 10:15 a.m. in the Board Room of the Louisville Metro Air Pollution Control District, 850 Barret Avenue, Louisville, Kentucky, by the Chairman, Dr. Robert Powell. Other Board members present were Ms. Barbara Sexton Smith, Ms. Vanessa Ruffin, Ms. Bonnie Biemer, and Mr. Bill Jacob. A quorum was present.

The following Louisville Metro Air Pollution Control District (District) staff members were present: Lauren Anderson, Joseph Schweinhart, Terri Phelps, Matt Stull, Cynthia Lee, Rachael Hamilton, Eva Addison, Steven Gravatte, Stephen Taylor, Erin Vachon, Shane Corbin, Craig Butler, Karen Thorne, Shannon Clemons Hosey, Narathip Chitradon, Devin Cassell, Dustin Gohs, Steven Grice, and Monica Little. Also present was Assistant County Attorney Stacy Fritze Dott, and County Attorney staff member Tammy Brown.

The following guests were present: Andy Battjes, Brown-Forman; Emily Boone, Clifton Community Council; Tyler Bolden, ASRC; Dennis Conniff, Frost Brown Todd; Tim Corrigan, GLI; Sharon Dodson, E.ON; Justin Faith, Stites & Harbison; Arnita Gadson, Kentucky Environmental Quality Commission; Barbara Hall, Ford-Kentucky Truck Plant; Carl Hilton, West Jefferson County Community Task Force; Paul Howard, MACTEC; Brad Karas, ASRC; Frank Kennedy, KEC; Cheryl-Lynne Patrick, Frost Brown Todd; Richard Robinson, ASRC; Sarah Scheetz, E.ON U.S.; Lauran Sturm, Stites & Harbison; and Paige Mosser Theriac, Theriac Environmental Consultants, Inc.

Introductions

Ms. Anderson introduced Dustin Gohs and Steven Grice, co-op students from the University of Louisville Speed School of Engineering, who are in placement at the District. She also introduced Devin Cassell, a part-time engineering contractor at the District; and Rachael Hamilton, a contractor working on District regulations.

Ms. Anderson announced that Matt King was promoted from Engineer I to an Engineering Supervisor.

Approval of Minutes

The minutes of the Public Hearing and regular Board meeting held on May 20, 2009, were approved as written.

New Business

A. Amended NO_x RACT Agreed Board Order with Texas Gas Transmission

Ms. Anderson said the District recommended that the Board adopt the Amended Agreed Board Order with Texas Gas Transmission, as proposed.

Motion: Mr. Jacob moved to adopt the amended Agreed Board Order with Texas Gas Transmission, as proposed by the District.

The motion passed unanimously.

B. Agreed Board Order with American Synthetic Rubber Company

Ms. Phelps said the District recommended that the Board adopt the Agreed Board Order with American Synthetic Rubber Company, as proposed.

Motion: Ms. Biemer moved to adopt the Agreed Board Order with American Synthetic Rubber Company as proposed by the District.

The motion passed unanimously.

C. Air Quality Trust Fund

Mr. Schweinhart reported that each year at the June Board meeting, the Board receives a report on the income and disbursements in the Air Quality Trust Fund. He said the current balance in the account is \$33,782.02 and no disbursements occurred since last year.

Staff Reports

A. Director

Ms. Anderson said the District was scheduled to meet with the Metro Council on June 16, 2009, to review the District's 2009-10 proposed budget, but the meeting was canceled and rescheduled on June 18, 2009. Ms. Anderson said the Economic Development budget proposed by the Mayor is \$42.5 million, of which the District is expected to receive \$6.5 million. Ms. Anderson said the District is part of Economic Development, which did have a serious funding cut. She reported the District did not have to lay off staff, but two positions that were vacant were eliminated. She said the District's revenue comes from a variety of sources and services are very comprehensive for a local program. Also, she said the District may receive additional funding from EPA since the District has been underfunded for several years.

Ms. Anderson said the U.S. won the case against Duke Energy regarding the Gallagher plant in Indiana. Also, the case with EPA and the Paradise coal-fired plant in Muhlenburg County, Kentucky has resulted in a consent decree.

Ms. Anderson informed the Board that she plans to discuss with them soon several EPA proposals that are expected to burden state and local agencies.

Ms. Anderson announced that Mayor Abramson signed the Mayor's Climate Protection Agreement which is an agreement to reduce greenhouse gas emissions to seven percent below 1990 levels. Also she stated that President Obama has proposed that EPA's 2009-10 budget be increased to \$2.5 million more than last year, and the additional funding will be allocated to air toxics monitoring of schools that reside near chemical companies. Also, she said the Obama

administration has proposed new vehicle standards and a Cash for Clunkers program for consumers who trade in their vehicles for a fuel efficient model.

B. Air Quality Data

Ms. Anderson said that the community has experienced two ozone exceedances under the new ozone standard. She said that PM_{2.5} and ozone are the two pollutants that present the most challenges for the community.

The air quality monitoring reports were submitted for filing. A copy of each report is attached to the original minutes.

C. Enforcement Status Report

The enforcement report was submitted for filing. A copy is attached to the original minutes.

D. Excess Emission Report

The May 2009 *Excess Emission Report* was submitted for filing. A copy is attached to the original minutes.

E. Permit Application Reports

The permit application reports were submitted for filing. A copy is attached to the original minutes.

F. Lawn Care for Cleaner Air Awards

The list of this month's *Lawn Care for Cleaner Air Award* recipients was submitted for filing. A copy is attached to the original minutes.

Next Meeting

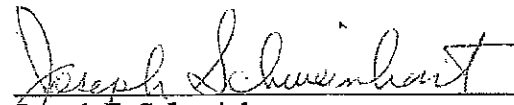
The next regular Board meeting is scheduled for Wednesday, July 15, 2009, at 10:00 a.m.

Adjournment

The meeting was adjourned at 10:43 a.m.



Robert W. Powell, M.D.
Chairman



Joseph E. Schweinhart
Secretary-Treasurer

**Air Pollution Control Board of Jefferson County
Board Order - Amendment 2 (Revision 1)**

This revised Board Order is issued by the Air Pollution Control Board of Jefferson County pursuant to the authority granted in Kentucky Revised Statutes Chapter 77 Air Pollution Control.

Company: Texas Gas Transmission, LLC (Texas Gas)
10327 Gaslight Way
Louisville, Kentucky

Background and Discussion

This revision of Board Order Amendment 2 with Texas Gas is being brought before the Board due to an administrative error that occurred in the publishing of the public notice requirement. The District requested that the Courier Journal publish two public notices before the adoption of the previous Order. The District recently discovered that the first notice was published, but the second notice was not. As the second notice is required by law, a revised Order that meets the public notice requirements is necessary. The requirements in this revised Order remain the same as Board Order Amendment 2. The company was not responsible for the publishing error, and has remained in compliance with the previous Order at all times.

Regulation 6.42 *Reasonably Available Control Technology Requirements for Major Volatile Organic Compound- and Nitrogen Oxides-Emitting Facilities* requires the establishment and implementation of reasonably available control technology (RACT) for certain affected facilities that emit oxides of nitrogen (NO_x) and that are located at a major stationary source for NO_x. Section 4.4 requires that each determination of RACT approved by the Air Pollution Control District of Jefferson County (District) be submitted to the U.S. Environmental Protection Agency (EPA) as a site-specific revision of the Kentucky State Implementation Plan (SIP).

The initial Board Order was approved by the Board on November 8, 1999, and submitted to the EPA by the Kentucky Natural Resources and Environmental Protection Cabinet on November 12, 1999, as a site-specific revision of the Kentucky SIP. Subsequently, the EPA identified issues needing resolution before this NO_x RACT determination would be approved as part of the Kentucky SIP. Amendment 1 of the Board Order addressed those issues. A public hearing on Board Order Amendment 1 was held before the Board on November 15, 2000. Based upon the evidence presented at that hearing, the Board determined that approval of the amended Board Order and submittal as a site-specific revision of the Kentucky SIP were appropriate.

Amendment 2 of the Board Order was done to remove old compressor turbine T-1 emission requirements, add emission requirements for new compressor turbine T-2, and incorporate emission requirements for the Lean Emission Combustion (LEC) modifications performed to the nine (9) reciprocating internal combustion engine compressors. A public hearing on Board Order Amendment 2 was held before the Board on June 16, 2009. Based upon the evidence presented at that hearing, the Board determined that approval of Amendment 2 of the Board Order and submittal as a site-specific revision of the Kentucky SIP were appropriate.

Amendment 2, Revision 1 is being brought before the Board in order to fully comply with public notice requirements.

Now therefore be it ordered that:

1. The attached NO_x RACT Plan - Amendment 2, applicable to Texas Gas, is approved by the District. Texas Gas shall comply with this plan.
2. Compliance with the attached NO_x RACT Plan - Amendment 2 shall be deemed compliance with the requirements of Regulation 6.42 section 1.2, section 1.3, Section 2 to the extent that this Section applies to section 4.3, and Section 5 to the extent that this Section applies to verification of compliance with the requirements pursuant to section 4.3.
3. This revised Board Order shall not be deemed or construed to be the result of any violation of any federal, state, or local statute, regulation, or ordinance for any purpose whatsoever.
4. Texas Gas has reviewed this revised Board Order and consents to all its requirements and terms.
5. The initial Board Order was approved on November 8, 1999. Amendment 1 was approved on December 20, 2000.
6. Amendment 2 and the attached NO_x RACT Plan were first approved on June 17, 2009.
7. The effective date of this revised Board Order and the attached NO_x RACT Plan is October 20, 2010.

Dated this 20th day of October, 2010.

Louisville Metro Air Pollution
Control Board

By: Robert W. Powell
Robert W. Powell, M.D.
Chairman

Texas Gas Transmission, LLC

By: David Goodwin
David Goodwin
VP, Compliance & Operations Services

Louisville Metro Air Pollution
Control District

By: Paul Aud
Paul Aud
Air Pollution Control Officer

Approved as to form and legality:

By: Stacy Fritze Dott
Stacy Fritze Dott
Assistant County Attorney

NO_x RACT Plan - Amendment 2

1. The oxides of nitrogen (NO_x, expressed as NO₂) emissions from each of Internal Combustion (IC) Engines #1 through #9 shall not exceed 3 grams per brake-horsepower-hour (g/bhp-hr), based on a thirty (30) day rolling average period.
2. Existing Lean Emission Combustion (LEC) equipment modifications, completed October 2002, per construction permit 68-01-C, to the nine (9) Reciprocating Internal Combustion Engines (RICE) shall remain in place, to ensure the 3g/bhp-hr limit of NO_x, based on a thirty (30) day rolling average period, is maintained.
3. The NO_x emissions (expressed as NO₂) for the new compressor turbine T-2 (emission point U21) shall not exceed thirty-seven and one-half parts per million by volume on a dry gas basis (37.5 ppmvd) corrected to 15% O₂, based on a one hour average. (Regulation 6.42)
4. No stationary gas turbine shall discharge any gases into the atmosphere which contain nitrogen oxides in excess of one hundred ninety-seven parts per million by volume on a dry gas basis (197 ppmvd) corrected to 15% O₂, based on a one hour average. (40 CFR 60.332 (a) (2))
5. No fuel shall be combusted in the stationary gas turbine that contains sulfur in excess of 0.8 % by weight. (40 CFR 60.333 (b))
6. The NO_x (expressed as NO₂) emissions from the Emergency Generator Engine shall not exceed 2.6 grams per brake horsepower-hour, per manufacturer's guarantee, based on a thirty (30) day rolling average period, and generator usage shall not exceed 1,500 hr/yr.
7. Texas Gas shall monitor and record the following information:
 - A. For each IC engine after it is subject to the 3 g/bhp-hr NO_x emissions limit, the following parameters shall be monitored continuously on a real time basis, but no regular interval recording shall be required. Engines will continue to be properly maintained and operated based on monitored parameters.
 - (1) Engine speed,
 - (2) Engine load,
 - (3) Fuel gas flow,
 - (4) Air manifold temperature,
 - (5) Air manifold pressure, and
 - (6) Ignition timing, and
 - (7) Stack tests as required in Element No. 8, to confirm NO_x emissions less than 3 g/bhp-hr.
 - B. For Turbine T-2 (new) the following monitoring and recording plan, which shall be approved by the District, subject to EPA review and approval, and shall be incorporated into the Title V Operating Permit pursuant to the provisions of NO_x RACT Plan Element No. 11, shall be implemented:
 - (1) Periods of time when turbine T-2 is not operating in the SoLoNO_x mode, and startup and shutdown time periods, and
 - (2) Stack tests as required in Element No. 8, to confirm NO_x emissions less than 37.5 ppmvd, corrected to 15% O₂, when operating in SoLoNO_x mode.
 - C. For the Emergency Generator Engine:

- (1) The weekly hours of operation and the twelve (12) consecutive month period total hours of operation, shall be recorded each month, to show that the total hours of operation during the previous twelve consecutive (12) month period is less than 1,500 hrs.

Texas Gas shall record all periods when the required information in this Element was not available, the reason for the loss of data, and any corrective actions taken to resolve the problem. Each record shall be maintained for a minimum of 5 years and made available to the Air Pollution Control District (District) upon request.

8. Texas Gas shall conduct NO_x performance tests for the equipment identified in this Element according to the following schedule:
 - A. Each year, two IC engines from the group of IC Engines #1 through #6. Testing of the engines shall be alternated such that each IC engine in this group has been tested in a three-year period,
 - B. Each year, one IC engine from the group of IC Engines #7 through #9. Testing of the engines shall be alternated such that each IC engine in this group has been tested in a three-year period, and
 - C. Each year, Turbine T-2.
9. Performance testing shall meet the following requirements:
 - A. Emissions concentrations and the mass determinations shall be obtained using Reference Methods of 40 CFR Part 60 Appendix A. The following methods shall be used:
 - (1) Method 1 or 1A, which furnishes guidance in site and traverse selection for sampling velocity at traverse points in stationary sources,
 - (2) Method 2, 2A, 2B, 2C, 2D, 2E, 2F, 2G, or 2H, which applies to measurements of gas volumetric flow rates,
 - (3) Method 3, 3A, 3B, or 3C, which is applicable for determining the concentrations of one or more of the following gases: carbon dioxide (CO₂), oxygen (O₂), carbon monoxide (CO), nitrogen, and methane,
 - (4) Method 4, which determines the moisture content in stack gases, and
 - (5) Method 7, 7A, 7B, 7C, 7D, or 7E, which provides the analytical method for determining the concentration of NO_x emissions from stationary sources.
 - (6) Method 19, which is acceptable for determine the exhaust flow rate.
 - B. The use of other Reference Methods that are added to 40 CFR Part 60 Appendix A, alternative tests, or modifications to the Reference Methods listed in NO_x RACT Plan Element No. 9.A. may be proposed by Texas Gas as part of the testing plan required by Element No. 9.D. Such methods may be used if approved in writing by the Louisville Metro Air Pollution Control District (District).
 - C. Performance testing shall meet the requirements of Regulation 1.04 *Performance Tests* that are not addressed in this Element. All testing shall be conducted at 90% or greater of the maximum rated heat input capacity of the equipment.
 - D. A notification of intent (protocol) to conduct a performance test shall be submitted to the District at least 25 working days in advance of the projected starting date for the performance test. The notification shall include the proposed test methods to be used.
 - E. If a pre-test conference to discuss the proposed test methods is deemed necessary by the District, a pre-test conference shall be arranged by District personnel.
 - F. At least 10 working days' prior notice of the scheduled starting date for the

performance test shall be provided to the District.

- G. A performance test report shall be submitted to the District within 60 days of completion of performance testing. The report shall include the calculations used to determine emissions. The NO_x emission rate for each RICE emissions unit for which performance testing is required in Element No. 8, shall be expressed in pounds per hour and grams per brake horsepower-hour. The NO_x emission rate for the Turbine T-2 shall be expressed in parts per million by volume on a dry gas basis, corrected to 15% O₂. The raw data shall be retained by Texas Gas for a minimum of 5 years and made available to the District upon request. Selected portions of the raw data used to calculate the emissions shall be included in the report in a format provided by the District.

- 10. Texas Gas shall keep a record identifying all deviations from the requirements of this NO_x RACT Plan and shall submit to the District a written report of all deviations that occurred during the preceding semi-annual period. Semi-annual periods shall run from January 1 to June 30 and July 1 to December 31. The report shall contain the following information:
 - A. The equipment designation,
 - B. The beginning and ending date of the reporting period,
 - C. Identification of all periods during which a deviation occurred, including the loss of data as required by Element 7,
 - D. A description, including the magnitude, of the deviation,
 - E. If known, the cause of the deviation, and
 - F. A description of all corrective actions taken to abate the deviation.

If no deviation occurred during the semi-annual period, the report shall contain a negative declaration. Each report shall be submitted within 60 days following the end of the semi-annual period.

- 11. In lieu of the requirements in this NO_x RACT Plan, Texas Gas may comply with alternative requirements regarding emission limitations, equipment operation, test methods, monitoring, record keeping, or reporting, provided the following conditions are met:
 - A. The alternative requirements are established and incorporated into an operating permit pursuant to a Title V Operating Permit issuance, renewal, or significant permit revision process as established in Regulation 2.16,
 - B. The alternative requirements are consistent with the streamlining procedures and guidelines set forth in section II.A. of *White Paper Number 2 for Improved Implementation of the Part 70 Operating Permits Program*, March 5, 1996, U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards. The overall effect of compliance with alternative requirements shall consider the effect on an intrinsic basis, such as grams per brake horsepower-hour,
 - C. The U.S. Environmental Protection Agency (EPA) has not objected to the issuance, renewal, or revision of the Title V Operating Permit, and either
 - D. If the public comment period preceded the EPA review period, then the District had transmitted any public comments concerning the alternative requirements to EPA with the proposed permit, or
 - E. If the EPA and public comment periods ran concurrently, then the District had transmitted any public comments concerning the alternative requirements to EPA no later than 5 working days after the end of the public comment period.

The District's determination of approval of any alternative requirements is not binding on EPA. Noncompliance with any alternative requirement established pursuant to the Title V Operating Permit process constitutes a violation of this NO_x RACT Plan.

History: Approved 11-8-99; effective 1-1-00; amended a1/12-20-00; effective 01-01-01; amended a2/06-17-09 effective 06-17-09; amended a2(R1)/10-20-10 effective 10-20-10.

THE COURIER-JOURNAL INC.

STATE OF KENTUCKY
County of Jefferson

Affidavit of Publication

I, *Marjorie Wise* of THE COURIER-JOURNAL, clerk of THE COURIER JOURNAL general circulation printed and published at Louisville, Kentucky, do solemnly swear that from my own personal knowledge, and reference to the files of said publication, the advertisement of:

Title: Notice of Public Comment Period & Hearing Lines: 86

Date: 9/17, 10/6/2010 Total Inches: 1x8.38

Marjorie Wise

Signature of person making proof

Subscribed and sworn to before me this 6th day of September, 2010.

Janice C. Richardson

Notary Public, State at Large, KY
My commission expires June 14, 2014

Notice of Public
Comment Period
and Hearing

The Louisville Metro Air Pollution Control Board opens a public comment period September 17, 2010, on an amended Board Order and site-specific plan for oxides of nitrogen (NOx), reasonably available control technology (RACT) for Texas Gas Transmission, LLC. If approved by the Board, this amended NOx RACT plan will be submitted to the U.S. Environmental Protection Agency for revision of the Kentucky State Implementation Plan.

Written statements will be accepted by the Board, Rachael Hamilton, Secretary-Treasurer, Louisville Metro Air Pollution Control District, 850 Barret Ave., Louisville, KY 40204-1745, until 5:00 p.m. October 18, 2010. Written statements will also be accepted electronically until the same deadline via the Internet at the email address alrorder@louisvilleky.gov. Oral statement will be accepted at the public hearing on October 20, 2010, at 10:00 a.m. in the Board Room, 850 Barret Ave., Louisville.

A paper copy of the proposed Board Order may be obtained from Monica Little, (502) 574-7246, between 8:00 a.m. and 5:00 p.m., Monday through Friday. An electronic copy of the proposed Board Order may be downloaded from the District's website at www.louisvilleky.gov/APCD/Docket.htm.

**Public Hearing Minutes
of the
Louisville Metro Air Pollution Control Board
October 20, 2010**

A public hearing of the Louisville Metro Air Pollution Control Board was called to order on October 20, 2010, at 10:00 a.m. in the Board Room of the Louisville Metro Air Pollution Control District, 850 Barret Avenue, Louisville, Kentucky, by the Chairman, Dr. Robert Powell.

General Statement, Rules and Purpose

The Chairman read the opening announcements, rules and purpose of the Public Hearing which was to review Amendment 2 (Revision 1) of the Agreed Board Order with Texas Gas Transmission, LLC.

1. Agreed Board Order with Texas Gas Transmission, LLC

Ms. Anderson said the reason for the Agreed Board Order with Texas Gas Transmission was due to an administrative error. She stated the initial Agreed Board Order with Texas Gas Transmission was presented to the Board for approval in June 2009, as an agreement to reduce oxides of nitrogen (NOx RACT) that would help to decrease the levels of ozone in the community, and no violations were involved. Also, Ms. Anderson said that NOx RACT orders are part of the State Implementation Plan (SIP) and the District has to abide by all of the EPA demonstration requirements. Ms. Anderson said District staff published notice of the Agreed Board order in the newspaper for the 30-day public comment period, but discovered the notice of the actual public hearing held on June 16, 2009 was not published in the newspaper which is required by law. Ms. Anderson said because the District and the Courier-Journal did not have a record of the second publication of the Agreed Board Order, the order was being presented again to the Board for approval.

Ms. Anderson said no public comments were received.

Statements

Ms. Anderson said Texas Gas Transmission requested that it be made clear that the error in publishing the second notice was not their responsibility.

Public Comments

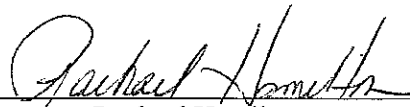
No comments were made.

Adjournment

The public hearing adjourned at 10:06 a.m.



Robert W. Powell, M.D.
Chairman


Rachael Hamilton
Secretary-Treasurer

**Minutes
Regular Meeting
of the
Louisville Metro Air Pollution Control Board
October 20, 2010**

The regular meeting of the Louisville Metro Air Pollution Control Board was called to order on October 20, 2010, at 10:07 a.m. in the Board Room of the Louisville Metro Air Pollution Control District, 850 Barret Avenue, Louisville, Kentucky, by the Chairman, Dr. Robert Powell. Other Board members present were, Dr. Nadir Al-Sham, Ms. Barbara Sexton Smith, Mr. Ronald Thomas, Mr. Bill Jacob, and Mr. Steve Thomas. A quorum was present.

The following Louisville Metro Air Pollution Control District staff members were present: Lauren Anderson, Rachael Hamilton, Paul Aud, Matt Stull, Terri Phelps, Cynthia Lee, Eva Addison, Matt King, Larry Garrison, Craig Butler, Karen Thorne, Shannon Hosey, Steven Gravatte, Rick Williams, Starlet Raj, Diana Prentice, and Monica Little. Also present were Assistant County Attorneys Stacy Fritze Dott and Thomas Patteson, and County Attorney staff member Tammy Brown.

The following guests were present: Paul Bowe, Marcus Paint Company; Tim Corrigan, Greater Louisville, Inc.; Brad Dillon, GD&M; Chris Dolan, URS; and Paige Mosser Theriac, Theriac Environmental Consultants, Inc.

Introductions

Ms. Anderson introduced Colette McConville, who is a new Environmental Coordinator at the District in the Environmental Programs department.

Approval of Minutes

The minutes of the Public Hearing, regular Board meeting, and Policy Committee meeting held on September 15, 2010, were approved as written.

New Business

A. Agreed Board Order with Texas Gas Transmission, LLC

Ms. Anderson said the District recommended adoption of Amendment 2 (Revision 1) of the Agreed Board Order with Texas Gas Transmission, LLC, as proposed.

Motion: Mr. Bill Jacob moved to adopt Amendment 2 (Revision 1) of the Agreed Board Order with Texas Gas Transmission, LLC, as proposed.

The motion passed unanimously.

Committee Report

A. Policy Committee

Mr. Ronald Thomas said the Board Policy Committee met on September 15, 2010, to review the draft amendments to District Regulations 1.02 – *Definitions*; 2.05 – *Prevention of Significant Deterioration*; 2.08 – *Fees*; and 2.16 – *Title V Operating Permits*. He reported the purpose of the draft amendments to the regulations was to implement the applicable federal Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring rules. Mr. R. Thomas said that after review and discussion of the amended

regulations, the Policy Committee approved the recommendation to begin the formal 30-day comment period.

Staff Reports

A. Director

Ms. Anderson reported the District received comments on the greenhouse gas regulations that were approved for the formal 30-day comment period by the Policy Committee on September 15, 2010. She said the District received comments from the Environmental Protection Agency (EPA) and the Kentucky Division for Air Quality. The comments varied and were not substantive because the District used the exact language that EPA proposed. Ms. Anderson said Greater Louisville, Inc. (GLI) Air Toxics Task Force also submitted comments but they were received after the deadline and were not included in the official review. However, she said GLI concerns were addressed since they were similar to EPA's comments. Ms. Anderson said the District expects ongoing changes to the greenhouse gas regulations because of updates and pending lawsuits. She said the District expects to present the full set of greenhouse gas regulations to the Board at the November Board meeting.

Ms. Anderson said District staff was involved in several outreach initiatives in September 2010 that included participation in the University of Louisville's Sustainability Day, and Mercy Academy's Environmental Day coordinated by Council Member Rick Blackwell. Upcoming events the District will be involved with include participation in the Sustainability Conference sponsored by GLI and One Southern Indiana; Ms. Anderson will participate on a panel at the Governor's Conference on the Environment; and the District's ongoing promotion of the "Idle Free Louisville" campaign to reduce unnecessary vehicle idling.

Mr. Stull presented information on new KAIRE television commercials and one of the commercials was shown during the meeting. He said the commercials were developed for the 25-45 year old woman who was a parent. He said the commercials are shown on Insight Cable channels and the District has received positive feedback about the messages.

Ms. Anderson presented information to the Board on the community's air quality titled "State of the Air." She said she presented the information at the September seminar series and will also present the information at the Governor's Conference on Air Quality. The "State of the Air" presentation included the six major criteria pollutants, the current air quality status, progress in improving air quality, EPA actions, current pollutant standards, other proposed standards, and the District's air quality initiatives. Ms. Anderson said the District will collaborate with stakeholders and keep the Board up-to-date on new strategies to improve air quality. Mr. Steve Thomas asked if the District measured lead levels in the community. Ms. Anderson said lead is currently not measured.

Ms. Anderson reported the package of amended STAR regulation have been under informal review since March 17, 2010. She said the comment response document and amendments to the regulations have been completed and currently undergoing a final review. She said normally a request is made to each Board standing committee separately to request approval of the formal public comment period. Ms. Anderson proposed for the Board's consideration to either present the request to the separate committees, or for the Board to call a meeting of the Committee of the Whole which is intended for all Board members to participate in the discussion as a group. She said a Committee of the Whole meeting would require a meeting and a vote from the Board.

Ms. Smith asked if the District had developed a timeline to begin discussing the amended STAR regulations. Ms. Anderson said the next Board meeting is scheduled on November 17, 2010, and she suggested having a special meeting before the Board meeting. Ms. Smith asked if it were possible for the

Board to have a Committee of the Whole meeting at the November Board meeting. Dr. Powell recommended that the Board meeting begin at 9:00 a.m. to allow enough time for discussion of the amended STAR regulations.

Ms. Anderson invited the Board to attend a luncheon on October 21, 2010. She said the \$5 luncheon fee will be used to purchase Christmas gifts for a family adopted by District staff. Also, she said the luncheon was environmentally friendly and attendees were asked to bring their own utensils.

B. Air Quality Data

Ms. Anderson said there were several exceedances of the eight-hour ozone standard in September 2010, and the community experienced one exceedance in October 2010. She said the community is currently not meeting the ozone standard and has some challenges ahead to achieve attainment. Also, Ms. Anderson said there were several complaints about bad odors in the community. The odors were attributed to problems with MSD's catch basins being dry due to a lack of rain, and a digester project MSD was working on in the Rubbertown area.

The air quality monitoring reports was submitted for filing. A copy of the report is attached to the original minutes.

C. Enforcement Status Report

The enforcement report was submitted for filing. A copy is attached to the original minutes.

D. Excess Emission Report

The September 2010 *Excess Emission Report* was submitted for filing. A copy is attached to the original minutes.

E. Permitting Backlog Report

The permitting backlog report was submitted for filing. A copy is attached to the original minutes.

F. Lawn Care for Cleaner Air Awards

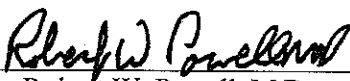
The October 2010 *Lawn Care for Cleaner Air Award* recipient report was submitted for filing. A copy is attached to the original minutes.

Next Meeting

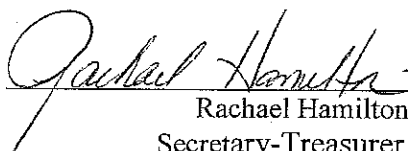
A public hearing and regular Board meeting is scheduled for Wednesday, November 17, 2010, at 9:00 a.m.

Adjournment

The meeting was adjourned at 10:47 a.m.



Robert W. Powell, M.D.
Vice-Chair



Rachael Hamilton
Secretary-Treasurer

JAMES E. BICKFORD
SECRETARY



PAUL E. PATTON
GOVERNOR

COMMONWEALTH OF KENTUCKY
NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET
OFFICE OF THE SECRETARY
FRANKFORT KENTUCKY 40601
TELEPHONE: (502) 564-3350

March 4, 2002

Mr. James I. Palmer, Jr.
Regional Administrator
U.S. EPA, Region 4
61 Forsyth Street
Atlanta, Georgia 30303-3104

Dear Mr. Palmer:

The Natural Resources and Environmental Protection Cabinet hereby submits for final approval a source specific revision to Kentucky's State Implementation Plan (SIP). This revision allows Lawson Mardon Packaging, USA, Corporation to have an alternative averaging period other than that specified by Kentucky air quality regulations 59:210 and 59:212. Kentucky's regulations require a 24-hour averaging period. This revision allows the source to use a 30-day averaging period. After a thorough internal review, the Kentucky Division for Air Quality agrees with the analysis submitted by the company that the alternate averaging period will not jeopardize maintenance of the National Ambient Air Quality Standards in the Shelby County area.

The Commonwealth of Kentucky requests that EPA approve the submission of the following terms and conditions of the final permit as an approved part of Kentucky's SIP:

Permit F-99-006 01 (07) Cleanup – commenced March 1986.

1. Section B. Page 2. Number 2. Emission Limitations: Compliance Demonstration, and
2. Section B. Page 3. Number 5. Specific Record Keeping Requirements, and

Permit F-99-006 02 (15) Mix Room – commenced March 1986.

03 (03) Parts Washer – commenced August 1991.

3. Section B. Page 4. Number 2. Emission Limitations: Compliance Demonstration, and
4. Section B. Page 5. Number 5. Specific Record Keeping Requirements, and



AN EQUAL OPPORTUNITY EMPLOYER M/F/D

James I. Palmer, Jr.
March 4, 2002
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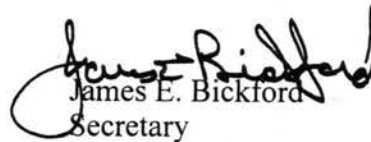
- Permit F-99-006 06 (01) Rotomec P1 rotogravure printer – commenced March 1986.
09 (24) Faustel P3 rotogravure printer – commenced June 1991.
10 (26) W&H P4 flexographic printer – commenced November 1992.
13 (27) Rotopak P5 rotogravure printer – commenced November 1994.
5. Section B. Page 7. Number 2. Emission Limitations for VOC: Compliance Demonstration Method for each facility listed in the group, and
 6. Section B. Page 8. Number 5. Specific Record Keeping Requirements, and
- Permit F-99-006 07 (02) Polytype Laminating Line L1 – commenced March 1986.
08 (16) ER-WE-PA Laminating Line L2 – commenced March 1988.
11 (25) Black Clawson Laminating Line L3 – commenced November 1992.
12 (28) Polynorm (Triplex) Laminating Line L4 – commenced November 1994.
7. Section B. Page 11. Number 2. Emission Limitations: Compliance Demonstration Method for each facility listed in the group, and
 8. Section B. Page 12. Number 5. Specific Record Keeping Requirements, and
- Permit F-99-016 01 (07) Cleanup – commenced March 1986 and modified on the date of this permit.
1. Section B. Page 2. Number 2. Emission Limitations: Compliance Demonstration, and
 2. Section B. Page 3. Number 5. Specific Record Keeping Requirements, and
- Permit F-99-016 02 (15) Mix Room - commenced March 1986 and modified on the date of this permit.
03 (03) Parts Washer – second parts washer, commenced on the date of this permit.
3. Section B. Page 4. Number 2. Emission Limitations: Compliance Demonstration, and
 4. Section B. Page 5. Number 5. Specific Record Keeping Requirements, and
- Permit F-99-016 15 Rotogravure printer P7 with laminator – commenced on the date of this permit.
17 Flexographic Printer P8 with laminator – commenced on the date of this permit.
18 Flexopress P9 – commenced on the date of this permit.
19 Flexographic Printer P10 – commenced on the date of this permit.

James I. Palmer, Jr.
March 4, 2002
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5. Section B. Page 7. Number 2. Emission Limitations: Compliance Demonstration Method for VOC for each facility listed in the group, and
 6. Section B. Page 8. Number 5. Specific Record Keeping Requirements, and
- Permit F-99-016
- 14 Polylaminator L5 – commenced on the date of this permit.
 - 15 Extrusion Laminator L7 – commenced on the date of this permit.
 - 20 Polylaminator L6 – commenced on the date of this permit.
7. Section B. Page 11. Number 2. Emission Limitations: Compliance Demonstration Method for VOC for each facility listed in the group, and
 8. Section B. Page 12. Number 5. Specific Record Keeping Requirements.

This submittal includes five sets of the revision package, including both permits, the company's request submittal, the public hearing notice, and proof of publication. No comments were received during the public review period. If you have questions regarding this SIP submittal, please contact Mr. John Lyons, Director, Division for Air Quality at (502) 573-3382.

Sincerely,


James E. Bickford
Secretary

JEB:JSL:smw
Enclosures

**Commonwealth of Kentucky
Natural Resources and Environmental Protection Cabinet
Department for Environmental Protection
Division for Air Quality
803 Schenkel Lane
Frankfort, Kentucky 40601
(502) 573-3382**

AIR QUALITY PERMIT

Permittee Name: Lawson Mardon Packaging, USA Inc.
Mailing Address: 6700 Midland Industrial Drive
Shelbyville, Ky. 40065

**is authorized to construct and operate a coated and laminated flexible packaging materials
addition to their existing plant**

Source Name: Lawson Mardon Packaging, USA Inc.

Source Location: same as above

Permit Type: Federally-Enforceable
Review Type: Synthetic Minor

Permit Number: F-99-016
Log Number: F828
**Application
Complete Date:** December 9, 1998

KYEIS ID #: 104-3680-0031
AFS Plant ID #: 21-211-00031

SIC Code: 2671

Region: North Central
County: Shelby

Issuance Date: August 24, 1999
Expiration Date: August 24, 2004



John E. Hornback, Director
Division for Air Quality

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SECTION A - PERMIT AUTHORIZATION

Pursuant to a duly submitted application which was determined to be complete on December 9, 1998, the Kentucky Division for Air Quality hereby authorizes the construction and operation of the equipment described herein in accordance with the terms and conditions of this permit. This draft permit has been issued under the provisions of Kentucky Revised Statutes Chapter 224 and regulations promulgated pursuant thereto.

The permittee shall not construct, reconstruct, alter, or modify any affected facilities without first having submitted a complete application and receiving a permit for the planned activity from the permitting authority, except as provided in this permit or in the Regulation 401 KAR 50:035, Permits.

Issuance of this permit does not relieve the permittee from the responsibility of obtaining any other permits, licenses, or approvals required by this Cabinet or any other federal, state, or local agency.

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS

01 (07) Cleanup - commenced March 1986 and modified on the date of this permit

Description: Cleanup operations for all printers and laminators under construction: P7, P8, P9, and P10; L5, L6, and L7. Overall control of 45% or more claimed due to capture or partial capture to oxidizers. Cleanup emissions to be minimized by training personnel in the importance of solvent usage minimization.

APPLICABLE REGULATIONS: 401 KAR 59:210, New fabric vinyl, and paper surface coating operations. 401 KAR 59:212, New graphic arts facilities using rotogravure and flexography. 401 KAR 63:060, List of hazardous air pollutants, petitions process, lesser quantity designations, and source categories. Limited to avoid the applicability of 401 KAR 51:017, Prevention of significant deterioration of air quality.

1. **Operating Limitations:**

Maximize solvent capture by work practices such as transfer of coatings by piping, nozzles for solvent dispensing, and restricted access to solvent supply. Operations are limited in conjunction with the limitations for the construction authorized by this permit, listed in Section D. Personnel shall be trained in the importance of solvent usage minimization.

2. **Emission Limitations:**

Monthly VOC emissions shall be included in the total source emissions C_T under Section D4. This is to demonstrate that synthetic minor status to avoid applicability of 401 KAR 51:017 for the source is ensured. The maximum increased allowable VOC usage on this point is 32.0 tons/yr.

As part of the affected facilities subject to 401 KAR 59:210 and 401 KAR 59:212, emissions shall not exceed the combined requirement for 85% overall control on the laminators, 60% overall control on the flexographic printer, and 65% overall control on the rotogravure printers. Compliance with the more stringent requirement of the allowables listed above shall suffice for meeting these requirements.

The following determination must be made to calculate the monthly cleanup emissions to be included in the totals to be reported in Section D.

Compliance Demonstration:

Daily record usage records of cleanup solvent (usage U) shall be kept for each machine. Solvent is assumed to be ethyl acetate. (Use of different solvent to be reported and appropriate density used.) Monthly record keeping is subject to approval of SIP revision request.

$$C \text{ (cleanup emissions) (tons/mo)} = \sum (i = P7, P8, P9, P10, L5, L6, L7) U_i \text{ (gal/month)} \times D \text{ (lbs VOC/gal)} \times (1 - \text{EFF} / 100) / 2000 \text{ (lbs/ton)} \text{ and } U_i = \sum (n = 1 \dots k) U_i \text{ (gal/day)}$$

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

Where D is the density of ethyl acetate or other solvent used, EFF is the cleanup control efficiency, and C is the monthly emissions. EFF equals 45% unless tested and shown to be different. The summation is over all the i coating lines.

3. Testing Requirements:

Cleanup solvent density shall be measured by 40 CFR 60 Method 24 or another EPA approved method. Testing shall be performed on each cleanup solvent whose certified product data sheet does not provide VOC density to three significant figures.

4. Specific Monitoring Requirements:

Ensure that the VOC capture monitoring for each laminator is in place when fugitives are present in the laminator enclosures. Ensure that the capture monitoring for each printer is in place when fugitives are present on the printers. (See also Specific Monitoring Requirements in Section B for Group Requirements for the printers and for Group Requirements for the laminators.) Monthly review the solvent usage practices with appropriate personnel.

5. Specific Record Keeping Requirements:

Record solvent usage U for cleanup as required for compliance demonstration method in 2 above.

6. Specific Reporting Requirements:

Report calculations for monthly emissions in the total emissions E_T under Section D.4 - Source Emission Limitations and Testing Requirements. Include a statement that personnel have had their monthly solvent usage practice reminder.

7. Specific Control Equipment Operating Conditions:

Specific control equipment operating conditions are under Section E - Control Equipment Conditions.

8. Alternate Operating Scenarios: None**9. Compliance Schedule: None****10. Compliance Certification Requirements:**

Certify initially and once per year that the testing, monitoring, record keeping, and reporting procedures for cleanup are sufficient to calculate emissions to three or more significant figures. See also Section F-7.

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

02 (15) **Mix Room - commenced March 1986 and modified on the date of this permit**

03 (03) **Parts Washer - second parts washer, commenced on the date of this permit**

Description: Supporting facilities for printing and laminating lines. Mix room emission factor tested to be 0.2% (worst case) of the VOC gallons throughput. Good work practices to be used include transfer of coatings by piping, nozzles for solvent dispensing, and training personnel in the importance of solvent usage minimization. Maximum throughput for mix room 2,205,500 gal/yr. Maximum usage of parts washer is one cycle per day at 4.2 lbs/cycle emission from condenser. This new parts washer is a Progressive Recovery, SWS400. Parts washer emissions to be controlled by in-situ solvent recovery using vent condenser. Mix room emissions to be controlled by covers on tanks and closed system for solvent/ink transfer.

APPLICABLE REGULATIONS: 401 KAR 59:210, New fabric vinyl, and paper surface coating operations. 401 KAR 59:212, New graphic arts facilities using rotogravure and flexography. 401 KAR 63:060, List of hazardous air pollutants, petitions process, lesser quantity designations, and source categories. Limited to avoid the applicability of 401 KAR 51:017, Prevention of significant deterioration of air quality.

1. **Operating Limitations:**

Continually utilize the good work practices listed above. The throughput of VOC for mixing for the new construction shall not exceed 251.8 gal/hr on a 12-month rolling average. (Note that the mixing throughput limitation for the existing plant on this same point is 231.6 gal/hr on an annual average, as specified in permit F-99-006.) The parts washer no. 2 usage shall not exceed one cycle per hour on an annual average.

2. **Emission Limitations:**

Monthly VOC emissions shall be reported for inclusion in the total source emissions E_T under Section D. This is to demonstrate that synthetic minor status to avoid applicability of 401 KAR 51:017 for the source is ensured. Maximum allowable VOC emissions increase for the mix room and the total for the new parts washer are 16.0 tons/yr (1.33 tons/month) and 18.4 tons/yr (1.53 tons/mo), respectively.

As part of the affected facilities subject to 401 KAR 59:210 and 401 KAR 59:212 emissions shall not exceed the combined requirement for 85% overall laminators, 60% overall control on the flexographic printer, and 65% on the rotogravure printers. Compliance with the more stringent requirements listed above shall suffice for meeting these requirements.

Compliance Demonstration:

Using emission factors for mixing and the usage U and density D of solvents and coatings for the month, calculate the emissions for the above facilities. Monthly record keeping is subject to approval of SIP revision request. For the mix room this calculation is:

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

$$M \text{ (mix room emissions)(tons/mo)} = \sum (i = P7, P8, L5, L6, \text{ etc.}) U_i \text{ (gal/month)} \times D_i \text{ (lbs VOC/gal)} \times EF / 2000 \text{ (lbs/ton)} \text{ and } U_i = \sum (n = 1 \dots k) U_n \text{ (gal/day)}$$

Where emission factor EF is taken to be 0.00200 by testing. U (gal/day) is the gallons VOC to the applicators divided by 0.998. The summation is over the coatings mixed during the month for the printers and laminators authorized by this permit. The division reserves the right to require a new determination of the emission factor.

For the parts washer this calculation is:

$$PW \text{ (VOC tons/mo)} = \infty \text{ (cycles/month)} \times 4.2 \text{ (lbs/cycle)} / 2000$$

Where ∞ is the cycles/month and the manufacturer guarantees maximum emissions of 4.2 lbs VOC/cycle. The division reserves the right to require a material balance.

3. Testing Requirements:

Testing shall be performed on each solvent or coating whose certified product data sheet does not provide VOC density or VOC content to three significant figures. Test VOC content by Method 311 or Method 24A.

4. Specific Monitoring Requirements:

Perform maintenance as necessary to maintain enclosure of fugitives. Monitor access to solvent supply.

5. Specific Record Keeping Requirements:

Keep records of gallons of VOC in coating mixed and calculate total usage at the end of the month. Keep records of parts washer cycles and calculate total usage at the end of the month.

6. Specific Reporting Requirements:

Report VOC emissions calculations for inclusion in the total emissions \mathcal{E}_T under Section D.4 - Source Emission Limitations and Testing Requirements.

7. Specific Control Equipment Operating Conditions:

Maintain enclosure of mixing equipment.

8. Alternate Operating Scenarios:

May vent the parts washer to the oxidizer to get credit for reduced potential to emit.

9. Compliance Schedule: None**10. Compliance Certification Requirements:**

Certify initially and once per year that the testing, monitoring, record keeping, and reporting procedures for Mixing and Parts Washer are sufficient to calculate emissions to three or more significant figures. See also Section F7.

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

GROUP Requirements

LIST of POINTS:

15 Rotogravure Printer P7 with laminator - commenced on the date of this permit (Insert manufacturer and model when purchased)

17 Flexographic Printer P8 with laminator- commenced on the date of this permit (Insert manufacturer and model when purchased)

18 Flexopress P9 - commenced on the date of this permit (Insert manufacturer and model when purchased)

19 Flexographic Printer P10 - commenced on the date of this permit (Insert manufacturer and model when purchased)

Description: The capture of each of these printers to its respective oxidizer claimed to be 100.00%. Each oxidizer claimed to have a minimum destruction efficiency of 98.00%. Printer P7 is vented to thermal oxidizer no. 7. Printer P8 and Printer P9 are vented to catalytic oxidizer no. 5. Printer P10 is vented to thermal oxidizer no. 6. The exact descriptions of these printers are not known at permit issuance. They must be inserted where indicated above when known.

APPLICABLE REGULATIONS: 401 KAR 59:212, New graphic arts facilities using rotogravure and flexography. 401 KAR 63:060, List of hazardous air pollutants, petitions process, lesser quantity designations, and source categories. 40 CFR 63, Subpart KK Printing and Publishing (Surface Coating). Limited to avoid the applicability of 401 KAR 51:017, Prevention of significant deterioration of air quality.

1. Operating Limitations:

Operation limited to use with respective control equipment listed under description above or approved equivalent. Operation limited to requirements and conditions described under Testing, Monitoring, Record Keeping, and Reporting below, under Section D, Source Emission Limitations and Testing Requirements, under Section E, Control Equipment Conditions, and under Section F.2, Monitoring, Record Keeping and Reporting Requirements. Ink usage and VOC content shall be limited in conjunction with VOC usage for cleanup operations, mixing, parts washing, and laminating, and in conjunction with the requirements of Section D, so as to ensure synthetic minor status.

2. Emission Limitations for VOC:

Monthly VOC usage and VOC emissions shall be reported for inclusion in the total source usage \mathcal{U}_p and total source emissions \mathcal{E}_p under Section D. This is to demonstrate that synthetic minor status for the source is ensured. Limited according to the requirements in Section D to insure synthetic minor status, thereby avoiding applicability of 401 KAR 51:017.

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

As part of the affected facilities subject to 401 KAR 59:212, emissions shall not exceed the combined requirement for 60% overall control on the flexographic printer, and 65% overall control on the rotogravure printers. Compliance with the more stringent requirement of the allowables referred to above shall suffice for meeting these requirements.

Compliance Demonstration Method for VOC for each facility listed in the group:
Keep daily records of VOC usage. Monthly record keeping is subject to approval of SIP revision request.

$$P_i = \sum (i = 1 \dots j) U_i (\text{gal/month}) \times D_i (\text{lbs VOC/gal}) / 2000$$

Where the summation is over the j coatings used on each printer i during the month. Here U is the volume (gal/month) used and D is the corresponding VOC content (lbs/gal) for each respective coating.

$$\mathcal{U}_p = \sum (i = 1 \dots k) P_7, P_8, P_9, P_{10} = \sum P_i$$

This is the VOC usage for all the printers in a month (tons/month). The summation is over all the k printers in this new construction. Here $P_i = P_7, P_8, P_9, P_{10}$ are the monthly VOC usages. The monthly VOC usage total for the printers \mathcal{U}_p is included in the monthly source wide usage total in Section D. $P_i = \sum (i = 1 \dots j) P$ where P is the daily usage and j is the number of days in the month.

$\mathcal{E}_p = \sum (i = 1, 3 \dots k) P_i (\text{tons/month}) \times (1 - \text{EFF}_n \times 0.01)$ = the VOC emissions for all the printers in a month. The summation is over the k printers and their associated efficiencies given below. The monthly emissions for the printers \mathcal{E}_p is included in the monthly source wide emissions total in Section D4. EFF_n is as follows:

$$\text{EFF}_n = (\% \text{ capture efficiency}) (\% \text{ destruction efficiency}) (0.01)$$

$$\text{EFF}_{P7} = (100.00\%) (98.00\%) (0.01) = 98.00\%$$

$$\text{EFF}_{P8} = (100.00\%) (98.00\%) (0.01) = 98.00\%$$

$$\text{EFF}_{P9} = (100.00\%) (98.00\%) (0.01) = 98.00\%$$

$$\text{EFF}_{P10} = (100.00\%) (98.00\%) (0.01) = 98.00\%$$

These efficiencies must be validated by the required tests for capture and destruction. After the required tests have been approved and required monitoring is performed, the equation for \mathcal{E}_p simplifies to:

$$\mathcal{E}_p = \mathcal{U}_p \times 0.02$$

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

Emission Limitations for HAPs:

HAPs emissions on the above equipment shall not exceed the optional requirements given in 40 CFR 63, Subpart KK on these respective printers. Options are as given in Section H:

Alternate Operating Scenarios. Alternately, demonstrate 98% control of the HAPs used on the printers.

3. Testing Requirements:

See Section G for testing of controls. Testing shall be performed on each coating whose certified product data sheet does not provide VOC and HAP content to three significant figures. Testing shall be done by 40 CFR 60 Method 24 or 40 CFR 63 Method 311.

4. Specific Monitoring Requirements:

To meet the requirements of 40 CFR 63, Subpart KK, perform the following:

1. Continuously monitor an operating parameter established in accordance with 40 CFR 63.828(a)(5) to assure capture efficiency. This parameter is discussed for the respective oxidizers under Sections D, E, and F.2.
2. Continuously monitor an operating parameter established in accordance with 40 CFR 63.828(a)(5) to assure destruction efficiency. This parameter is discussed for the respective oxidizers under Sections D, E, and F.2.

To meet the requirement to avoid the applicability of 401 KAR 51:017, Prevention of significant deterioration or air quality, according to 401 KAR 50:035 Section 7(1)(c) for monitoring, perform the following:

3. Continuously monitor ΔT across the catalyst to ensure catalytic activity at printer(s) controlled by the Catalytic Oxidizer No. 5 are in solver according to Section F.2. This parameter is related to the catalyst testing Section D.6 and 7.

5. Specific Record Keeping Requirements:

Keep daily records of amount and type of coating and solvent used on these lines. Record HAP usage. Monthly record keeping subject to SIP revision approval. Record results of VOC and HAP content tests as necessary for certification. Record VOC and HAP compliance determination calculations. Record capture parameter as required in Section F daily whenever fugitives are present to ensure it meets the criterion required by Method 204. Record any deficiencies and remedial action taken. Record any destruction temperature and inlet temperature monitoring deficiencies and remedial action taken. Record ΔT daily across the catalyst as per Section F.2., Control Equipment Conditions. Daily record destruction temperatures and catalyst inlet temperature. Refer to 40 CFR 63.829 for HAP record keeping requirements.

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**6. Specific Reporting Requirements:**

Submit a reporting plan within 30 days of the issuance of this permit to the Frankfort Regional Office. This shall include any plans for VOC testing. It shall include method of recording the following:

1. coatings used,
2. capture parameters,
3. all monitoring temperatures and ΔT ,
4. monthly usage calculations,
5. emissions calculations, and
6. any problems and corrective actions.

Demonstrate three significant figures in all calculations.

In subsequent months, submit a monthly report showing:

- (1) calculations for monthly VOC usage \mathcal{E}_p and emissions \mathcal{E}_p from these lines and include them in the total under Section D2 and D4, Source Emission Limitations and Testing Requirements,
- (2) HAP compliance determination calculations to demonstrate compliance with Subpart KK or better,
- (3) summary data for capture, any deficiencies in the capture parameter, and remedial action taken, and
- (4) summary data for monitoring temperatures and ΔT , any deficiencies in temperatures and ΔT , and remedial action taken.

Refer to 40 CFR 63.830 for HAP reporting requirements.

7. Specific Control Equipment Operating Conditions:

Refer to Section E for control equipment operating conditions.

8. Alternate Operating Scenarios:

These lines and the laminators may have flexibility of VOC usage within the overall VOC usage and emissions caps listed under Section D so long as they meet all applicable requirements. HAPs compliance shall be determined by any one of the options in Section H.

9. Compliance Schedule: None.**10. Compliance Certification Requirements:**

Compliance certification for the printers shall be carried out initially and annually in accordance with Section F 7. This certification shall contain a demonstration that the emissions calculations have been and will be carried out to three or more significant figures.

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

GROUP Requirements

LIST of POINTS :

14 Polylaminator L5 - commenced on the date of this permit (Insert manufacturer and model when purchased)

16 Extrusion Laminator L7 - commenced on the date of this permit (Insert manufacturer and model when purchased)

20 Polylaminator L6 - commenced on the date of this permit (Insert manufacturer and model when purchased)

Description: The capture of each of these laminators to its respective oxidizer claimed to be 100.00%. Each oxidizer claimed to have a minimum destruction efficiency of 98.00%. Laminator L5 is vented to thermal oxidizer no. 6. Laminator L7 is vented to thermal oxidizer no. 7. Laminator L6 is vented to catalytic oxidizer no. 5. The exact descriptions of these laminators are not known at permit issuance. They must be inserted where indicated above when known.

APPLICABLE REGULATIONS: 401 KAR 59:210, New fabric vinyl, and paper surface coating operations. 401 KAR 63:060, List of hazardous air pollutants, petitions process, lesser quantity designations, and source categories. 40 CFR 63, Subpart B, case-by-case MACT under the Paper and Other Webs (Surface Coating) category (final to be promulgated in the year 2000). Limited to avoid the applicability of 401 KAR 51:017, Prevention of significant deterioration of air quality.

1. Operating Limitations:

Operation limited to use with the control equipment listed under description above and with conditions described under Testing, Monitoring, Record Keeping, and Reporting below, under Section D, Source Emission Limitations and Testing Requirements, under Section E, Control Equipment Conditions, and under Section F.2, Monitoring, Record Keeping and Reporting Requirements. Ink usage and VOC content shall be limited in conjunction with VOC usage for cleanup operations, mixing, parts washing, and laminating, and in conjunction with the requirements of Section D, so as to ensure synthetic minor status.

2. Emission Limitations:

Monthly VOC usage and VOC emissions shall be included in the total source usage \mathcal{E}_L and total source emissions \mathcal{E}_L under Section D2 and D4. This is to demonstrate that synthetic minor status for the source is ensured. Limited according to the requirements in Section D to insure synthetic minor status, thereby avoiding applicability of 401 KAR 51:017.

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

As part of the affected facilities subject to 401 KAR 59:210, emissions shall not meet the combined requirement for 85% overall control on the laminators. Compliance with the more stringent requirement of the allowables referred to above shall be meeting these requirements.

Compliance Demonstration Method for VOC for each facility listed in the group:
Keep daily records of VOC usage. Monthly record keeping is subject to approval of SIP revision request.

$$\mathcal{L}_i = \sum (i = 1 \dots j) U_i (\text{gal/month}) \times D_i (\text{lbs VOC/gal}) / 2000$$

Where the summation is over the j coatings used on that laminator i during the month. Here U is the volume (gal/month) used and D is the corresponding VOC content (lbs/gal) for each respective coating.

$$\mathcal{L}_L = \sum (i = 1 \dots k) \mathcal{L}_5, \mathcal{L}_6, \mathcal{L}_7 = \sum \mathcal{L}_i$$

This is the VOC usage for all the laminators in a month (tons/month). The summation is over all the k laminators in this new construction. Here $\mathcal{L}_i = \mathcal{L}_5, \mathcal{L}_6, \mathcal{L}_7$ are the monthly VOC usages. The monthly VOC usage for total for the laminators \mathcal{L}_L is included in the monthly source wide usage total in Section D. $\mathcal{L}_i = \sum (i = 1 \dots j) L$ where L is the daily usage and j is the number of days in the month.

$\mathcal{E}_L = \sum (i = 1, 2, \dots k) \mathcal{L}_i (\text{tons/month}) \times (1 - \text{EFF}_L \times 0.01)$ = the VOC emissions for all the laminators in a month. The summation is over the k laminators and their associated efficiencies given below. The monthly emissions for the laminators \mathcal{E}_L is included in the monthly source wide emissions total in Section D4. EFF_L is as follows:

$$\text{EFF}_L = (\% \text{ capture efficiency, } \% \text{ destruction efficiency, }) (0.01)$$

$$\text{EFF}_7 = (100\%)(98\%)(.01) = 98.00\%$$

$$\text{EFF}_8 = (100\%)(98\%)(.01) = 98.00\%$$

$$\text{EFF}_9 = (100\%)(98\%)(.01) = 98.00\%$$

$$\text{EFF}_{10} = (100\%)(98\%)(.01) = 98.00\%$$

These efficiency values must be updated when new tests are approved.

After the required tests have been approved and required monitoring is performed, the equation for \mathcal{E}_L simplifies to:

$$\mathcal{E}_L = \mathcal{L}_L \times 0.02$$

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**Emission Limitations for HAPs:**

HAPs emissions on the above equipment shall not exceed 2% of the HAPs usage on the above laminators.

Compliance Demonstration Method for each facility listed in the group:

Continuous monitoring of capture and destruction efficiency as required in Section F for temperature and capture monitoring. This is to ensure that 98.00% overall control is continuously maintained to meet the requirements of the case-by-case MACT for Paper and Other Webs (Surface Coating).

3. **Testing Requirements:** See Section F for testing of controls. Testing shall be performed on each coating whose certified product data sheet does not provide VOC and HAP content to three significant figures. Test VOC content of all coatings used by 40 CFR 60 Method 24 or 40 CFR 63 Method 311.
4. **Specific Monitoring Requirements:** To meet the requirements of the Case-by-case MACT under the Paper and Other Webs (Surface Coating) and to ensure synthetic minor status with respect to 401 KAR 51:017, perform the monitoring in Section F.
5. **Specific Record keeping Requirements:** Keep daily records of amount and type of coating and solvent used on these lines. Monthly record keeping subject to approval of SIP revision request. Record results of VOC and HAP content tests as necessary for certification. Record capture parameter as required in Section F daily whenever fugitives are present to ensure it meets the criterion required by the case-by-case MACT and to ensure synthetic minor status. Record any deficiencies and remedial action taken. Record any destruction temperature and inlet temperature monitoring deficiencies and remedial action taken. Record ΔT across the catalyst daily as per Section F.2., Control Equipment Conditions. Daily record destruction temperatures and catalyst inlet temperature. Refer to 40 CFR 63.829 for HAP record keeping requirements.
6. **Specific Reporting Requirements:**
Submit a reporting plan within 30 days of the issuance of this permit to the Frankfort Regional Office. This shall include any plans for VOC testing. It shall include method of recording the following:
 1. coatings used,
 2. capture parameters: flow rates, pressure drops, and work practices,
 3. all monitoring temperatures and ΔT ,
 4. monthly usage calculations,
 5. emissions calculations, and
 6. any problems and corrective actions.Demonstrate three significant figures in all calculations.

SECTION B - EMISSION POINTS, AFFECTED FACILITIES, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

In subsequent months, submit a monthly report showing:

- (1) calculations for monthly VOC usage \mathcal{E}_L and emissions \mathcal{E}_L from these lines and include them in the total under Section D2 and D4, Source Emission Limitations and Testing Requirements,
- (2) HAP compliance determination calculations to demonstrate 98% control of HAP usage on the laminators,
- (3) summary data for capture, any deficiencies in the capture parameter, and remedial action taken,
- (4) summary data for monitoring temperatures and ΔT , any deficiencies in temperatures and ΔT , and remedial action taken.

Refer to 40 CFR 63.830 for HAP reporting requirements.

7. **Specific Control Equipment Operating Conditions:**

Refer to Section E for control equipment operating conditions.

8. **Alternate Operating Scenarios:**

These lines and the printers may have flexibility of VOC usage and emissions caps listed under Section D so long as they meet all applicable requirements.

9. **Compliance Schedule:** None.

10. **Compliance Certification Requirements:**

Compliance certification for the laminators shall be carried out initially and annually in accordance with Section F 7. This certification shall contain a demonstration that the emissions calculations have been and will be carried out to three or more significant figures.

SECTION C - INSIGNIFICANT ACTIVITIES

The following listed activities have been determined to be insignificant activities for this source pursuant to Regulation 401 KAR 50:035, Section 5(4). While these activities are designated as insignificant the permittee must comply with the applicable regulation and some minimal level of periodic monitoring may be necessary.

| <u>Description</u> | <u>Regulation</u> |
|---|---------------------------------------|
| 1. Solvent Storage (E.P. 05)
(increase on existing point) | Exempt (PTE 1.29 tons/yr VOC) |
| 2. Extruders/Feed Hoppers (E.P. 05)
(increase on existing point) | 401 KAR 59:010 (PTE 1.30 tons/yr VOC) |
| 3. Natural gas burning (E.P. 04)
(increase on existing point) | 401 KAR 59:010 (PTE 1.54 tons/yr VOC) |
| 4. Corona Treaters | 401 KAR 53:010 |
| 5. Mixers and Blenders | 401 KAR 59:010 |

VOC emissions from these insignificant sources of 4.13 tons/yr are considered part of the potential to emit which may not trigger the source wide VOC cap unless 401 KAR 51:017 is invoked. Solvent storage emissions to be limited by use of conservation vents.

SECTION D - SOURCE EMISSION LIMITATIONS AND TESTING REQUIREMENTS

1. The potential to emit calculated with information given in the application indicates that the requested usage yields emissions within the allowable with respect to synthetic minor status under 401 KAR 51:017. Therefore, the usage requested is allowed. The total VOC usage on the printers and laminators, as measured by methods referenced in 401 KAR 50:015, Section 1, shall not exceed the requested usage of 7990 tons/year.

2. VOC usage on all printers and laminators shall be determined as follows:

$$U_T = U_P + U_L \text{ laminator and printer usage (tons / month)}$$

Since this is a calculation of usage, the efficiency is not part of the calculation. These totals shall be reported within a calendar month of the end of the month for which the data are collected.

3. VOC emissions, as measured by methods referenced in 401 KAR 50:015, Section 1, shall not exceed 230 tons/yr as calculated according to 11 below. This is to insure synthetic minor status taking into account the calculation errors. Meeting this cap shall be determined by summing the reported monthly totals from all points contained in Sections B and C. Perform the tests listed in Section G and as described in D.6-D.9 below in order to show compliance with this emissions cap.

4. The grand total emissions for the month shall be calculated as follows:

$E_T = C + M + PW + NG + i + E_P + E_L = SA + E_P + E_L$ where the respective designations stand for VOC emissions due to cleanup, mixing, parts washer, natural gas combustion, insignificant activities, printer operation, and laminator operation. This total shall be reported within a calendar month of the end of the month for which the data are collected. This is necessary to ensure synthetic minor status and is required by 401 KAR 50:035, Section 7. The PTE (0.344 VOC tons/month) may be used for the total of natural gas burning and insignificant activities. Calculations must use current capture and destruction efficiencies. Monitoring data must be acceptable to justify efficiencies. Testing required below is necessary to ensure that the efficiencies used in calculating the emissions are as good, at a minimum, as those assumed in calculating the allowable emissions cap of 230 tons/yr.

5. If division approved stack tests performed after this permit is issued give higher efficiencies than those listed in Sections B and E, the newer efficiencies may not replace them in emission calculations unless the manufacturer will insure more stringent replacement and operation criteria which is approved by the division. Destruction efficiencies less than 98.00% are not acceptable. Capture less than 100.00% on the laminators and printers is not acceptable. Deficient results for efficiencies will incur necessity of remedial action and retesting.

SECTION D - SOURCE EMISSION LIMITATIONS AND TESTING REQUIREMENTS

The testing requirements listed in Section D.6-D.9 are to validate the efficiencies assumed in calculations to insure synthetic minor status. They are required to avoid applicability of 401 KAR 51:017, Prevention of significant deterioration of air quality.

6. Submit a protocol for testing the Catalytic Oxidizer No. 5 which controls the Flexographic Printer P8 on EP 17, the Flexopress P9 on EP 18, and the Polylaminator L6 on EP 20 within the schedule set in Section G(d), and report results within 45 days. Record inlet temperature to the catalyst chambers over the three hours of the test. A minimum of 98.00% destruction efficiency must be achieved. Establish the minimum inlet temperature for continuous monitoring. Establish ΔT as continuous monitoring parameter for the catalyst in the Catalytic Oxidizer No. 5. This parameter must be shown to be positive during all periods of solvent operation. Remedial action must be taken if it is not positive. Utilize tested oxidizer destruction efficiency for the calculation of VOC emissions subject to the following procedure for validation of catalyst activity and destruction efficiency (see note under testing frequency under 7 below).

Submit sample of fresh catalyst for analysis from this oxidizer to the manufacturer or other independent laboratory for the analysis below. Initially, submit sample of aged catalyst within six months and one year following issuance of permit. Sampling shall be at the scheduled semi-annual maintenance and on the anniversary of the permit issuance. Samples taken shall be representative of the catalyst throughout the two catalyst chambers. The division reserves the right to split samples for analysis by another independent laboratory.

7. Report analysis of fresh catalyst from the Catalytic Oxidizer No. 5 to the Frankfort Regional Office at the time the stack test results are required to be reported. This should include the analyses of which the manufacturer or other independent laboratory is capable, including B.E.T. surface area, identification and concentration of contaminants, destruction tests over a range of inlet temperatures, etc. Report comparisons of aged catalyst for subsequent semi-annual or annual tests vs. fresh catalyst to the Frankfort Regional Office. Give numerical results showing any detectable changes that may have occurred between tests. Failure of the oxidizer to achieve the minimum 98.00% efficiency shall incur the necessity of taking option 1 below and recalculating the emissions for the period since the last test using the lower efficiency and comparing emissions with the cap for compliance determination. Catalyst function analysis during the first year after permit issuance shall be on a semi-annual basis. If positive proof of performance of a minimum of 98.00% efficiency cannot be made, take one or more of options 2 through 4.

SECTION D - SOURCE EMISSION LIMITATIONS AND TESTING REQUIREMENTS (CONTINUED)

1. Substitute the lower efficiency for the oxidizer determined by manufacturer or independent laboratory for the purpose of calculating emissions for the period since the last test.
2. Operate at sufficiently high inlet temperature to restore efficiency to its original value.
3. Replace the catalyst.
4. Retest the oxidizer by Method 25A or other EPA approved method to demonstrate a minimum of 98.00% efficiency.

Efficiency of the oxidizer in the field is continuously guaranteed to be a minimum of 98.00%. If the difference in efficiency of catalyst between one analysis and the next is <0.4%, the next analysis shall be performed within one year so long as the oxidizer efficiency is predicted to remain >98.00% and an efficiency of 98.00% is being used in calculations. If using >98.00% in emissions calculations, testing must be repeated every 6 months. If using 98.00% efficiency in calculations and if the change in the efficiency of the catalyst from one test to the next is >0.4%, the next catalyst analysis shall be done within 6 months. See Section F.2.a for catalyst monitoring.

8. Submit protocols for testing the destruction efficiency of Thermal Oxidizers No. 6 and 7. Test according to the schedule in Section G(d). The minimum efficiency to be achieved is 98.00%. Monitor the combustion temperature continuously during the test to establish the minimum temperature to be required for monitoring.
9. Submit protocol for testing total capture for printers P7, P8, P9, and P10 and for laminators L5, L6, and L7 to each respective oxidizer using EPA Method 204 for permanent total enclosure. Test according to the schedule in Section G(d). Establish monitoring of the pressure drop across natural draft openings to be a minimum of -0.0070 in. water column corresponding to a face velocity of 200 ft/min. (Note that the pressure drop contains two significant figures.) See Monitoring on pages 8 and 12. See Section F.2.b for permanent total enclosure capture monitoring.
10. VOC emissions, as measured by methods referenced in 401 KAR 50:015, Section 1, shall not exceed the respective limitations specified in Section D.3 above.
11. Compliance with annual emissions and processing limitations imposed pursuant to 401 KAR 50:035, Section 7(1)(a), and contained in this permit, shall be based on emissions and processing rates for any twelve (12) consecutive months.

SECTION E - CONTROL EQUIPMENT CONDITIONS

1. Pursuant to 401 KAR 50:012, Section 1(1) and 401 401 KAR 50:055, Section 2(5), at all times, including periods of startup, shutdown and malfunction, owners and operators shall, to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the cabinet which may include, but is not limited to, test results, monitoring results, review of operating and maintenance procedures, and inspection of the source.
2. The destruction efficiency of the **Catalytic Oxidizer No. 5** shall be a minimum of 98.00% as determined by a division-approved stack test and by monitoring to ensure continuous compliance.
 - a. The inlet temperature to the catalyst shall be a minimum of 600°F, or other temperature corresponding to the most recent stack test, over a 3-hour average.
 - b. The outlet temperature to the catalyst shall not exceed 1100°F as ensured by automatic shutdown.
 - c. The VOC throughput average to the oxidizer over any three-hour period shall not exceed that used in the most recent division-approved stack test by more than 10%. This shall be determined by back calculating the three-hour throughput for the highest usage rate product run during the month in three hours from the total run hours for the product and the total usage.
 - d. Continued operation is contingent upon sufficient capture as determined under Sections B4 on pages 8 and 12 for P8, P9, and L6 and as demonstrated by monitoring, Section F(b).
 - e. The combustion temperature of thermal oxidizers 6 and 7 shall be a minimum of that corresponding to the most recent stack test over a three-hour average.
 - f. Refer to Section F.2 for details of monitoring ΔT .
 - g. The volumetric flow rate shall not exceed the design capacity of 60,000 scfm.
3. The destruction efficiency of the **Thermal Oxidizers No. 6 and No. 7** shall be a minimum of 98.00%.
 - a. The combustion temperature shall continuously be a minimum of 1400°F, or other temperature corresponding to the most recent stack test, on a three hour average.
 - b. The VOC throughput average to the oxidizer over any three-hour period shall not exceed that used in the most recent division-approved stack test by more than 10%. This shall be determined by back calculating the three-hour throughput for the highest usage rate product run during the month in three hours from the total run hours for the product and the total usage.
 - c. Continued operation is contingent upon sufficient capture as determined under Sections B4 on pages 8 and 12 for printers P7 and P10 and for laminators L5 and L7 and as demonstrated by monitoring, Section F(b).
 - d. Refer to Section F.2.b for details of monitoring combustion temperatures.
 - e. The volumetric flow rate shall not exceed the design capacity of the respective oxidizers of 50,000 scfm and 45,000 scfm.

SECTION F - MONITORING, RECORD KEEPING, AND REPORTING REQUIREMENTS

1. When continuing compliance is demonstrated by periodic testing or instrumental monitoring, the permittee shall compile records of required monitoring information that include:
 - a. Date, place as defined in this permit, and time of sampling or measurements.
 - b. Analyses performance dates;
 - c. Company or entity that performed analyses;
 - d. Analytical techniques or methods used;
 - e. Analyses results; and
 - f. Operating conditions during time of sampling or measurement;

2. The following monitoring shall be performed and reported monthly to the Frankfort Regional Office. All daily parameter monitoring data is to be kept on file with reporting in summary form including any excursions or failures and remedial action.
 - a. Continuously monitor the ΔT across the catalyst during solvent operation to ensure that it is positive. Record ΔT three times during each production run (beginning, middle, and end), plus daily for runs lasting longer than a day. Account for any periods during solvent operation that ΔT cannot be shown to be positive. Take remedial action for such periods. Record remedial action. Continued solvent operation is contingent upon a positive ΔT . Differences in ΔT between the two catalyst chambers that are greater than measurement error shall be subject to investigation and correction within three hours. The inlet temperature to the catalytic oxidizer shall be monitored and maintained at a minimum as prescribed in Section E.2.a. The outlet temperature shall be maintained at a maximum as prescribed in Section E.2.b.
 - b. Continuously monitor the combustion temperature of Thermal Oxidizers No. 6 and 7 to ensure that it is as high, at a minimum, as the combustion temperature during an approved stack test over a three-hour average.
 - c. The pressure drop across all natural draft openings to all permanent total enclosures shall be a minimum of -0.0070 in. water column corresponding to a face velocity of 200 ft/min. Daily record pressure drop. (Note that monitoring must be done to two significant figures.)
 - d. Monitor the combustion temperature of the thermal oxidizers (Thermo Wisconsin and AWS or their replacements) to ensure that it is a minimum of that prescribed in Section E.3.a.

Records of all required monitoring data and support information, including calibrations, maintenance records, and original strip chart recordings, and copies of all reports required by the Division for Air Quality, shall be retained by the permittee for a period of five years and shall be made available for inspection upon request by any duly authorized representative of the Division for Air Quality. [401 KAR 50:035, Permits, Section 7(1)(d)2 and 401 KAR 50:035, Permits, Section 7(2)(c)]

SECTION F - MONITORING, RECORD KEEPING, AND REPORTING REQUIREMENTS (CONTINUED)

3. In accordance with the requirements of Regulation 401 KAR 50:035, Permits, Section 7(2)(c) the permittee shall allow the Cabinet or authorized representatives to perform the following:
 - a. Enter upon the premises where a source is located or emissions-related activity is conducted, or where records are kept;
 - b. Have access to and copy, at reasonable times, any records required by the permit:
 - i. During normal office hours, and
 - ii. During periods of emergency when prompt access to records is essential to proper assessment by the Cabinet;
 - c. Inspect, at reasonable times, any facilities, equipment (including monitoring and pollution control equipment), practices, or operations required by the permit. Reasonable times shall include, but are not limited to the following:
 - i. During all hours of operation at the source,
 - ii. For all sources operated intermittently, during all hours of operation at the source and the hours between 8:00 a.m. and 4:30 p.m., Monday through Friday, excluding holidays, and
 - iii. During an emergency; and
 - d. Sample or monitor, at reasonable times, substances or parameters to assure compliance with the permit or any applicable requirements. Reasonable times shall include, but are not limited to the following:
 - i. During all hours of operation at the source,
 - ii. For all sources operated intermittently, during all hours of operation at the source and the hours between 8:00 a.m. and 4:30 p.m., Monday through Friday, excluding holidays, and
 - iii. During an emergency.
4. No person shall obstruct, hamper, or interfere with any Cabinet employee or authorized representative while in the process of carrying out official duties. Refusal of entry or access may constitute grounds for permit revocation and assessment of civil penalties.
5. Summary reports of any monitoring required by this permit shall be submitted to the division's Frankfort Regional Office every month during the life of this permit. The reports are due within 30 days after the end of each month reporting period which commences on the initial issuance date of this permit. The permittee may shift to quarterly reporting on a calendar year basis upon approval of the regional office. If calendar year reporting is approved, the quarterly reports are due January 30, April 30, July 30, and October 30 of each year. All reports shall be certified by a responsible official pursuant to Section 6(1) of Regulation 401 KAR 50:035, Permits. All deviations from permit requirements shall be clearly identified in the reports.

SECTION F - MONITORING, RECORD KEEPING, AND REPORTING REQUIREMENTS (CONTINUED)

6. a. In accordance with the provisions of Regulation 401 KAR 50:055, Section 1 the owner or operator shall notify the Division for Air Quality's Frankfort Regional Office concerning startups, shutdowns, or malfunctions as follows:
 1. When emissions during any planned shutdowns and ensuing startups will exceed the standards notification shall be made no later than three (3) days before the planned shutdown, or immediately following the decision to shut down, if the shutdown is due to events which could not have been foreseen three (3) days before the shutdown.
 2. When emissions due to malfunctions, unplanned shutdowns and ensuing startups are or may be in excess of the standards, notification shall be made as promptly as possible by telephone (or other electronic media) and written notice shall be made upon request.
- b. In accordance with the provisions of Regulation 401 KAR 50:035, Section 7(1)(e)2, the owner or operator shall promptly report deviations from permit requirements including those attributed to upset conditions (other than emission exceedances covered by general condition 6 a. above) to the Division for Air Quality's Frankfort Regional Office. Prompt reporting shall be defined as follows: If the control device fails to operate and the interlock fails to shut down the associated printers and laminators, report this occurrence within three days to the Frankfort Regional Office according to the criteria in 6 a 2 above. For other deviations, such as capture and temperature deviations, include all occurrences and remedial actions in the monthly report to the Frankfort Regional Office.

SECTION F - MONITORING, RECORD KEEPING, AND REPORTING REQUIREMENTS (CONTINUED)

7. Pursuant to Regulation 401 KAR 50:035, Permits, Section 7(2)(b), the permittee shall annually complete and return a Compliance Certification Form (DEP 7007CC) to the Division's Frankfort Regional Office in accordance with the following requirements:
- a. Identification of each term or condition of the permit that is the basis of the certification;
 - b. The compliance status regarding each term or condition of the permit;
 - c. Whether compliance was continuous or intermittent; and
 - d. The method used for determining the compliance status for the source, currently and over the reporting period, pursuant to 401 KAR 50:035, Section 7(1)(c),(d), and (e).
 - e. The certification shall be postmarked by the thirtieth (30) day following the applicable permit issuance anniversary date or by January 30th of each year if calendar year reporting is approved by the regional office.
 - f. Submit calculations demonstrating that the usage limitations and emissions limitations in Sections D2 and D4 have been met for the year. Include any remedial measures or efficiency improvements performed to ensure that these limits were met.
 - g. The certification shall be postmarked by the thirtieth (30) day following the applicable permit issuance anniversary date. **Annual compliance certifications should be mailed to the following addresses:**

**Division for Air Quality
Frankfort Regional Office
643 Teton Trail, Suite B
Frankfort, KY**

**U.S. EPA Region IV
Air Enforcement Branch
Atlanta Federal Center
61 Forsyth St.
Atlanta, GA 30303-8960**

**Division for Air Quality
Central Files
803 Schenkel Lane
Frankfort, KY 40601**

8. In accordance with Regulation 401 KAR 50:035, Section 23, the permittee shall provide the division with all information necessary to determine its subject emissions within thirty (30) days of the date the KYEIS emission report is mailed to the permittee.
9. Pursuant to Section VII.3 of the policy manual of the Division for Air Quality as referenced by Regulation 401 KAR 50:016, Section 1(1), results of performance test(s) required by the permit shall be submitted to the division by the source or its representative within forty-five days after the completion of the fieldwork.

SECTION G - GENERAL CONDITIONS**(a) General Compliance Requirements**

1. The permittee shall comply with all conditions of this permit. A noncompliance shall be a violation of state regulation 401 KAR 50:035, Permits, Section 7(3)(d) and is also a violation of Federal Statute 42 USC 7401 through 7671q (the Clean Air Act) and is grounds for enforcement action including but not limited to the termination, revocation and reissuance, or revision of this permit.
2. The filing of a request by the permittee for any permit revision, revocation, reissuance, or termination, or of a notification of a planned change or anticipated noncompliance, shall not stay any permit condition.
3. This permit may be revised, revoked, reopened and reissued, or terminated for cause. The permit will be reopened for cause and revised accordingly under the following circumstances:
 - a. If additional applicable requirements become applicable to the source and the remaining permit term is three (3) years or longer. In this case, the reopening shall be completed no later than eighteen (18) months after promulgation of the applicable requirement. A reopening shall not be required if compliance with the applicable requirement is not required until after the date on which the permit is due to expire, unless this permit or any of its terms and conditions have been extended pursuant to Regulation 401 KAR 50:035, Section 12(2)(c);
 - b. The Cabinet or the U. S. EPA determines that the permit must be revised or revoked to assure compliance with the applicable requirements;
 - c. The Cabinet or the U. S. EPA determines that the permit contains a material mistake or that inaccurate statements were made in establishing the emissions standards or other terms or conditions of the permit;

Proceedings to reopen and reissue a permit shall follow the same procedures as apply to initial permit issuance and shall affect only those parts of the permit for which cause to reopen exists. Reopenings shall be made as expeditiously as practicable. Reopenings shall not be initiated before a notice of intent to reopen is provided to the source by the division, at least thirty (30) days in advance of the date the permit is to be reopened, except that the division may provide a shorter time period in the case of an emergency.

4. The permittee shall furnish to the division, in writing, information that the division may request to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit, or to determine compliance with the permit. [401 KAR 50:035, Permits, Section 7(2)(b)3e and 401 KAR 50:035, Permits, Section 7(3)(j)]
5. The permittee, upon becoming aware that any relevant facts were omitted or incorrect information was submitted in the permit application, shall promptly submit such supplementary facts or corrected information to the permitting authority.

SECTION G - GENERAL CONDITIONS (CONTINUED)

6. Any condition or portion of this permit which becomes suspended or is ruled invalid as a result of any legal or other action shall not invalidate any other portion or condition of this permit. [401 KAR 50:035, Permits, Section 7(3)(k)]
7. The permittee shall not use as a defense in an enforcement action the contention that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance. [401 KAR 50:035, Permits, Section 7(3)(e)]
8. Except as identified as state-origin requirements in this permit, all terms and conditions contained herein shall be enforceable by the United States Environmental Protection Agency and citizens of the United States.
9. This permit shall be subject to suspension if the permittee fails to pay all emissions fees within 90 days after the date of notice as specified in 401 KAR 50:038, Section 3(6). [401 KAR 50:035, Permits, Section 7(3)(h)]
10. Nothing in this permit shall alter or affect the liability of the permittee for any violation of applicable requirements prior to or at the time of permit issuance. [401 KAR 50:035, Permits, Section 8(3)(b)]
11. This permit shall not convey property rights or exclusive privileges. [401 KAR 50:035, Permits, Section 7 (3)(g)]
12. Issuance of this permit does not relieve the permittee from the responsibility of obtaining any other permits, licenses, or approvals required by the Kentucky Cabinet for Natural Resources and Environmental Protection or any other federal, state, or local agency.
13. Nothing in this permit shall alter or affect the authority of U.S. EPA to obtain information pursuant to Federal Statute 42 USC 7414, Inspections, monitoring, and entry. [401 KAR 50:035, Permits, Section 7(2)(b)5]
14. Nothing in this permit shall alter or affect the authority of U.S. EPA to impose emergency orders pursuant to Federal Statute 42 USC 7603, Emergency orders. [401 KAR 50:035, Permits, Section 8(3)(a)]
15. Permit Shield: Except as provided in State Regulation 401 KAR 50:035, Permits, compliance by the affected facilities listed herein with the conditions of this permit shall be deemed to be compliance with all applicable requirements identified in this permit as of the date of issuance of this permit.

SECTION G - GENERAL CONDITIONS (CONTINUED)**(b) Permit Expiration and Reapplication Requirements**

This permit shall remain in effect for a fixed term of five (5) years following the original date of issue. Permit expiration shall terminate the source's right to operate unless a timely and complete renewal application has been submitted to the division at least six months prior to the expiration date of the permit. Upon a timely and complete submittal, the authorization to operate within the terms and conditions of this permit, including any permit shield, shall remain in effect beyond the expiration date, until the renewal permit is issued or denied by the division. [401 KAR 50:035, Permits, Section 12]

(c) Permit Revisions

1. A minor permit revision procedure may be used for permit revisions involving the use of economic incentive, marketable permit, emission trading, and other similar approaches, to the extent that these minor permit revision procedures are explicitly provided for in the SIP or in applicable requirements and meet the relevant requirements of Regulation 401 KAR 50:035, Section 15.
2. This permit is not transferable by the permittee. Future owners and operators shall obtain a new permit from the Division for Air Quality. The new permit may be processed as an administrative amendment if no other change in this permit is necessary, and provided that a written agreement containing a specific date for transfer of permit responsibility coverage and liability between the current and new permittee has been submitted to the permitting authority thirty (30) days in advance of the transfer.

(d) New Construction, Start Up and Initial Compliance Demonstration Requirements

1. Construction of process and/or air pollution control equipment authorized by this permit shall be conducted and completed only in compliance with the conditions of this permit.
2. Within thirty (30) days following commencement of construction, and within fifteen (15) days following start-up and attainment of the maximum production rate specified in the permit application, or within fifteen (15) days following the issuance date of this permit, whichever is later, the permittee shall furnish to the Division for Air Quality's Frankfort Regional Office in writing, with a copy to the Division's Frankfort Central Office, notification of the following:
 - a. The date when construction commenced.
 - b. The date of start-up of the affected facilities listed in this permit.
 - c. The date when the maximum production rate specified in the permit application was achieved.

SECTION G - GENERAL CONDITIONS (CONTINUED)

3. Pursuant to State Regulation 401 KAR 50:035, Permits, Section 13(1), unless construction is commenced on or before 18 months after the date of issue of this permit, or if construction is commenced and then stopped for any consecutive period of 18 months or more, or if construction is not completed within eighteen (18) months of the scheduled completion date, then the construction and operating authority granted by this permit for those affected facilities for which construction was not completed shall immediately become invalid. Extensions of the time periods specified herein may be granted by the Division upon a satisfactory request showing that an extension is justified.
4. Operation of the affected facilities for which construction is authorized by this permit shall not commence until compliance with the applicable standards specified herein has been demonstrated pursuant to 401 KAR 50:055, except as provided in Section I of this permit.
5. This permit shall allow time for the initial start-up, operation, and compliance demonstration of the affected facilities listed herein. However, within sixty (60) days after achieving the maximum production rate at which the affected facilities will be operated but not later than 180 days after initial start-up of such facilities, the permittee shall conduct performance tests on each affected facility in accordance with Regulation 401 KAR 50:055, General compliance requirements. These performance tests shall include a destruction efficiency test on the Catalytic Oxidizer No. 5 and destruction efficiency tests on the Thermal Oxidizers Nos. 6 and 7. These performance tests shall include tests of total enclosure capture to the respective oxidizers for all the facilities authorized to be constructed by this permit: P7, P8, P9, and P10; L5, L6, and L7. **These performance tests must also be conducted in accordance with General Conditions G(d)6 of this permit and the permittee must furnish to the Division for Air Quality's Frankfort Central Office a written report of the results of such performance test. See also Section F.9.**
6. Pursuant to Section VII 2.2.(1) of the policy manual of the Division for Air Quality as referenced by Regulation 401 KAR 50:0016, Section 1.(1), at least one month prior to the date of the required performance test, the permittee shall complete and return a Compliance Test Protocol (Form DEP 6027) to the Division's Frankfort Central Office. Pursuant to 401 KAR 50:045, Section 5, the Division shall be notified of the actual test date at least ten (10) days prior to the test.
 - (e) Acid Rain Program Requirements
 1. If an applicable requirement of Federal Statute 42 USC 7401 through 7671q (the Clean Air Act) is more stringent than an applicable requirement promulgated pursuant to Federal Statute 42 USC 7651 through 7651o (Title IV of the Act), both provisions shall apply, and both shall be state and federally enforceable.

SECTION G - GENERAL CONDITIONS (CONTINUED)

(f) Emergency Provisions

1. An emergency shall constitute an affirmative defense to an action brought for noncompliance with the technology-based emission limitations if the permittee demonstrates through properly signed contemporaneous operating logs or other relevant evidence that:
 - a. An emergency occurred and the permittee can identify the cause of the emergency;
 - b. The permitted facility was at the time being properly operated;
 - c. During an emergency, the permittee took all reasonable steps to minimize levels of emissions that exceeded the emissions standards or other requirements in the permit; and,
 - d. The permittee notified the division as promptly as possible and submitted written notice of the emergency to the division within two working days after the time when emission limitations were exceeded due to the emergency. The notice shall meet the requirements of 401 KAR 50:035, Permits, Section 7(1)(e)2, and include a description of the emergency, steps taken to mitigate emissions, and the corrective actions taken. This requirement does not relieve the source of any other local, state or federal notification requirements.
2. Emergency conditions listed in General Condition (f)1 above are in addition to any emergency or upset provision(s) contained in an applicable requirement.
3. In an enforcement proceeding, the permittee seeking to establish the occurrence of an emergency shall have the burden of proof. [401 KAR 50:035, Permits, Section 9(3)]

(g) Risk Management Provisions

1. The permittee shall comply with all applicable requirements of 40 CFR Part 68, Risk Management Plan provisions. If required, the permittee shall comply with the Risk Management Program and submit a Risk Management Plan to:
 - RMP Reporting Center
 - P.O. Box 3346
 - Merrifield, VA, 22116-3346
2. If requested, submit additional relevant information by the division or the U.S. EPA.

SECTION G - GENERAL CONDITIONS (CONTINUED)

(h) Ozone depleting substances

1. The permittee shall comply with the standards for recycling and emissions reduction pursuant to 40 CFR 82, Subpart F, except as provided for Motor Vehicle Air Conditioners (MACS) in Subpart B:
 - a. Persons opening appliances for maintenance, service, repair, or disposal shall comply with the required practices contained in 40 CFR 82.156.
 - b. Equipment used during the maintenance, service, repair, or disposal of appliances shall comply with the standards for recycling and recovery equipment contained in 40 CFR 82.158.
 - c. Persons performing maintenance, service, repair, or disposal of appliances shall be certified by an approved technician certification program pursuant to 40 CFR 82.161.
 - d. Persons disposing of small appliances, MACS, and MAC-like appliances (as defined at 40 CFR 82.152) shall comply with the Record keeping requirements pursuant to 40 CFR 82.166.
 - e. Persons owning commercial or industrial process refrigeration equipment shall comply with the leak repair requirements pursuant to 40 CFR 82.156.
 - f. Owners/operators of appliances normally containing 50 or more pounds of refrigerant shall keep records of refrigerant purchased and added to such appliances pursuant to 40 CFR 82.166.

2. If the permittee performs service on motor (fleet) vehicle air conditioners containing ozone-depleting substances, the source shall comply with all applicable requirements as specified in 40 CFR 82, Subpart B, Servicing of Motor Vehicle Air Conditioners.

SECTION H - ALTERNATE OPERATING SCENARIOS

The alternate operating scenarios set forth below have been approved by the Division based on information supplied with the application and during the application review process. The terms and conditions of each alternate operating scenario have been developed to ensure compliance with the applicable regulations. The permittee, when making a change from one operating scenario to another, shall record contemporaneously in a log at the permitted facility a record of the scenario under which the facility is operating as required by 401 KAR 50:035, Section 7(1)(g). The permit shield, as provided in Section G, Condition (a)15, shall extend to each alternate operating scenario set forth in this Section. All conditions not specified under an alternate operating scenario shall remain unchanged from their permit values or requirements.

40 CFR 63, Subpart KK, allows a choice in method of demonstrating compliance from among the four listed below.

Compliance Demonstration Method for HAPs:

Compliance with 40 CFR 63, Subpart KK shall be demonstrated by one of the options under 63.825 (f). This is for owners or operators of product and packaging rotogravure or wide-web flexographic printing presses if the affected source operates more than one capture system, more than one control device, one or more never-controlled work stations, or ... etc. In this case the owner or operator is required to demonstrate compliance according to the procedures in paragraphs (f)(1) through (f)(7) of Section KK. Standards: Product and packaging rotogravure and wide-web flexographic printing, 63.825(f)(3) applies for work stations that are controlled by an oxidizer and a capture device and 63.825(f)(5) applies for work stations that are uncontrolled. Paragraph 63.825(f)(6) requires measurement of solids content if demonstration of compliance is to be based upon solids applied or emission of less than the calculated allowable organic HAP. Paragraph 63.825(f)(7) combines emissions of the controlled and uncontrolled work stations and requires demonstration of compliance through four (4) different means:

SCENARIO 1:

(7)(i) Total mass of organic HAP emitted not more than four percent of the total mass of all materials applied.

SCENARIO 2:

(7)(ii) Total mass of organic HAP emitted not more than 20 percent of solids applied.

SCENARIO 3:

(7)(iii) Total mass of organic HAP emitted not more than the equivalent allowable organic HAP emissions, calculated by

$$H_e = 0.20[\sum(i=1..p)M_i G_i C_{hi}] + 0.04[\sum(i=1..p)M_i (1 - G_i) + \sum(j=1..q)M_{Lj}]$$

SCENARIO 4:

(7)(iv) Total mass of organic HAP emitted not more than five percent of the total mass of organic HAP applied.

HAP applied for both controlled and uncontrolled work stations is to be calculated by

$$H = \sum(i=1..p)M_i C_{hi} + \sum(j=1..q)M_j C_{hj}$$

The parameters are as defined in subsection 63.822 (b) of Subpart KK.

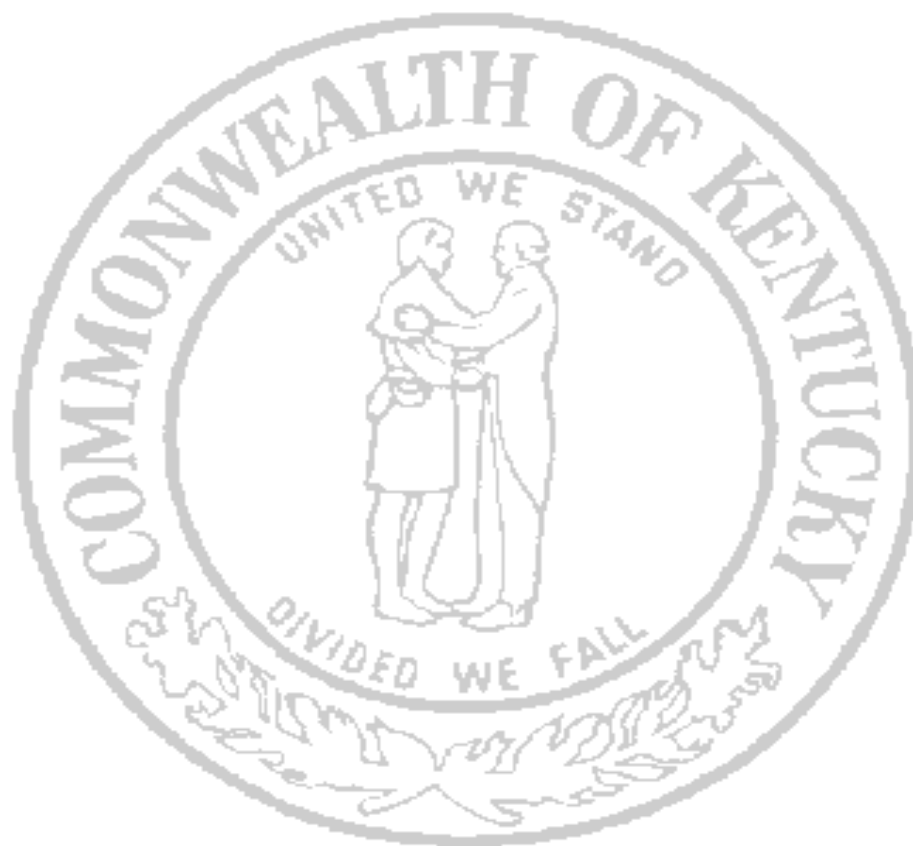
Permit Number: F-99-016

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SECTION I - COMPLIANCE SCHEDULE

None.

**SULFUR DIOXIDE REDESIGNATION REQUEST
AND MAINTENANCE PLAN SIP REVISION FOR
BOYD COUNTY, KENTUCKY
LOCATED WITHIN THE
KENTUCKY
PORTION OF THE HUNTINGTON-ASHLAND,
WV-KY-OH
METROPOLITAN STATISTICAL AREA**



Prepared by the
KENTUCKY DIVISION FOR AIR QUALITY
Submitted by
KENTUCKY ENVIRONMENTAL AND PUBLIC PROTECTION CABINET
July 2005

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INTRODUCTION

The Commonwealth of Kentucky submits this redesignation request to the United States Environmental Protection Agency (U.S. EPA) in accordance with the requirements of the Clean Air Act Amendments of 1990. The redesignation request demonstrates how Kentucky will maintain compliance with the primary and secondary National Ambient Air Quality Standards (NAAQS) for SO₂ in that portion of Boyd County previously designated nonattainment.

BACKGROUND

In accordance with the Clean Air Act (CAA), the *Federal Register* notice published on March 3, 1978, designated Boyd County nonattainment for sulfur dioxide (SO₂) (*Appendix A*). This SO₂ nonattainment designation was based on modeling performed by the U.S. EPA and Kentucky, which indicated that both the annual and the 24-hour SO₂ NAAQS were being violated.

After completion of a one-year monitoring study conducted by Environmental Systems, Inc., for Ashland Oil Company, the results showed that the National Ambient Air Quality Standards (NAAQS) for SO₂ were being attained in the northern part of the county. In a *Federal Register* notice, published on November 2, 1979, the U.S. EPA revised the nonattainment designation area to that portion of Boyd County lying south of UTM Line 4251 km (*Appendix B*).

REQUEST TO REDESIGNATE

I. Attainment of the Standard

In order to determine that the remaining southern portion of Boyd County currently designated nonattainment has now attained the standard for SO₂, the U.S. EPA requires air dispersion modeling data and ambient air monitoring data that demonstrate compliance with the NAAQS. The attainment year for the southern portion of Boyd County is the baseline year (the year of the modeling demonstration), which is 2003.

- a. **Ambient Monitoring** – Ambient air monitoring data for Kentucky, Ohio, and West Virginia is included in *Appendix C*. No exceedances of the SO₂ NAAQS in Boyd County, Kentucky, have occurred since monitoring began in 1975. For Ohio, the monitoring data indicate no exceedances of the SO₂ NAAQS in Lawrence County since monitoring began in 1977. Finally, although there were 24-hour SO₂ violations in Wayne County, West Virginia, in the late 1980's, there have been no exceedances of the SO₂ NAAQS in Cabell or Wayne Counties, West Virginia, since 1990. This indicates that not only Kentucky, but the entire tri-state area is in compliance with the standard.

- b. **Modeling** – By letter dated October 20, 2003 to the U.S. EPA, Region 4, the Kentucky Division for Air Quality (KYDAQ) requested the use of an alternative model for redesignation of that portion of Boyd County that is currently classified as SO₂ nonattainment. The alternative requested was the AERMOD model (*Appendix D*).

By letter dated November 12, 2003, the U.S. EPA, Region 4, approved the use of the AERMOD model (*Appendix E*). U.S. EPA, Regions 3 and 4, the KYDAQ, and the West Virginia Department of Environmental Protection (WVDEP) jointly developed air dispersion modeling for the Boyd County, Kentucky, SO₂ nonattainment area. The modeling procedures applied in the demonstration of attainment for the Boyd County nonattainment area were based on the use of the American Meteorological Society (AMS)/United States Environmental Protection Agency (EPA) **Regulatory Model Improvement Committee (AERMIC) Model (AERMOD)**.

This dispersion modeling was based upon enforceable SO₂ emission limits imposed in enforceable documents, in addition to a representative background, and demonstrated that the maximum SO₂ impacts do not violate the NAAQS for SO₂. The modeling results are contained in *Appendix F*. A summary of the modeling results is listed in Table 1 below. Additionally, electronic versions of the modeling input and output modeling used to

generate the modeling results presented in Table 1 are provided on the compact disc included with this redesignation request.

| Table 1. Summary of SO₂ Modeling Results in 2003 for Boyd County Nonattainment Area | | | | | |
|---|-------------|---------------------------------|---|---|---|
| Averaging Period | Rank | NAAQS (ug/m³) | Max Modeled Concentration (ug/m³) | Regional Background Concentration (ug/m³) | Total Concentration (ug/m³) |
| 3-hour | HSH | 1300 | 1060.177 | 103.4 | 1163.57 |
| 24-hour | HSH | 365 | 306.658 | 43.2 | 349.858 |
| Annual | H | 80 | 66.1 | 11.0 | 77.1 |

II. SIP Approval

This redesignation request complies with CAA §110 k requirements. These requirements are listed in detail in Section IV of this document, “Section 110 and Part D Requirements.”

III. Permanent and Enforceable Improvement in Air Quality

The continued improvement and maintenance of air quality since 1975 in Boyd County, as verified by the lack of exceedances of the SO₂ NAAQS, is due to the implementation of permanent and enforceable reductions.

CALGON CARBON CORPORATION, CATLETTSBURG, KENTUCKY:

The core of Kentucky’s maintenance plan for Boyd County is the revised emission limits in the permit for the key contributing source, Calgon Carbon Corporation, as identified in the modeling demonstration. Specifically, these revisions to the Calgon Corporation source permit reduced allowables for SO₂, particularly at the shortest stacks where previous modeling had demonstrated exceedances due to high concentrations from severe downwash effects.

The Calgon Carbon permit was issued August 21, 2000, with a final revision date of March 1, 2004, and lowers the allowables as described in the following “Table 2. Emission and Operating Caps Description.” The entire permit (*Appendix H*) is provided for reference only; only emissions points listed in Table 2 (below) are being incorporated into the SIP. The Statement of Basis for the Calgon Carbon permit is provided in *Appendix I*.

**Table 2.
Emission and Operating Caps Description for Calgon Carbon Corporation,
Catlettsburg, Kentucky**

| AERMOD Emission Point | Calgon Emission Point | Affected Facility | Emissions g/s | New Federally Enforceable Allowable (V-00-015 R2) | Decrease in Allowable g/s | Stack Height Meters |
|------------------------------|------------------------------|--------------------------|----------------------|--|----------------------------------|----------------------------|
| 57 | 12 | B-Line Baker Heater | 3.352 | 0.215 | -3.14 | 7.0 |
| 58 | 14 | B-Line Activator | 3.326 | 0.3629 | -2.96 | 36.6 |
| 59 | 21 | C-Line Activators | 4.435 | 0.9727 | -3.46 | 36.6 |
| 62 | 31 | D-Line Bakers | 8.278 | 1.89 | -6.39 | 28.0 |
| 63 | 34 | D-Line Activators | 8.278 | 1.89 | -6.39 | 35.0 |
| 64 | 32 | D-Line Baker Heaters | 3.352 | 0.215 | -3.14 | 9.0 |
| 65 | 40 | E-Line Baker Heaters | 2.684 | 1.004 | -1.68 | 9.0 |
| 66 | 39 | E-Line Bakers | 9.579 | 1.89 | -7.69 | 37.0 |
| 67 | 42 | E-Line Activators | 4.485 | 1.89 | -2.60 | 28.0 |
| 69 | 64 | Package Boiler | 3.977 | 0.002 | -3.98 | 4.9 |
| Total Decrease TPY | | | | | -1439.67 | |

As a result of the noted revisions, the total decrease at the facility is 1439.67 tons per year (TPY).

With these revised, permanent, and enforceable reductions in the allowables at Calgon Carbon Corporation, the Division is confident that Boyd County can be redesignated as attainment with no possibility of future violations of the SO₂ NAAQS.

IV. Section 110 and Part D Requirements

The nonattainment plan provisions (including plan items) under CAA Section 172 (c) required to be submitted under this part shall comply with each of the following:

- a. *RACM* – This submittal includes modeling data demonstrating that the applicable area in Boyd County has achieved attainment of the SO₂ NAAQS with the control measures fully implemented at this time. The DAQ has determined that the control measures and lower allowables in the permits satisfy the RACM requirements of the CAA. The permit for Calgon Carbon Corporation ensures implementation of these enforceable control measures. Ambient air monitoring results demonstrate that Boyd County has maintained the SO₂ NAAQS since 1975.
- b. *RFP* - EPA's reasonable further progress requirements stipulate annual incremental reductions in SO₂ needed to assure attainment of the SO₂ NAAQS. This is not required because this submittal demonstrates attainment of the SO₂ NAAQS. Using the maximum allowable emission limits (which are not expected to change) provides a current and a projected inventory which are the same. Using the maximum allowable permit emission limits in the model runs provided conclusions that will remain valid until the future year of the maintenance plan, which is 2015.
- c. *Inventory* – An inventory of SO₂ emissions in Boyd County and the entire tri-state area (contiguous parts of Kentucky, Ohio, and West Virginia) is provided in the air dispersion modeling analysis included in *Appendix F* of this SIP revision.

- d. *Identification and Quantification* – “Such plan provisions shall expressly identify and quantify the emissions, if any, of any such pollutant or pollutants which will be allowed, in accordance with section 173(a)(1)B, from the construction and operation of major new or modified stationary sources in each such area ...”

This information is unnecessary because the EPA Administrator in consultation with the Federal Secretary of Housing and Urban Development has not identified the area as a zone for which economic development should be targeted.

- e. *Permits for new and modified major stationary sources* – Kentucky has an approved program (Title V, NSR, PSD) for new and modified stationary sources.
- f. *Other measures* – The permit for Calgon Carbon Corporation (*Appendix H*) provides the required emissions limitations, operating requirements, and compliance schedules, where appropriate. Only emission points in Table 2 of this redesignation request (page 6) are being incorporated into the SIP; the rest of the permit is included in *Appendix H* for reference only.
- g. *Compliance with Section 110 (a) (2)* – All of the applicable provisions of § 110 (a)(2) are already required by the provisions listed above. *Equivalent techniques* – Kentucky requested that the U. S. EPA approve the use of the AERMOD non-guideline model in a letter dated October 20, 2003 (*Appendix D*). U.S. EPA Region 4 approved AERMOD for this application in a November 12, 2003, letter from the Regional Administrator (*Appendix E*).
- h. *Contingency measures* – Kentucky will rely on enforcing the applicable reductions in the source permit. All measures in the permit and the SIP are implemented prior to redesignation of the area to attainment. As stated in the Preamble (57 FR 13547), the modeling of SO₂ sources is considered reliable for predicting the amount of SO₂ emitted from sources in the nonattainment area. There is not such a confidence level with other pollutants. Also, the

Preamble states that control measures for SO₂ emissions are “well understood and far less prone to uncertainty.” Therefore it will be unlikely for an SO₂ area to implement emission controls but fail to attain the NAAQS.

In the event that a monitored exceedance of the NAAQS for SO₂ occurs in the future, the State will expeditiously investigate and perform culpability analyses to determine the source(s) that caused the exceedance and/or violation, and enforce any SIP or permit limit that is violated. Comprehensive enforcement and compliance programs exist in the State to identify sources of violations of the SO₂ NAAQS and to undertake an aggressive follow-up for compliance and enforcement.

Further, if all sources are found to be in compliance with applicable SIP and permit emission limits, the State shall perform the necessary analysis to determine the cause(s) of the exceedance, and determine what additional control measures are necessary to impose on the area’s stationary sources to continue to maintain attainment of the NAAQS for SO₂.

The State shall inform any affected stationary source(s) of SO₂ of the potential need for additional control measures. If there is a violation of the NAAQS for SO₂, the State will notify the stationary source(s) that the potential exists for a NAAQS violation.

Within six months, the source(s) must submit a detailed plan of action specifying additional control measures to be implemented no later than 18 months after the notification. The additional control measures will be submitted to the U.S. EPA for approval and incorporation into the SIP.

V. Maintenance Plan Requirements

Modeled air quality improvement in the Boyd County area is attributed to lower SO₂ emission limits and operating restrictions imposed on the facility that earlier contributed to the county’s modeled nonattainment status. Emissions from this source were modeled with all the control measures in place. The data

submitted by Kentucky now demonstrates modeled attainment of the SO₂ NAAQS. Using the maximum allowable emission limits (which are not expected to change) provides a current and a projected inventory which are the same. Using the maximum allowable permit emission limits in the model runs provided conclusions that will remain valid until the future year of the maintenance plan, which is 2015. These control limits are established in federally enforceable operating conditions cited in the permit for the key contributing source; these conditions do not expire and automatically become part of any reissued permit, therefore providing for maintenance of the SO₂ NAAQS until the year 2015.

Furthermore, if any major construction is proposed in the future, then PSD will apply and the applicant will be required to demonstrate that they would not cause or contribute to a NAAQS violation.

Growth in the area will be monitored by KYDAQ keeping track of new permit applications, requests for permit amendments, and observing the annual emissions inventory that all facilities with permits must submit to the KYDAQ. Future SO₂ emissions are not likely to exceed the ambient standards because of Kentucky's permitting program and the requirement for PSD demonstration.

As well, Kentucky's maintenance plan reflects the existing federal measures, including the acid rain program and rules that require lower sulfur fuels for gasoline-fueled and diesel-fueled vehicles. Both the emissions reductions from the acid rain program and the reductions in motor vehicle SO₂ emissions expected over the next few years will assure that SO₂ background concentrations will remain in compliance with the SO₂ NAAQS standards. Due to implementation of changes in the acid rain program and the implementation of the Clean Air Transport Rule, SO₂ emissions will continue to decrease in this area, and it is Kentucky's position that the current inventory as modeled will serve as the projected inventory.

The only additional condition for assuring maintenance is to assure through ambient monitoring that background SO₂ concentrations remain within NAAQS

attainment levels. The existing sulfur dioxide ambient monitoring network located within the Huntington-Ashland, WV-KY-OH MSA sulfur dioxide maintenance area has been approved by the USEPA. The monitoring network will continue to remain operational in accordance to 40 CFR 58, with no reductions.

PUBLIC PARTICIPATION

A public hearing to receive comments on the SIP revision for the redesignation of the Kentucky portion of the Huntington-Ashland, WV-KY-OH, MSA, sulfur dioxide nonattainment area was held on January 26, 2005. A copy of the public hearing notice is included in *Appendix J*. The Statement of Consideration for comments received is included in *Appendix K*.

APPENDIX SUMMARY

Appendix A – *Federal Register*, Vol. 43, No. 43, March 3, 1978, “National Ambient Air Quality Standards, States Attainment Status”

Appendix B – *Federal Register*, Vol. 44, No. 214, November 2, 1979, “Designation of Areas for Air Quality Planning Purposes; Attainment Status Designations: Florida, Kentucky, and Tennessee”

Appendix C – AQS/USEPA Database, “AMP450 Ambient SO₂ Data Request, 2004 through 1975 for Tri-State area counties”

Appendix D – Letter (October 20, 2003) from KYDAQ Director John S. Lyons to USEPA Brenda C. Johnson requesting approval to use an alternative model for the SO₂ redesignation of Boyd County

Appendix E – Letter (November 12, 2003) from USEPA Regional Administrator J. I. Palmer to KYDAQ Director John S. Lyons approving the request to use an alternative model (AEROMOD) for the SO₂ redesignation of Boyd County

Appendix F – “Boyd County, Kentucky, Sulfur Dioxide Attainment Modeling Demonstration” (December 2003)

Appendix G – *Federal Register*, Vol. 70, No. 6, January 10, 2005, “Approval and Promulgation of Air Quality Implementation Plans; West Virginia; Redesignation SO₂ Nonattainment Area and Approval of Maintenance Plan”

Appendix H – Calgon Carbon Corporation, Catlettsburg, KY, Title V Air Quality Permit, issued August 21, 2000, and revised March 1, 2004.

Appendix I – Calgon Carbon Corporation, Catlettsburg, KY, Permit Statement of Basis, February 23, 2004.

Appendix J – Notice of Public Hearing and Legal Documentation

Appendix K – Statement of Consideration

Appendix A

Federal Register,
“National Ambient Air Quality Standards,
States Attainment Status,”
March 3, 1978

Library

FRIDAY, MARCH 3, 1978
PART II



**Register
of
Federal
Records**

**ENVIRONMENTAL
PROTECTION
AGENCY**

**NATIONAL AMBIENT AIR
QUALITY STANDARDS**

States Attainment Status

RULES AND REGULATIONS

[6560-01]

Title 40—Protection of Environment

CHAPTER I—ENVIRONMENTAL
PROTECTION AGENCY

SUBCHAPTER C—AIR PROGRAMS

[FRL 856-5]

PART 81—AIR QUALITY CONTROL
REGIONS, CRITERIA, AND CON-
TROL TECHNIQUESSection 107—Attainment Status
DesignationsAGENCY: Environmental Protection
Agency.

ACTION: Final rule.

SUMMARY: This rulemaking sets forth the attainment status of all States in relation to the national ambient air quality standards (NAAQS). The tables following this rulemaking indicate, on a State-by-State, pollutant-by-pollutant basis, the attainment status of every area as submitted by the appropriate State agency and approved, or as designated by the Environmental Protection Agency (EPA). No distinctions are made as to the severity of the violations recorded in the areas designated as nonattainment in these tables. These designations are immediately effective. EPA is soliciting comments for 60 days and will republish revised designations as appropriate.

DATES: Effective Date: Immediately.
Comments Due: May 2, 1978.

ADDRESS: General comments on these designations should be addressed to Norman L. Dunfee, Chief, Control Programs Operations Branch (MD-15), Office of Air Quality Planning and Standards (OAQPS), Research Triangle Park, N.C. 27711.

Comments relative to specific State designations should be directed to the appropriate EPA Regional Office, contact as listed below:

Tom Devine, Chief, Air Branch, EPA Region I, JFK Federal Building, Boston, Mass. 02203 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont).

William Baker, Chief, Air Branch, EPA Region II, 26 Federal Plaza, New York, N.Y. 10007 (New York, New Jersey, Puerto Rico, Virgin Islands).

Howard Heim, Chief, Air Branch, EPA Region III, Curtis Building, Sixth and Walnut Streets, Philadelphia, Pa. 19106 (Delaware, Maryland, Pennsylvania, Virginia, West Virginia, District of Columbia).

Tom Helms, Chief, Air Branch, EPA Region IV, 345 Courtland Street NE., Atlanta, Ga. 30308 (Alabama, Georgia, Florida, Kentucky, Mississippi, North Carolina, Tennessee, South Carolina).

Jack Chicca, Chief, Air Branch, EPA Region V, 230 South Dearborn Street, Chicago, Ill. 60604 (Indiana, Illinois, Michigan, Minnesota, Ohio, Wisconsin).

Jack Divita, Chief, Air Branch, EPA Region VI, 1201 Elm Street, Dallas, Tex. 75270 (Arkansas, Louisiana, Oklahoma, New Mexico, Texas).

Art Spratlin, Chief, Air Branch, EPA Region VII, 1735 Baltimore Street, Kansas City, Mo. 64108 (Nebraska, Iowa, Kansas, Missouri).

Robert DeSpain, Chief, Air Branch, EPA Region VIII, 1860 Lincoln Street, Denver, Colo. 80295 (Montana, Utah, North Dakota, South Dakota, Wyoming, Colorado).

Allyn Davis, Chief, Air Branch, EPA Region IX, 215 Fremont Street, San Francisco, Calif. 94105 (California, Nevada, Arizona, Hawaii, American Samoa, Northern Mariana Islands).

Clark Gaulding, Chief, Air Branch, EPA Region X, 1200 Sixth Avenue, Seattle, Wash. 98101 (Alaska, Washington, Oregon, Idaho).

FOR FURTHER INFORMATION
CONTACT:

Norman L. Dunfee, USEPA, Research Triangle Park, N.C. 27711, phone 629-5226 (FTS) or 919-541-5226 (commercial).

SUPPLEMENTARY INFORMATION: The Clean Air Act (CAA) Amendments of 1977 place additional requirements on the States and EPA. Among them, the Amendments added section 107(d), which directed each State, within 120 days after the Amendments were enacted, to submit to the Administrator a list of the NAAQS attainment status of all areas within the State. The Administrator was required under section 107(d)(2) to promulgate the State lists, with any necessary modifications, within 60 days of their submittal.

The States are now preparing revisions to their State implementation plans (SIPs) as required by sections 110(a)(2)(I) and 172 of the Act. This enterprise, which must be completed by January 1, 1979, requires that the States have immediate guidance as to the attainment status of the areas designated under section 107(d). Congress has acknowledged this by imposing a tight schedule on the designation process and requiring EPA to promulgate the list within 180 days of the enactment of the amendments. Under these circumstances it would be impracticable and contrary to the public interest to ignore the statutory schedule and postpone publishing these regulations until notice and comment can be effectuated. For this good cause, the Administrator has made these designations immediately effective.

The Agency recognizes, however, the importance of public involvement in the designation process. It is therefore, soliciting public comment on this rule by May 2, 1978.

Comments received will be considered carefully and revisions to the designations will be made where appropriate. The criteria used in making these designations include the following.

AIR QUALITY DATA

Section 107(d) of the CAA specified that designations should be based upon air quality levels as of enactment of the Amendments (August 7, 1977). States were required by EPA guidance to consider the most recent four quarters of monitored ambient air quality data available. If this data showed no standards violations, then the previous four quarters of monitoring data were to be examined to assure that the current indication of attainment was not the result of a single year's data reflecting unrepresentative meteorological conditions. In the absence of sufficient monitored air quality data, other evaluation methods were used, including air quality dispersion modeling.

GEOGRAPHIC SIZE

The Act specified that the designation areas could be based on air quality control regions (AQCRs) or any subportions of these areas. EPA advised States they could divide AQCRs into various nonattainment, attainment, or unclassified portions, i.e., county, subcounty, or other geographic areas as long as the area could be clearly defined in a written narrative. Additionally, a different geographic area could be used in designating the status for each pollutant.

POLLUTANT SPECIFIC CONSIDERATIONS

Subsections 107(d)(1) (A)-(E) of the CAA Amendments specified the possible categories for area designations. For both total suspended particulates (TSP) and sulfur dioxide (SO₂), an area could be designated as: (1) Not meeting the primary NAAQS, (2) not meeting the secondary NAAQS, (3) unclassifiable, and (4) attainment. For carbon monoxide (CO), photochemical O₃, and nitrogen dioxide (NO₂), designations of: (1) Not meeting the primary NAAQS, and (2) attainment/unclassified were possible. The attainment and unclassified designations for CO/O₃/NO₂ are combined into one column for the tables presented in this notice because both designations are set forth by subsection 107(d)(1)(E) of the CAA. No designations regarding the secondary NAAQS for these pollutants were necessary since the primary standards and secondary standards are identical.

The criteria used in designation of the status of each pollutant used in addition to ambient air quality data is discussed below:

PHOTOCHEMICAL OXIDANTS

There are 105 urban areas in the United States with populations great-

er than 200,000. These major urban areas (except Honolulu, Hawaii, and Spokane, Wash.) are where the oxidant problem is most severe. Honolulu has recorded eight consecutive quarters of data without a violations justifying and attainment designation. There is sufficient uncertainty regarding conditions in Spokane to warrant an unclassifiable designation for the present time. The other 103 urban areas, where over 100,000,000 people reside, consistently experience photochemical oxidant levels above the NAAQS. Due to these factors, higher priority is being given in the SIP planning process to these urban areas. Of these, only six urban areas do not have oxidant ambient air quality monitoring data. The other 97 urban areas experienced oxidant violations based on ambient data. Since 97 of the 105 urban areas greater than 200,000 with monitoring data recorded violations, the six cities without data were presumed to be nonattainment for oxidants.

Additionally, a comprehensive analysis was performed by OAQPS and other factors considered by EPA for each of the six urban areas. These analyses substantiated the presumptive nonattainment designation and these areas will be required to monitor during the 1978 oxidant season (summer-fall) to determine the magnitude of their oxidant problem.

TOTAL SUSPENDED PARTICULATES

Given the spatially limited nature of TSP violations, no general area size criteria were possible. However, States were advised that designations along political boundaries such as city limits or county lines were practical from an air quality management standpoint.

The problem of designating for rural fugitive dust areas required special consideration. EPA's fugitive dust policy recognizes the generally greater health impact due to fugitive dust in urban areas in contrast to rural areas. In urban areas, the windblown soil contains various manmade toxic pollutants. But, rural windblown dust is usually not significantly contaminated by industrial pollutants. Therefore, for the purposes of these designations, any rural areas experiencing TSP violations which could be attributed to fugitive dust could claim attainment of the TSP NAAQS. Rural areas for this purpose are defined as those which have: (1) A lack of major industrial development or the absence of significant industrial particulate emissions, and (2) low urbanized population densities.

CARBON MONOXIDE

A designation of nonattainment for the entire urban core area of a city experiencing monitored CO violations was desirable, but smaller area desig-

nations were acceptable since CO violations are most pervasive in downtown areas of high traffic density.

SULFUR DIOXIDE AND NITROGEN DIOXIDE

Generally where EPA promulgated a designation for SO₂, the minimum area was to be the county in which the violating monitoring site was located. If States had monitoring data to substantiate the size areas they designated, they would be acceptable by EPA regardless of size.

AIR QUALITY CONTROL REGION (AQCR) REDESIGNATIONS

Section 107 of the CAA also provided for redesignation of the existing AQCR boundaries where a State determined that the redesignated areas would promote more efficient air quality management. Several States exercised this option in defining their designation areas. Part 81 under Title 40 of the Code of Federal Regulations presently contains descriptions of all existing AQCRs and these descriptions, where feasible, will be modified in a future FEDERAL REGISTER notice to reflect the State revisions. The exact descriptions of all AQCR boundaries are available from either the appropriate State or EPA Regional Office.

EFFECT OF THE DESIGNATIONS

Section 107(d)(1)(A)-(E) sets out attainment status categories to which reference is made in Parts C (Prevention of Significant Deterioration (PSD)) and D (Nonattainment) of the CAA. Section 171(2) in Part D defines "nonattainment area" to include any area identified under subparagraphs 107(d)(1) (A)-(C), while giving the Administrator authority to add other areas based on monitoring or calculations. Similarly, areas designated under subparagraphs 107(d)(1) (D) or (E) are described in section 161, Part C, as PSD areas.

The section 107(d) designations are meant to provide a starting point for States in their efforts to correct existing air quality problems and to implement programs under the 1977 CAA Amendments. For example, a designation as a nonattainment area, in general, means that an applicable SIP must be revised, pursuant to section 172, to provide for attainment of the NAAQS as expeditiously as practicable, but not later than December 31, 1982 (December 31, 1987, under certain conditions for photochemical oxidants and/or carbon monoxide). Under section 172(b)(6) the revised SIPs must require permits, in accordance with the provisions of section 173, for the construction and operation of major new or modified stationary sources. To be approved by the Administrator under section 110(a)(2)(I), a SIP must con-

tain a prohibition against major new source construction in nonattainment areas after June 30, 1979, where emissions from the source would contribute to increases in pollutants for which a NAAQS was being exceeded, unless the SIP meets the requirements of Part D at the time of the permit application. Under section 129 of the Amendments, EPA's emission offsets policy, as modified, continues to apply to major new source construction in nonattainment areas prior to July 1, 1979.

But the designation of an area as nonattainment or attainment must be considered only a point of departure and not a final, inflexible end in itself. The designations will have only limited significance for new source preconstruction review, for three reasons. First, new sources, wherever they propose to locate, must be reviewed for their impact on all nearby areas as well as that in which they would locate. If an area on which a new source would impact is designated differently than the one in which it is locating, the designation of the latter would not necessarily determine the rules to which the source would be subject. Second, PSD rules apply in any area where at least one NAAQS is attained, and since virtually every area in the country shows attainment for at least one pollutant, the PSD review will be a requisite virtually everywhere. Finally, case-by-case new source review is necessitated to account for the possibility that an area with a particular designation may encompass "pockets" which do not fit that designation.

These section 107(d) designations are subject to revision under Section 107(d)(5) whenever sufficient data is available to warrant a redesignation. Both the State and EPA can initiate changes to these designations, but any State redesignation must be submitted to EPA for concurrence. EPA will promulgate any revised list in accordance with the requirements for this initial promulgation.

EPA REVIEW

The State submittals were reviewed by EPA for consistency with the criteria set forth in this notice. Where EPA differed with a State designation, section 107 of the CAA provides that EPA should notify the State and allow the submission of additional information. If EPA and the State could not reach agreement, an EPA designation would replace the State submitted designation. Also, in the case where a State failed to designate for any State or portion thereof the EPA would designate for the State as needed.

EPA considered all available monitoring data where it was determined to be valid. All EPA designations contained in the following tables were

RULES AND REGULATIONS

8997

Kentucky - SO₂

| Designated Area | Does Not Meet Primary Standards | Does Not Meet Secondary Standards | Cannot Be Classified or Better Than National Standards | Better Than National Standards |
|---|---------------------------------|-----------------------------------|--|--------------------------------|
| Boyd County | X | | | |
| That portion of Daviess Co. in Owensboro | X | X | | |
| Greenup County | X | X | | |
| That portion of Henderson Co in Henderson | X | | | |
| Jefferson County | X | X | | |
| McCracken County | X | | | |
| Muhlenberg County | X | X | | |
| Webster County | X | X | | |
| Rest of State | | | | X |

Kentucky - CO

| Designated Area | Does Not Meet Primary Standards | Cannot Be Classified or Better Than National Standards |
|------------------|---------------------------------|--|
| Jefferson County | X | |
| Rest of State | | X |

Kentucky - O₃

| Designated Area | Does Not Meet Primary Standards | Cannot Be Classified or Better Than National Standards |
|--|---------------------------------|--|
| Cincinnati Area - Boone, Kenton, and Campbell Counties | X | |
| Daviess County | X | |
| Fayette County | X | |
| Henderson County | X | |
| Jefferson County | X | |
| McCracken County | X | |
| Boyd County | X | |
| Rest of State | | X |

Kentucky - NO₂

| Designated Area | Does Not Meet Primary Standards | Cannot Be Classified or Better Than National Standards |
|-----------------|---------------------------------|--|
| Statewide | | X |

Appendix B

Federal Register,
“Designation of Areas for Air Quality Planning
Purposes;
Attainment Status Designations: Florida, Kentucky,
and Tennessee,”
November 2, 1979

Dated: October 29, 1979.

Douglas M. Costle,
Administrator.

[FR Doc. 79-33981 Filed 11-1-79; 8:45 am]

BILLING CODE 6560-01-M

40 CFR Part 81

[FRL 1341-7]

Designation of Areas for Air Quality Planning Purposes; Attainment Status Designations: Florida, Kentucky, and Tennessee

AGENCY: U.S. Environmental Protection Agency.

ACTION: Final rule.

SUMMARY: The Clean Air Act Amendments of 1977 required that the Environmental Protection Agency (EPA) designate the attainment status of all areas within the States on a State-by-State, pollutant-by-pollutant basis. This was done on March 3, 1978 (43 FR 8962). Either the State or EPA can initiate changes in these designations, and such changes if finalized by the Administrator will replace extant designations.

The attainment status designation of Broward County, Florida for carbon monoxide is changed from nonattainment to unclassifiable. This change is made because the original designation was based on a biased monitor. Siting problems have since been corrected and additional monitoring sites for carbon monoxide are being established throughout the County to provide an extensive network for data collection in the future. Additionally, the designation of Escambia County, Florida, for ozone is changed from nonattainment to unclassifiable because of the recent change in the national ambient air quality standard for ozone and limited valid data available for Escambia County.

In Kentucky, the Boyd County sulfur dioxide nonattainment area is redefined to exclude the northernmost portion of the County. This is done on the basis of a recently completed monitoring study. Also, Davies, and McCracken Counties are redesignated as attainment for ozone because of the recent change in the national ambient standard for this pollutant.

The designation of the Rockwood, Tennessee, particulate nonattainment area is changed to unclassifiable on the basis that the original ambient data supporting the initial nonattainment designation appears to have been unduly influenced by reentrained road dust.

DATE: These actions are effective [date of publication.]

FOR FURTHER INFORMATION CONTACT: Brian Mitchell (Florida), Barry Gilbert (Kentucky), or Archie Lee (Tennessee) of the EPA Region IV Air Programs Branch, 345 Courtland Street, N.E., Atlanta, Georgia, 30308. Mr. Mitchell may be reached by telephone at 404/881-3286 (FTS 257-3286); Messrs. Gilbert and Lee, at 404/881-2864 (FTS 257-2864).

SUPPLEMENTARY INFORMATION: On March 3, 1978 (43 FR 8962 at 8981), the Administrator designated Broward County, Florida nonattainment for carbon monoxide on the basis of air quality data from a continuous monitor operating at 2102 N.E. 6th Street in Fort Lauderdale. This data showed violations of the 8-hour standard in 1976, 1977, and 1978. After the nonattainment designation was made, EPA determined that the data from this site was not representative of the ambient air quality in the area. The major problem was undue influence from a nearby I-95 overpass: the 14-foot high intake for the sampler was located only 300 feet from the 18-foot high overpass. The site has been moved to a location in the vicinity of U.S. 441 and State Road 842. The designation of Broward County is changed from nonattainment for CO to unclassifiable. If data gathered at the new location subsequently show a violation, the nonattainment designation will be restored.

Escambia County, Florida was designated nonattainment for ozone (photochemical oxidant) by the Administrator on March 3, 1978 (43 FR 8962 at 8981), on the basis of monitoring data from a site in Pensacola. In September of 1978, a validation of Florida's oxidant data was performed by representatives of EPA-Region IV and staff of the Florida Department of Environmental regulation. It was recommended that 1976 and 1977 data not be used because of insufficient calibration of the ozone monitor, and that the more recent 1978 data be used for planning strategies. However, due to the national ozone standard change, the subsequent change in methodologies for determining attainment status and design values, and the limited valid data available for Escambia County, the designation of Escambia County is changed from nonattainment to unclassifiable. As additional monitoring data becomes available, the area will be redesignated, if necessary, to reflect its true attainment/nonattainment status.

Also on March 3, 1978 (43 FR 8962 at 8997), the Administrator designated Boyd County, Kentucky, nonattainment for sulfur dioxide on the basis of

information supplied by the Kentucky Department for Natural Resources and Environmental Protection (KDNREP). Since that time, a monitoring study has been completed by Environmental Systems, Inc. for Ashland Oil Company. The results of this study show that the national ambient air quality standards for SO₂ have been attained in the northern part of the County for the last eight quarters. On March 9, 1979, the Secretary of the KDNREP formally requested that the nonattainment designation be made to apply only to that portion of Boyd County lying south of Universal Transverse Mercator Northing Line 4251 km. (zone 17).

The nonattainment area is redefined as the State requested. In his March 9, 1979, letter, the Secretary also asked that EPA change the ozone designation of Davies and McCracken Counties from nonattainment to attainment on the basis for three years of data showing no violation of the newly adopted NAAQS for ozone, 0.12 ppm. The designation of these two counties is changed as requested by the State.

A section of downtown Rockwood, Tennessee (Roane County) was designated nonattainment for TSP by the Administrator on March 3, 1978 (43 FR 8962 at 9036), on the basis of data from a monitor which showed violations of both primary and secondary standards for this pollutant. Subsequently, a microscopic analysis of filters from the original site was performed and the findings give some support to the State's position that the violations recorded there were caused by an undue influence of reentrained road dust. Accordingly, the State has asked that the area be redesignated unclassifiable until additional monitoring can provide a clearer idea of actual air quality. EPA is today making the change requested by the State.

These changes were announced as proposed rulemaking in the Federal Register of June 27, 1979 (44 FR 37515). No comments were received, however. These changes are effective immediately.

Under Executive Order 12044 EPA is required to judge whether a regulation is "significant" and therefore subject to the procedural requirements of the Order or whether it may follow other specialized development procedures. EPA labels these other regulations "specialized." I have reviewed this regulation and determined that it is a specialized regulation not subject to the procedural requirements of Executive Order 12044.

(Sections 107, 171, and 301 of the Clean Air Act (42 U.S.C. 7407, 7501, and 7601))

Dated: October 29, 1979.
 Douglas M. Costle,
 Administrator.

Part 81 of Chapter I, Title 40, Code of Federal Regulations, is amended as follows:

Subpart C—Section 107 Attainment Status Designations

1. In § 81.310, the attainment status designation table for ozone (O₃) is revised by deleting the entry for Escambia County, and the attainment status designation table for carbon monoxide is revised by deleting the entry for Broward County. As revised, these tables read as follows:

§ 81.310 Florida

* * * * *

Florida—O₃

| Designated area | Does not meet primary standards | Cannot be classified or better than national standards |
|--------------------------|---------------------------------|--|
| Broward County..... | X** | |
| Dade County..... | X** | |
| Duval County..... | X** | |
| Hillsborough County..... | X** | |
| Orange County..... | X** | |
| Palm Beach County..... | X** | |
| Pinellas County..... | X** | |
| Rest of State..... | | X** |

** EPA designation only.

Florida—CO

| Designated area | Does not meet primary standards | Cannot be classified or better than national standards |
|-----------------|---------------------------------|--|
| Statewide..... | | X** |

** EPA designation only.

2. In § 81.318, the attainment status designation table for SO₂ is revised by replacing the words "Boyd County" with the words "That portion of Boyd County south of UTM northing line 4251 km."

3. In § 81.318, the attainment status designation table for ozone in § 81.318 is revised by deleting Davies and McCracken Counties. As revised, this table reads as follows:

§ 81.318 Kentucky

* * * * *

Kentucky—O₃

| Designated area | Does not meet primary standards | Cannot be classified or better than national standards |
|---|---------------------------------|--|
| Boyd County..... | | X |
| Cincinnati Area—Boone, Kenton, and Campbell Counties..... | X | |
| Fayette County..... | X | |
| Henderson County..... | X | |
| Jefferson County..... | X | |
| Rest of State..... | | X |

* * * * *

4. In § 81.343, the attainment status designation table for TSP is revised by changing the designation of Roane County to read as follows:

§ 81.343 Tennessee.

Tennessee—TSP

| Designated area | Does not meet primary standards | Does not meet secondary standards | Cannot be classified | Better than national standards |
|---|---------------------------------|-----------------------------------|----------------------|--------------------------------|
| That portion of Roane County within a downtown section of Rockwood..... | | | | X |

* * * * *

[FR Doc. 79-33979 Filed 11-1-79; 8:45 am]
 BILLING CODE 6550-01-M

FEDERAL COMMUNICATIONS COMMISSION

47 CFR Parts 21 and 22

[FCC 79-595]

Domestic Public Fixed Radio Services and Public Mobile Radio Services

Correction

In FR Doc. 79-32026, published at page 60532, on Friday, October 19, 1979, the following corrections should be made:

1. On page 60534, in the second column, above "PART 21" heading, "Appendix—A" should be added;
2. On page 60573, in the third column, "§ 21.1 [Reserved]" and "§ 21.2 Definitions," should be corrected to read "§ 22.1 [Reserved]" and "§ 22.2 Definitions."

BILLING CODE 1505-01-M

INTERSTATE COMMERCE COMMISSION

49 CFR 1033

[S.O. 1182-A]

Substitution of Stock Cars for Boxcars

AGENCY: Interstate Commerce Commission.

ACTION: Service Order No. 1182-A.

SUMMARY: Revised Service Order No. 1182 authorized the Burlington Northern Inc. to substitute specially prepared stock cars for boxcars for shipments of grain originating on the BN in order to augment the available supply of cars suitable for grain movement.

DATE: Since no further emergency exists, Revised Service Order 1182 is vacated effective 11:59 p.m., October 31, 1979.

FOR FURTHER INFORMATION CONTACT: J. Kenneth Carter (202) 275-7840.

Decided October 25, 1979.

Upon further consideration of Revised Service Order No. 1182 (42 FR 3844, 37000; 43 FR 2395, 31015, 59074; 44 FR 36184), and good cause appearing therefore:

It is ordered:

§ 1033.1182 Substitution of stock cars for boxcars.

Revised Service Order No. 1182 is vacated effective 11:59 p.m., October 31, 1979.

(49 U.S.C. (10304-10305 and 11121-11126))

A copy of this order shall be served upon the Association of American Railroads, Car Service Division, as agent of the railroads subscribing to the car service and car hire agreement under the terms of that agreement and upon the American Short Line Railroad Association. Notice of this order shall be given to the general public by depositing a copy in the Office of the Secretary of the Commission, at Washington, D.C., and by filing a copy with the Director, Office of the Federal Register.

By the Commission, Railroad Service Board, members Joel E. Burns, Robert S. Turkington, and John R. Michael.
 Agatha L. Mergenovich,
 Secretary.

[FR Doc. 79-33990 Filed 11-1-79; 8:45 am]
 BILLING CODE 7035-01-M

Appendix C

AQS/USEPA Database,
“AMP450 Ambient SO₂ Data Request,
1975 through 2004 for Tri-State area counties”

UNITES STATES ENVIRONMENTAL PROTECTION AGENCY
 AIR QUALITY SYSTEM

QUICKLOOK CRITERIA PARAMETERS

Report Request ID: 130073

Report Code: AMP450

Apr. 20, 2004

GEOGRAPHIC SELECTIONS

| State | County | Site | Parameter | POC | City | AQCR | UAR | MSA | CMSA | EPA
Region | Zip Code | Method | Duration | Begin Date | End Date |
|-------|--------|------|-----------|-----|------|------|-----|-----|------|---------------|----------|--------|----------|------------|----------|
| 21 | 019 | | 42401 | | | | | | | | | | | 1975 | 2004 |

SELECTED OPTIONS

| Option Type | Option Value |
|-------------------|----------------------------|
| EVENTS PROCESSING | EXCLUDE EXCEPTIONAL EVENTS |

SORT ORDER

| Order | Column |
|-------|----------------|
| 1 | PARAMETER_CODE |
| 2 | STATE_CODE |
| 3 | COUNTY_CODE |
| 4 | SITE_ID |
| 5 | POC |
| 6 | DATES |

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
AIR QUALITY SYSTEM
QUICK LOOK REPORT (AMP450)

Apr. 20, 2004

EXCEPTIONAL DATA TYPES

| EDT | DESCRIPTION |
|-----|--|
| 0 | NO EVENTS |
| 1 | EVENTS EXCLUDED |
| 2 | EVENTS INCLUDED |
| 3 | EXCEPTIONAL EVENTS EXCLUDED |
| 4 | NATURAL EVENTS EXCLUDED |
| 5 | EVENTS WITH CONCURRENCE EXCLUDED |
| 6 | EXCEPTIONAL EVENTS WITH CONCURRENCE EXCLUDED |
| 7 | NATURAL EVENTS WITH CONCURRENCE EXCLUDED |

Note: The * indicates that the mean does not satisfy summary criteria.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
 AIR QUALITY SYSTEM
 QUICK LOOK REPORT (AMP450)

Apr. 20, 2004

Sulfur Dioxide (42401)

KENTUCKY

PPM (007)

| SITE ID | P
O
C | REP
ORG | CITY | COUNTY | ADDRESS | YEAR | METH | #
OBS | 1ST | 2ND | #OBS
>0.14 | 1ST | 2ND | #OBS
>0.5 | 1ST | 2ND | ARITH
MEANCERT | EDT |
|-------------|-------------|------------|---------|--------|-------------|------|------|----------|--------------|--------------|---------------|-------------|-------------|--------------|-------------|-------------|-------------------|-----|
| | | | | | | | | | MAX
24-HR | MAX
24-HR | | MAX
3-HR | MAX
3-HR | | MAX
1-HR | MAX
1-HR | | |
| 21-019-0008 | 1 | 0584 | ASHLAND | BOYD | 23RD & LEXI | 1975 | 014 | 7893 | .053 | .044 | 0 | .144 | .136 | 0 | .209 | .187 | .0109 | 0 |
| 21-019-0008 | 1 | 0584 | ASHLAND | BOYD | 23RD & LEXI | 1976 | 014 | 6893 | .051 | .049 | 0 | .135 | .130 | 0 | .185 | .170 | .0162 | 0 |
| 21-019-0008 | 1 | 0584 | ASHLAND | BOYD | 23RD & LEXI | 1977 | 014 | 6468 | .062 | .054 | 0 | .137 | .102 | 0 | .156 | .156 | .0129* | 0 |
| 21-019-0008 | 1 | 0584 | ASHLAND | BOYD | 23RD & LEXI | 1978 | 014 | 6518 | .066 | .055 | 0 | .127 | .119 | 0 | .156 | .153 | .0144* | 0 |
| 21-019-0010 | 1 | | ASHLAND | BOYD | CLAY SCHOOL | 1979 | 014 | 5489 | .094 | .037 | 0 | .214 | .176 | 0 | .226 | .225 | .0079* | 0 |
| 21-019-0010 | 1 | | ASHLAND | BOYD | CLAY SCHOOL | 1980 | 014 | 5443 | .099 | .056 | 0 | .191 | .178 | 0 | .205 | .205 | .0097* | 0 |
| 21-019-0010 | 1 | 0584 | ASHLAND | BOYD | CLAY SCHOOL | 1981 | 014 | 5920 | .043 | .028 | 0 | .090 | .088 | 0 | .132 | .102 | .0078* | 0 |
| 21-019-0010 | 1 | 0584 | ASHLAND | BOYD | CLAY SCHOOL | 1982 | 020 | 7081 | .041 | .041 | 0 | .182 | .129 | 0 | .271 | .163 | .0069 | 0 |
| 21-019-0010 | 1 | 0584 | ASHLAND | BOYD | CLAY SCHOOL | 1983 | 020 | 7909 | .044 | .036 | 0 | .266 | .204 | 0 | .460 | .400 | .0076 | 0 |
| 21-019-0010 | 1 | 0584 | ASHLAND | BOYD | CLAY SCHOOL | 1984 | 020 | 8360 | .047 | .046 | 0 | .125 | .110 | 0 | .236 | .228 | .0090 | 0 |
| 21-019-0010 | 1 | 0584 | ASHLAND | BOYD | CLAY SCHOOL | 1985 | 020 | 8174 | .051 | .041 | 0 | .126 | .116 | 0 | .211 | .166 | .0088 | 0 |
| 21-019-0010 | 1 | 0584 | ASHLAND | BOYD | CLAY SCHOOL | 1986 | 020 | 8111 | .058 | .043 | 0 | .150 | .142 | 0 | .218 | .182 | .0083 | 0 |
| 21-019-0010 | 1 | 0584 | ASHLAND | BOYD | CLAY SCHOOL | 1987 | 020 | 8167 | .065 | .060 | 0 | .211 | .165 | 0 | .282 | .265 | .0095 | 0 |
| 21-019-0010 | 1 | 0584 | ASHLAND | BOYD | CLAY SCHOOL | 1988 | 020 | 8217 | .088 | .057 | 0 | .166 | .155 | 0 | .210 | .189 | .0088 | 0 |
| 21-019-0010 | 1 | 0584 | ASHLAND | BOYD | CLAY SCHOOL | 1989 | 020 | 8333 | .075 | .064 | 0 | .130 | .126 | 0 | .196 | .168 | .0097 | 0 |
| 21-019-0010 | 1 | 0584 | ASHLAND | BOYD | CLAY SCHOOL | 1990 | 020 | 7825 | .036 | .033 | 0 | .109 | .089 | 0 | .184 | .168 | .0068 | Y 0 |
| 21-019-0010 | 1 | 0584 | ASHLAND | BOYD | CLAY SCHOOL | 1991 | 000 | 8354 | .065 | .044 | 0 | .115 | .114 | 0 | .177 | .168 | .0086 | Y 0 |
| 21-019-0010 | 1 | 0584 | ASHLAND | BOYD | CLAY SCHOOL | 1992 | 039 | 8312 | .049 | .048 | 0 | .129 | .114 | 0 | .181 | .160 | .0078 | 0 |
| 21-019-0010 | 1 | 0584 | ASHLAND | BOYD | CLAY SCHOOL | 1993 | 039 | 2205 | .048 | .036 | 0 | .104 | .097 | 0 | .109 | .106 | .0104 | Y 0 |
| 21-019-0015 | 1 | 0584 | ASHLAND | BOYD | 32ND & RAIL | 1993 | 039 | 6119 | .040 | .040 | 0 | .101 | .096 | 0 | .171 | .146 | .0096 | Y 0 |
| 21-019-0015 | 1 | 0584 | ASHLAND | BOYD | 32ND & RAIL | 1994 | 039 | 8086 | .058 | .053 | 0 | .250 | .160 | 0 | .342 | .340 | .0115 | Y 0 |
| 21-019-0015 | 1 | 0584 | ASHLAND | BOYD | 32ND & RAIL | 1995 | 039 | 8322 | .059 | .048 | 0 | .236 | .141 | 0 | .353 | .312 | .0090 | Y 0 |
| 21-019-0015 | 1 | 0584 | ASHLAND | BOYD | 32ND & RAIL | 1996 | 039 | 8110 | .071 | .057 | 0 | .101 | .101 | 0 | .171 | .169 | .0086 | Y 0 |
| 21-019-0015 | 1 | 0584 | ASHLAND | BOYD | 32ND & RAIL | 1997 | 039 | 8060 | .037 | .034 | 0 | .106 | .074 | 0 | .165 | .136 | .0075 | Y 0 |
| 21-019-0015 | 1 | 0584 | ASHLAND | BOYD | 32ND & RAIL | 1998 | 000 | 6120 | .042 | .038 | 0 | .124 | .116 | 0 | .215 | .213 | .0092* | Y 0 |
| 21-019-0015 | 1 | 0584 | ASHLAND | BOYD | 32ND & RAIL | 1999 | 100 | 8313 | .026 | .024 | 0 | .078 | .078 | 0 | .141 | .133 | .0079 | Y 0 |
| 21-019-0015 | 1 | 0584 | ASHLAND | BOYD | 32ND & RAIL | 2000 | 100 | 8269 | .022 | .020 | 0 | .072 | .065 | 0 | .100 | .096 | .0074 | Y 0 |
| 21-019-0015 | 1 | 0584 | ASHLAND | BOYD | 32ND & RAIL | 2001 | 100 | 5273 | .029 | .022 | 0 | .076 | .059 | 0 | .106 | .102 | .0058 | 0 |
| 21-019-0017 | 1 | 0584 | ASHLAND | BOYD | 2924 HOLT S | 2001 | 100 | 3288 | .015 | .013 | 0 | .060 | .038 | 0 | .081 | .073 | .0045 | 0 |
| 21-019-0017 | 1 | 0584 | ASHLAND | BOYD | 2924 HOLT S | 2002 | 100 | 8704 | .023 | .020 | 0 | .047 | .041 | 0 | .063 | .056 | .0039 | Y 0 |
| 21-019-0017 | 1 | 0584 | ASHLAND | BOYD | 2924 HOLT S | 2003 | 100 | 8616 | .034 | .023 | 0 | .091 | .063 | 0 | .126 | .113 | .0038 | 0 |

Note: The * indicates that the mean does not satisfy summary criteria.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
 AIR QUALITY SYSTEM
 QUICK LOOK REPORT (AMP450)

Apr. 20, 2004

Sulfur Dioxide (42401)

KENTUCKY

PPM (007)

| SITE ID | P
O
C | REP
ORG | CITY | COUNTY | ADDRESS | YEAR | METH | #
OBS | 1ST | 2ND | #OBS
>0.14 | 1ST | 2ND | #OBS
>0.5 | 1ST | 2ND | ARITH
MEANCERT | EDT |
|-------------|-------------|------------|--------------|--------|-------------|------|------|----------|--------------|--------------|---------------|-------------|-------------|--------------|-------------|-------------|-------------------|-----|
| | | | | | | | | | MAX
24-HR | MAX
24-HR | | MAX
3-HR | MAX
3-HR | | MAX
1-HR | MAX
1-HR | | |
| 21-019-0017 | 1 | 0584 | ASHLAND | BOYD | 2924 HOLT S | 2004 | 100 | 1419 | .018 | .015 | 0 | .039 | .037 | 0 | .049 | .044 | .0062* | 0 |
| 21-019-1002 | 1 | 0584 | CATLETTSBURG | BOYD | WALTER BLAC | 1981 | 014 | 2016 | .121 | .100 | 0 | .300 | .296 | 0 | .409 | .391 | .0173* | 0 |
| 21-019-1002 | 1 | 0584 | CATLETTSBURG | BOYD | WALTER BLAC | 1982 | 000 | 7157 | .042 | .035 | 0 | .106 | .105 | 0 | .258 | .162 | .0059 | 0 |
| 21-019-1002 | 1 | 0584 | CATLETTSBURG | BOYD | WALTER BLAC | 1983 | 020 | 8211 | .008 | .008 | 0 | .046 | .014 | 0 | .050 | .045 | .0017 | 0 |
| 21-019-1002 | 1 | 0584 | CATLETTSBURG | BOYD | WALTER BLAC | 1984 | 020 | 8135 | .006 | .006 | 0 | .016 | .012 | 0 | .029 | .020 | .0014 | 0 |
| 21-019-1002 | 1 | 0584 | CATLETTSBURG | BOYD | WALTER BLAC | 1985 | 020 | 7120 | .007 | .006 | 0 | .034 | .008 | 0 | .080 | .050 | .0011 | 0 |
| 21-019-1003 | 1 | 0584 | CATLETTSBURG | BOYD | COOPER SCH. | 1986 | 020 | 6982 | .064 | .046 | 0 | .366 | .150 | 0 | .475 | .465 | .0094 | 0 |
| 21-019-1003 | 1 | 0584 | CATLETTSBURG | BOYD | COOPER SCH. | 1987 | 020 | 7892 | .071 | .056 | 0 | .192 | .179 | 0 | .380 | .270 | .0121 | 0 |
| 21-019-1003 | 1 | 0584 | CATLETTSBURG | BOYD | COOPER SCH. | 1988 | 020 | 8364 | .073 | .060 | 0 | .130 | .119 | 0 | .182 | .156 | .0115 | 0 |
| 21-019-1003 | 1 | 0584 | CATLETTSBURG | BOYD | COOPER SCH. | 1989 | 020 | 8020 | .074 | .056 | 0 | .135 | .130 | 0 | .196 | .170 | .0101 | 0 |
| 21-019-1003 | 1 | 0584 | CATLETTSBURG | BOYD | COOPER SCH. | 1990 | 020 | 7899 | .065 | .062 | 0 | .303 | .193 | 0 | .594 | .290 | .0091 | Y 0 |
| 21-019-1003 | 1 | 0584 | CATLETTSBURG | BOYD | COOPER SCH. | 1991 | 020 | 7368 | .054 | .038 | 0 | .108 | .088 | 0 | .177 | .162 | .0095 | Y 0 |
| 21-019-1003 | 1 | 0584 | CATLETTSBURG | BOYD | COOPER SCH. | 1992 | 039 | 8361 | .054 | .037 | 0 | .104 | .102 | 0 | .221 | .137 | .0090 | 0 |
| 21-019-1003 | 1 | 0584 | CATLETTSBURG | BOYD | COOPER SCH. | 1993 | 039 | 8187 | .054 | .053 | 0 | .139 | .106 | 0 | .238 | .134 | .0118 | Y 0 |
| 21-019-1003 | 1 | 0584 | CATLETTSBURG | BOYD | COOPER SCH. | 1994 | 039 | 8344 | .094 | .050 | 0 | .153 | .150 | 0 | .291 | .272 | .0107 | Y 0 |
| 21-019-1003 | 1 | 0584 | CATLETTSBURG | BOYD | COOPER SCH. | 1995 | 039 | 8075 | .037 | .035 | 0 | .074 | .073 | 0 | .111 | .106 | .0082 | Y 0 |
| 21-019-1003 | 1 | 0584 | CATLETTSBURG | BOYD | COOPER SCH. | 1996 | 039 | 8318 | .042 | .028 | 0 | .067 | .050 | 0 | .103 | .070 | .0075 | Y 0 |
| 21-019-1003 | 1 | 0584 | CATLETTSBURG | BOYD | COOPER SCH. | 1997 | 039 | 8314 | .029 | .028 | 0 | .058 | .053 | 0 | .082 | .078 | .0069 | Y 0 |
| 21-019-1003 | 1 | 0584 | CATLETTSBURG | BOYD | COOPER SCH. | 1998 | 039 | 8252 | .027 | .026 | 0 | .063 | .063 | 0 | .084 | .081 | .0074 | Y 0 |
| 21-019-1003 | 1 | 0584 | CATLETTSBURG | BOYD | COOPER SCH. | 1999 | 039 | 8322 | .029 | .024 | 0 | .077 | .067 | 0 | .126 | .097 | .0077 | Y 0 |

Note: The * indicates that the mean does not satisfy summary criteria.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
AIR QUALITY SYSTEM
QUICK LOOK REPORT (AMP450)

Apr. 20, 2004

METHODS USED IN THIS REPORT

| PARAMETER | METHOD
CODE | COLLECTION METHOD | ANALYSIS METHOD |
|-----------|----------------|---------------------------|------------------------------------|
| | 000 | MULTIPLE METHODS | |
| 42401 | 014 | INSTRUMENTAL | COULOMETRIC |
| 42401 | 020 | INSTRUMENTAL | PULSED FLUORESCENT |
| 42401 | 039 | INSTRUMENTAL | ULTRA VIOLET STIMULATED FLUORESCNC |
| 42401 | 050 | ANNULAR DIFFUSION DENUDER | ION CHROMATOGRAPH |
| 42401 | 091 | GAS-BUBBLER | PARAROSANILINE-SULFAMIC ACID |
| 42401 | 097 | GAS-BUBBLER | PARAROSANILINE-SULFAMIC TEMP. CONT |
| 42401 | 100 | INSTRUMENTAL | ULTRAVIOLET FLUORESCENCE |

Note: The * indicates that the mean does not satisfy summary criteria.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
AIR QUALITY SYSTEM
QUICK LOOK REPORT (AMP450)

Apr. 20, 2004

REPORTING ORGANIZATIONS USED IN THIS REPORT

| REPORTING ORGANIZATION CODE | AGENCY DESCRIPTION |
|-----------------------------|---------------------------------------|
| 0584 | KENTUCKY DIVISION FOR AIR QUALITY |
| 1106 | US EPA NATIONAL EXPOSURE RESEARCH LAB |

Note: The * indicates that the mean does not satisfy summary criteria.

UNITES STATES ENVIRONMENTAL PROTECTION AGENCY
 AIR QUALITY SYSTEM

QUICKLOOK CRITERIA PARAMETERS

Report Request ID: 129655

Report Code: AMP450

Apr. 16, 2004

GEOGRAPHIC SELECTIONS

| State | County | Site | Parameter | POC | City | AQCR | UAR | MSA | CMSA | EPA Region | Zip Code | Method | Duration | Begin Date | End Date |
|-------|--------|------|-----------|-----|------|------|-----|-----|------|------------|----------|--------|----------|------------|----------|
| 39 | 087 | | | | | | | | | | | | | | |
| 54 | 011 | | | | | | | | | | | | | | |
| 54 | 099 | | | | | | | | | | | | | | |

PROTOCOL SELECTIONS

| Parameter Classification | Parameter | Method | Duration |
|--------------------------|-----------|--------|----------|
| CRITERIA | 42401 | | |

SELECTED OPTIONS

| Option Type | Option Value |
|-------------------|----------------------------|
| EVENTS PROCESSING | EXCLUDE EXCEPTIONAL EVENTS |

SORT ORDER

| Order | Column |
|-------|----------------|
| 1 | PARAMETER_CODE |
| 2 | STATE_CODE |
| 3 | COUNTY_CODE |
| 4 | SITE_ID |
| 5 | POC |
| 6 | DATES |

GLOBAL DATES

| Start Date | End Date |
|------------|----------|
| 1975 | 2004 |

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
AIR QUALITY SYSTEM
QUICK LOOK REPORT (AMP450)

Apr. 16, 2004

EXCEPTIONAL DATA TYPES

| EDT | DESCRIPTION |
|-----|--|
| 0 | NO EVENTS |
| 1 | EVENTS EXCLUDED |
| 2 | EVENTS INCLUDED |
| 3 | EXCEPTIONAL EVENTS EXCLUDED |
| 4 | NATURAL EVENTS EXCLUDED |
| 5 | EVENTS WITH CONCURRENCE EXCLUDED |
| 6 | EXCEPTIONAL EVENTS WITH CONCURRENCE EXCLUDED |
| 7 | NATURAL EVENTS WITH CONCURRENCE EXCLUDED |

Note: The * indicates that the mean does not satisfy summary criteria.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
 AIR QUALITY SYSTEM
 QUICK LOOK REPORT (AMP450)

Apr. 16, 2004

Sulfur Dioxide (42401)

OHIO

PPM (007)

| SITE ID | P
O
C | REP
ORG | CITY | COUNTY | ADDRESS | YEAR | METH | #
OBS | 1ST | 2ND | #OBS
>0.14 | 1ST | 2ND | #OBS
>0.5 | 1ST | 2ND | ARITH
MEANCERT | EDT |
|-------------|-------------|------------|-------------|----------|-------------|------|------|----------|--------------|--------------|---------------|-------------|-------------|--------------|-------------|-------------|-------------------|-----|
| | | | | | | | | | MAX
24-HR | MAX
24-HR | | MAX
3-HR | MAX
3-HR | | MAX
1-HR | MAX
1-HR | | |
| 39-087-0006 | 1 | | IRONTON | LAWRENCE | 2120 SO. 8T | 1977 | 014 | 4485 | .043 | .040 | 0 | .100 | .095 | 0 | .266 | .182 | .0102* | 0 |
| 39-087-0006 | 1 | | IRONTON | LAWRENCE | 2120 SO. 8T | 1978 | 014 | 3982 | .066 | .058 | 0 | .178 | .147 | 0 | .226 | .184 | .0142* | 0 |
| 39-087-0006 | 1 | | IRONTON | LAWRENCE | 2120 SO. 8T | 1979 | 014 | 5076 | .045 | .034 | 0 | .140 | .124 | 0 | .240 | .180 | .0102* | 0 |
| 39-087-0006 | 1 | | IRONTON | LAWRENCE | 2120 SO. 8T | 1980 | 014 | 3134 | .049 | .049 | 0 | .085 | .075 | 0 | .160 | .145 | .0090* | 0 |
| 39-087-0006 | 1 | 0880 | IRONTON | LAWRENCE | 2120 SO. 8T | 1981 | 014 | 6065 | .043 | .039 | 0 | .102 | .095 | 0 | .130 | .130 | .0125* | 0 |
| 39-087-0006 | 1 | 0880 | IRONTON | LAWRENCE | 2120 SO. 8T | 1982 | 014 | 7552 | .049 | .041 | 0 | .151 | .115 | 0 | .170 | .170 | .0088 | 0 |
| 39-087-0006 | 1 | 0880 | IRONTON | LAWRENCE | 2120 SO. 8T | 1983 | 014 | 7636 | .038 | .037 | 0 | .121 | .112 | 0 | .160 | .135 | .0082 | 0 |
| 39-087-0006 | 1 | 0880 | IRONTON | LAWRENCE | 2120 SO. 8T | 1984 | 000 | 6945 | .056 | .053 | 0 | .157 | .129 | 0 | .222 | .143 | .0099 | 0 |
| 39-087-0006 | 1 | 0880 | IRONTON | LAWRENCE | 2120 SO. 8T | 1985 | 023 | 6376 | .061 | .058 | 0 | .167 | .095 | 0 | .193 | .160 | .0101* | 0 |
| 39-087-0006 | 1 | 0880 | IRONTON | LAWRENCE | 2120 SO. 8T | 1986 | 023 | 8289 | .052 | .050 | 0 | .127 | .102 | 0 | .155 | .130 | .0111 | 0 |
| 39-087-0006 | 1 | 0880 | IRONTON | LAWRENCE | 2120 SO. 8T | 1987 | 023 | 7334 | .075 | .067 | 0 | .141 | .122 | 0 | .187 | .187 | .0147 | 0 |
| 39-087-0006 | 1 | 0880 | IRONTON | LAWRENCE | 2120 SO. 8T | 1988 | 023 | 319 | .038 | .027 | 0 | .062 | .057 | 0 | .080 | .077 | .0203* | 0 |
| 39-087-0006 | 2 | 0880 | IRONTON | LAWRENCE | 2120 SO. 8T | 1997 | 061 | 2113 | .010 | .009 | 0 | .030 | .025 | 0 | .049 | .042 | .0019 | Y 0 |
| 39-087-0006 | 2 | 0880 | IRONTON | LAWRENCE | 2120 SO. 8T | 1998 | 061 | 8376 | .025 | .020 | 0 | .051 | .045 | 0 | .066 | .061 | .0039 | Y 0 |
| 39-087-0006 | 2 | 0880 | IRONTON | LAWRENCE | 2120 SO. 8T | 1999 | 061 | 8392 | .033 | .025 | 0 | .071 | .064 | 0 | .085 | .085 | .0048 | Y 0 |
| 39-087-0006 | 2 | 0880 | IRONTON | LAWRENCE | 2120 SO. 8T | 2000 | 061 | 8348 | .035 | .025 | 0 | .071 | .064 | 0 | .085 | .085 | .0053 | Y 0 |
| 39-087-0006 | 2 | 0880 | IRONTON | LAWRENCE | 2120 SO. 8T | 2001 | 061 | 8247 | .027 | .027 | 0 | .055 | .050 | 0 | .074 | .071 | .0051 | 0 |
| 39-087-0006 | 2 | 0880 | IRONTON | LAWRENCE | 2120 SO. 8T | 2002 | 061 | 8334 | .027 | .022 | 0 | .072 | .060 | 0 | .087 | .074 | .0050 | Y 0 |
| 39-087-0006 | 2 | 0880 | IRONTON | LAWRENCE | 2120 SO. 8T | 2003 | 061 | 8359 | .031 | .020 | 0 | .041 | .040 | 0 | .061 | .043 | .0040 | 0 |
| 39-087-0006 | 2 | 0880 | IRONTON | LAWRENCE | 2120 SO. 8T | 2004 | 061 | 1374 | .018 | .017 | 0 | .046 | .040 | 0 | .050 | .047 | .0073* | 0 |
| 39-087-1009 | 1 | 0880 | SOUTH POINT | LAWRENCE | SAND & SOLI | 1988 | 023 | 2938 | .027 | .026 | 0 | .067 | .056 | 0 | .141 | .087 | .0056 | 0 |
| 39-087-1009 | 1 | 0880 | SOUTH POINT | LAWRENCE | SAND & SOLI | 1989 | 023 | 5725 | .068 | .056 | 0 | .131 | .128 | 0 | .178 | .151 | .0082* | 0 |
| 39-087-1009 | 1 | 0880 | SOUTH POINT | LAWRENCE | SAND & SOLI | 1990 | 039 | 7945 | .037 | .030 | 0 | .078 | .077 | 0 | .137 | .123 | .0060 | Y 0 |
| 39-087-1009 | 1 | 0880 | SOUTH POINT | LAWRENCE | SAND & SOLI | 1991 | 000 | 8244 | .072 | .046 | 0 | .125 | .123 | 0 | .190 | .180 | .0058 | 0 |
| 39-087-1009 | 1 | 0880 | SOUTH POINT | LAWRENCE | SAND & SOLI | 1992 | 039 | 8361 | .035 | .024 | 0 | .101 | .093 | 0 | .121 | .121 | .0045 | Y 0 |
| 39-087-1009 | 1 | 0880 | SOUTH POINT | LAWRENCE | SAND & SOLI | 1993 | 039 | 8094 | .042 | .033 | 0 | .083 | .078 | 0 | .106 | .104 | .0060 | Y 0 |
| 39-087-1009 | 1 | 0880 | SOUTH POINT | LAWRENCE | SAND & SOLI | 1994 | 039 | 8329 | .077 | .047 | 0 | .160 | .148 | 0 | .202 | .170 | .0055 | Y 0 |
| 39-087-1009 | 1 | 0880 | SOUTH POINT | LAWRENCE | SAND & SOLI | 1995 | 039 | 8332 | .035 | .027 | 0 | .081 | .076 | 0 | .155 | .148 | .0053 | Y 0 |
| 39-087-1009 | 1 | 0880 | SOUTH POINT | LAWRENCE | SAND & SOLI | 1996 | 039 | 8412 | .018 | .018 | 0 | .043 | .042 | 0 | .056 | .051 | .0033 | Y 0 |
| 39-087-1009 | 1 | 0880 | SOUTH POINT | LAWRENCE | SAND & SOLI | 1997 | 039 | 6279 | .024 | .024 | 0 | .050 | .041 | 0 | .068 | .057 | .0036 | Y 0 |

Note: The * indicates that the mean does not satisfy summary criteria.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
 AIR QUALITY SYSTEM
 QUICK LOOK REPORT (AMP450)

Apr. 16, 2004

Sulfur Dioxide (42401)

WEST VIRGINIA

PPM (007)

| SITE ID | P
O
C | REP
ORG | CITY | COUNTY | ADDRESS | YEAR | METH | #
OBS | 1ST | 2ND | #OBS
>0.14 | 1ST | 2ND | #OBS
>0.5 | 1ST | 2ND | ARITH | |
|-------------|-------------|------------|------------|--------|-------------|------|------|----------|--------------|--------------|---------------|-------------|-------------|--------------|-------------|-------------|--------|-------------|
| | | | | | | | | | MAX
24-HR | MAX
24-HR | | MAX
3-HR | MAX
3-HR | | MAX
1-HR | MAX
1-HR | MEAN | CERT
EDT |
| 54-011-0006 | 1 | 1150 | HUNTINGTON | CABELL | MARSHALL UN | 1982 | 023 | 7727 | .050 | .046 | 0 | .143 | .134 | 0 | .163 | .151 | .0083 | 0 |
| 54-011-0006 | 1 | 1150 | HUNTINGTON | CABELL | MARSHALL UN | 1983 | 023 | 8380 | .049 | .048 | 0 | .118 | .113 | 0 | .191 | .145 | .0081 | 0 |
| 54-011-0006 | 1 | 1150 | HUNTINGTON | CABELL | MARSHALL UN | 1984 | 023 | 8479 | .055 | .036 | 0 | .178 | .151 | 0 | .270 | .237 | .0089 | 0 |
| 54-011-0006 | 1 | 1150 | HUNTINGTON | CABELL | MARSHALL UN | 1985 | 023 | 8019 | .045 | .038 | 0 | .110 | .093 | 0 | .128 | .116 | .0082 | 0 |
| 54-011-0006 | 1 | 1150 | HUNTINGTON | CABELL | MARSHALL UN | 1986 | 023 | 8527 | .048 | .046 | 0 | .115 | .113 | 0 | .160 | .139 | .0098 | 0 |
| 54-011-0006 | 1 | 1150 | HUNTINGTON | CABELL | MARSHALL UN | 1987 | 023 | 8449 | .061 | .050 | 0 | .156 | .113 | 0 | .201 | .169 | .0101 | 0 |
| 54-011-0006 | 1 | 1150 | HUNTINGTON | CABELL | MARSHALL UN | 1988 | 023 | 8712 | .056 | .049 | 0 | .141 | .137 | 0 | .262 | .217 | .0094 | Y 0 |
| 54-011-0006 | 1 | 1150 | HUNTINGTON | CABELL | MARSHALL UN | 1989 | 023 | 8291 | .052 | .051 | 0 | .170 | .139 | 0 | .244 | .180 | .0080 | Y 0 |
| 54-011-0006 | 1 | 1150 | HUNTINGTON | CABELL | MARSHALL UN | 1990 | 039 | 7746 | .082 | .080 | 0 | .162 | .146 | 0 | .166 | .163 | .0088 | Y 0 |
| 54-011-0006 | 1 | 1150 | HUNTINGTON | CABELL | MARSHALL UN | 1991 | 039 | 8384 | .046 | .040 | 0 | .133 | .116 | 0 | .214 | .208 | .0086 | Y 0 |
| 54-011-0006 | 1 | 1150 | HUNTINGTON | CABELL | MARSHALL UN | 1992 | 039 | 8194 | .046 | .031 | 0 | .154 | .126 | 0 | .195 | .161 | .0078 | Y 0 |
| 54-011-0006 | 1 | 1150 | HUNTINGTON | CABELL | MARSHALL UN | 1993 | 000 | 8473 | .048 | .039 | 0 | .107 | .087 | 0 | .153 | .152 | .0076 | Y 0 |
| 54-011-0006 | 1 | 1150 | HUNTINGTON | CABELL | MARSHALL UN | 1994 | 039 | 8645 | .063 | .044 | 0 | .196 | .144 | 0 | .338 | .276 | .0081 | Y 0 |
| 54-011-0006 | 1 | 1150 | HUNTINGTON | CABELL | MARSHALL UN | 1995 | 039 | 8581 | .023 | .019 | 0 | .050 | .037 | 0 | .067 | .059 | .0063 | Y 0 |
| 54-011-0006 | 1 | 1150 | HUNTINGTON | CABELL | MARSHALL UN | 1996 | 039 | 8690 | .024 | .023 | 0 | .052 | .049 | 0 | .081 | .074 | .0077 | Y 0 |
| 54-011-0006 | 1 | 1150 | HUNTINGTON | CABELL | MARSHALL UN | 1997 | 039 | 8624 | .032 | .028 | 0 | .133 | .063 | 0 | .149 | .131 | .0055 | Y 0 |
| 54-011-0006 | 1 | 1150 | HUNTINGTON | CABELL | MARSHALL UN | 1998 | 039 | 8646 | .026 | .023 | 0 | .057 | .052 | 0 | .098 | .083 | .0050 | Y 0 |
| 54-011-0006 | 1 | 1150 | HUNTINGTON | CABELL | MARSHALL UN | 1999 | 039 | 8520 | .022 | .019 | 0 | .051 | .050 | 0 | .063 | .063 | .0050 | Y 0 |
| 54-011-0006 | 1 | 1150 | HUNTINGTON | CABELL | MARSHALL UN | 2000 | 039 | 8693 | .028 | .028 | 0 | .048 | .039 | 0 | .072 | .066 | .0064 | Y 0 |
| 54-011-0006 | 1 | 1150 | HUNTINGTON | CABELL | MARSHALL UN | 2001 | 039 | 8310 | .026 | .022 | 0 | .062 | .052 | 0 | .081 | .068 | .0042 | 0 |
| 54-011-0006 | 1 | 1150 | HUNTINGTON | CABELL | MARSHALL UN | 2002 | 039 | 8601 | .030 | .022 | 0 | .048 | .047 | 0 | .059 | .050 | .0057 | Y 0 |
| 54-011-0006 | 1 | 1150 | HUNTINGTON | CABELL | MARSHALL UN | 2003 | 039 | 8620 | .025 | .022 | 0 | .050 | .040 | 0 | .062 | .054 | .0052 | 0 |
| 54-099-0001 | 1 | 1150 | KENOVA | WAYNE | POWELL RESI | 1988 | 023 | 2212 | .039 | .036 | 0 | .132 | .082 | 0 | .192 | .175 | .0109 | 0 |
| 54-099-0001 | 1 | 1150 | KENOVA | WAYNE | POWELL RESI | 1989 | 023 | 8222 | .162 | .085 | 1 | .234 | .224 | 0 | .283 | .246 | .0141 | 0 |
| 54-099-0001 | 1 | 1150 | KENOVA | WAYNE | POWELL RESI | 1990 | 039 | 6251 | .058 | .052 | 0 | .125 | .088 | 0 | .177 | .141 | .0131* | Y 0 |
| 54-099-0001 | 1 | 1150 | KENOVA | WAYNE | POWELL RESI | 1991 | 039 | 8440 | .042 | .042 | 0 | .118 | .095 | 0 | .178 | .177 | .0113 | Y 0 |
| 54-099-0001 | 1 | 1150 | KENOVA | WAYNE | POWELL RESI | 1992 | 039 | 8168 | .041 | .039 | 0 | .114 | .098 | 0 | .237 | .181 | .0114 | Y 0 |
| 54-099-0001 | 1 | 1150 | KENOVA | WAYNE | POWELL RESI | 1993 | 039 | 8535 | .049 | .046 | 0 | .089 | .076 | 0 | .095 | .091 | .0106 | Y 0 |
| 54-099-0001 | 1 | 1150 | KENOVA | WAYNE | POWELL RESI | 1994 | 039 | 3715 | .067 | .047 | 0 | .162 | .140 | 0 | .194 | .156 | .0148 | Y 0 |
| 54-099-0002 | 1 | 1150 | KENOVA | WAYNE | CENTENNIAL | 1988 | 023 | 2284 | .071 | .058 | 0 | .149 | .138 | 0 | .225 | .197 | .0168 | 0 |
| 54-099-0002 | 1 | 1150 | KENOVA | WAYNE | CENTENNIAL | 1989 | 023 | 8497 | .088 | .076 | 0 | .202 | .151 | 0 | .376 | .372 | .0172 | 0 |

Note: The * indicates that the mean does not satisfy summary criteria.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
 AIR QUALITY SYSTEM
 QUICK LOOK REPORT (AMP450)

Apr. 16, 2004

Sulfur Dioxide (42401)

WEST VIRGINIA

PPM (007)

| SITE ID | P
O
C | REP
ORG | CITY | COUNTY | ADDRESS | YEAR | METH | #
OBS | 1ST | 2ND | #OBS
>0.14 | 1ST | 2ND | #OBS
>0.5 | 1ST | 2ND | ARITH | |
|-------------|-------------|------------|---------------|--------|-------------|------|------|----------|--------------|--------------|---------------|-------------|-------------|--------------|-------------|-------------|--------|----------|
| | | | | | | | | | MAX
24-HR | MAX
24-HR | | MAX
3-HR | MAX
3-HR | | MAX
1-HR | MAX
1-HR | MEAN | CERT EDT |
| 54-099-0002 | 1 | 1150 | KENOVA | WAYNE | CENTENNIAL | 1990 | 039 | 7992 | .108 | .089 | 0 | .508 | .246 | 0 | .793 | .450 | .0177 | Y 0 |
| 54-099-0002 | 1 | 1150 | KENOVA | WAYNE | CENTENNIAL | 1991 | 039 | 8646 | .061 | .060 | 0 | .167 | .140 | 0 | .238 | .228 | .0167 | Y 0 |
| 54-099-0002 | 1 | 1150 | KENOVA | WAYNE | CENTENNIAL | 1992 | 039 | 7684 | .050 | .044 | 0 | .128 | .120 | 0 | .199 | .196 | .0121 | Y 0 |
| 54-099-0002 | 1 | 1150 | KENOVA | WAYNE | CENTENNIAL | 1993 | 039 | 8463 | .051 | .042 | 0 | .114 | .092 | 0 | .153 | .142 | .0126 | Y 0 |
| 54-099-0002 | 1 | 1150 | KENOVA | WAYNE | CENTENNIAL | 1994 | 039 | 8645 | .090 | .047 | 0 | .235 | .147 | 0 | .267 | .240 | .0132 | Y 0 |
| 54-099-0002 | 1 | 1150 | KENOVA | WAYNE | CENTENNIAL | 1995 | 039 | 8363 | .038 | .035 | 0 | .094 | .088 | 0 | .138 | .111 | .0095 | Y 0 |
| 54-099-0002 | 1 | 1150 | KENOVA | WAYNE | CENTENNIAL | 1996 | 039 | 8661 | .030 | .029 | 0 | .075 | .062 | 0 | .090 | .089 | .0076 | Y 0 |
| 54-099-0002 | 1 | 1150 | KENOVA | WAYNE | CENTENNIAL | 1997 | 039 | 8576 | .036 | .028 | 0 | .078 | .072 | 0 | .104 | .101 | .0085 | Y 0 |
| 54-099-0002 | 1 | 1150 | KENOVA | WAYNE | CENTENNIAL | 1998 | 039 | 8641 | .041 | .038 | 0 | .111 | .078 | 0 | .169 | .132 | .0089 | Y 0 |
| 54-099-0002 | 1 | 1150 | KENOVA | WAYNE | CENTENNIAL | 1999 | 039 | 8690 | .029 | .022 | 0 | .074 | .054 | 0 | .133 | .072 | .0086 | Y 0 |
| 54-099-0002 | 1 | 1150 | KENOVA | WAYNE | CENTENNIAL | 2000 | 039 | 8728 | .026 | .024 | 0 | .050 | .050 | 0 | .072 | .071 | .0090 | Y 0 |
| 54-099-0002 | 1 | 1150 | KENOVA | WAYNE | CENTENNIAL | 2001 | 039 | 8505 | .030 | .029 | 0 | .076 | .066 | 0 | .112 | .093 | .0091 | 0 |
| 54-099-0002 | 1 | 1150 | KENOVA | WAYNE | CENTENNIAL | 2002 | 039 | 8655 | .026 | .024 | 0 | .068 | .052 | 0 | .091 | .069 | .0075 | Y 0 |
| 54-099-0002 | 1 | 1150 | KENOVA | WAYNE | CENTENNIAL | 2003 | 039 | 2056 | .020 | .019 | 0 | .048 | .048 | 0 | .058 | .057 | .0094 | 0 |
| 54-099-0003 | 1 | 0064 | NOT IN A CITY | WAYNE | SPRING BROO | 1983 | 016 | 8236 | .082 | .080 | 0 | .267 | .263 | 0 | .560 | .450 | .0133 | 0 |
| 54-099-0003 | 1 | 0064 | NOT IN A CITY | WAYNE | SPRING BROO | 1984 | 016 | 8536 | .116 | .108 | 0 | .455 | .450 | 0 | .729 | .673 | .0205 | 0 |
| 54-099-0003 | 1 | 0064 | NOT IN A CITY | WAYNE | SPRING BROO | 1985 | 016 | 7677 | .095 | .094 | 0 | .304 | .282 | 0 | .461 | .458 | .0198 | 0 |
| 54-099-0003 | 1 | 0064 | NOT IN A CITY | WAYNE | SPRING BROO | 1986 | 016 | 7922 | .145 | .119 | 1 | .415 | .351 | 0 | .497 | .441 | .0207 | 0 |
| 54-099-0003 | 1 | 0064 | NOT IN A CITY | WAYNE | SPRING BROO | 1987 | 020 | 8647 | .214 | .147 | 2 | .691 | .620 | 2 | .998 | .918 | .0266 | 0 |
| 54-099-0003 | 1 | 0064 | NOT IN A CITY | WAYNE | SPRING BROO | 1988 | 020 | 8747 | .218 | .168 | 2 | .687 | .652 | 2 | .866 | .800 | .0232 | 0 |
| 54-099-0003 | 1 | 0064 | NOT IN A CITY | WAYNE | SPRING BROO | 1989 | 020 | 8704 | .124 | .099 | 0 | .450 | .332 | 0 | .494 | .466 | .0184 | 0 |
| 54-099-0003 | 1 | 0064 | NOT IN A CITY | WAYNE | SPRING BROO | 1990 | 020 | 8733 | .157 | .126 | 1 | .670 | .485 | 1 | .954 | .724 | .0184 | 0 |
| 54-099-0003 | 1 | 0064 | NOT IN A CITY | WAYNE | SPRING BROO | 1991 | 020 | 8733 | .090 | .072 | 0 | .333 | .319 | 0 | .512 | .443 | .0165 | 0 |
| 54-099-0003 | 1 | 0064 | NOT IN A CITY | WAYNE | SPRING BROO | 1992 | 020 | 8759 | .106 | .079 | 0 | .317 | .293 | 0 | .524 | .392 | .0129 | 0 |
| 54-099-0003 | 1 | 0064 | NOT IN A CITY | WAYNE | SPRING BROO | 1993 | 020 | 8714 | .100 | .093 | 0 | .405 | .389 | 0 | .575 | .531 | .0138 | 0 |
| 54-099-0003 | 1 | 0064 | NOT IN A CITY | WAYNE | SPRING BROO | 1994 | 020 | 8672 | .093 | .048 | 0 | .249 | .152 | 0 | .281 | .258 | .0119 | 0 |
| 54-099-0003 | 1 | 0064 | NOT IN A CITY | WAYNE | SPRING BROO | 1995 | 020 | 8717 | .037 | .034 | 0 | .093 | .086 | 0 | .151 | .120 | .0097 | 0 |
| 54-099-0003 | 1 | 0064 | NOT IN A CITY | WAYNE | SPRING BROO | 1996 | 020 | 8750 | .038 | .033 | 0 | .074 | .068 | 0 | .117 | .105 | .0094 | 0 |
| 54-099-0003 | 1 | 0064 | NOT IN A CITY | WAYNE | SPRING BROO | 1997 | 020 | 8628 | .047 | .046 | 0 | .122 | .119 | 0 | .229 | .179 | .0106 | 0 |
| 54-099-0003 | 1 | 0064 | NOT IN A CITY | WAYNE | SPRING BROO | 1998 | 060 | 6558 | .084 | .053 | 0 | .194 | .174 | 0 | .351 | .350 | .0116* | 0 |
| 54-099-0003 | 1 | 0064 | NOT IN A CITY | WAYNE | SPRING BROO | 1999 | 060 | 8707 | .054 | .052 | 0 | .149 | .089 | 0 | .324 | .169 | .0120 | 0 |

Note: The * indicates that the mean does not satisfy summary criteria.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
 AIR QUALITY SYSTEM
 QUICK LOOK REPORT (AMP450)

Apr. 16, 2004

Sulfur Dioxide (42401)

WEST VIRGINIA

PPM (007)

| SITE ID | P
O
C | REP
ORG | CITY | COUNTY | ADDRESS | YEAR | #
METH OBS | 1ST | 2ND | #OBS
>0.14 | 1ST | 2ND | #OBS
>0.5 | 1ST | 2ND | ARITH
MEANCERT | EDT |
|-------------|-------------|------------|---------------|--------|------------------|------|---------------|--------------|--------------|---------------|-------------|-------------|--------------|-------------|-------------|-------------------|-----|
| | | | | | | | | MAX
24-HR | MAX
24-HR | | MAX
3-HR | MAX
3-HR | | MAX
1-HR | MAX
1-HR | | |
| 54-099-0003 | 1 | 0064 | NOT IN A CITY | WAYNE | SPRING BROO 2000 | 060 | 8682 | .049 | .046 | 0 | .102 | .089 | 0 | .146 | .128 | .0105 | 0 |
| 54-099-0003 | 1 | 0064 | NOT IN A CITY | WAYNE | SPRING BROO 2001 | 060 | 7913 | .040 | .039 | 0 | .105 | .088 | 0 | .141 | .121 | .0096 | 0 |
| 54-099-0003 | 1 | 0064 | NOT IN A CITY | WAYNE | SPRING BROO 2002 | 060 | 8583 | .027 | .025 | 0 | .085 | .072 | 0 | .110 | .099 | .0075 | 0 |
| 54-099-0003 | 1 | 0064 | NOT IN A CITY | WAYNE | SPRING BROO 2003 | 060 | 8658 | .045 | .042 | 0 | .073 | .065 | 0 | .100 | .093 | .0082 | 0 |
| 54-099-0004 | 1 | 0064 | NOT IN A CITY | WAYNE | ROUTE 52 (O 1983 | 016 | 8182 | .149 | .121 | 1 | .483 | .387 | 0 | .722 | .677 | .0155 | 0 |
| 54-099-0004 | 1 | 0064 | NOT IN A CITY | WAYNE | ROUTE 52 (O 1984 | 016 | 8059 | .096 | .085 | 0 | .217 | .204 | 0 | .390 | .346 | .0208 | 0 |
| 54-099-0004 | 1 | 0064 | NOT IN A CITY | WAYNE | ROUTE 52 (O 1985 | 016 | 7958 | .094 | .088 | 0 | .345 | .263 | 0 | .455 | .422 | .0205 | 0 |
| 54-099-0004 | 1 | 0064 | NOT IN A CITY | WAYNE | ROUTE 52 (O 1986 | 000 | 7704 | .107 | .077 | 0 | .295 | .244 | 0 | .435 | .420 | .0203 | 0 |
| 54-099-0004 | 1 | 0064 | NOT IN A CITY | WAYNE | ROUTE 52 (O 1987 | 020 | 8547 | .107 | .082 | 0 | .336 | .334 | 0 | .661 | .648 | .0257 | 0 |
| 54-099-0004 | 1 | 0064 | NOT IN A CITY | WAYNE | ROUTE 52 (O 1988 | 020 | 8745 | .155 | .134 | 1 | .353 | .309 | 0 | .446 | .431 | .0235 | 0 |
| 54-099-0004 | 1 | 0064 | NOT IN A CITY | WAYNE | ROUTE 52 (O 1989 | 020 | 8722 | .122 | .096 | 0 | .358 | .318 | 0 | .523 | .504 | .0184 | 0 |
| 54-099-0004 | 1 | 0064 | NOT IN A CITY | WAYNE | ROUTE 52 (O 1990 | 020 | 8664 | .075 | .072 | 0 | .177 | .168 | 0 | .275 | .248 | .0154 | 0 |
| 54-099-0004 | 1 | 0064 | NOT IN A CITY | WAYNE | ROUTE 52 (O 1991 | 020 | 8647 | .062 | .057 | 0 | .180 | .147 | 0 | .304 | .226 | .0154 | 0 |
| 54-099-0004 | 1 | 0064 | NOT IN A CITY | WAYNE | ROUTE 52 (O 1992 | 020 | 8734 | .061 | .048 | 0 | .205 | .152 | 0 | .272 | .265 | .0133 | 0 |
| 54-099-0004 | 1 | 0064 | NOT IN A CITY | WAYNE | ROUTE 52 (O 1993 | 020 | 8676 | .071 | .059 | 0 | .241 | .212 | 0 | .269 | .259 | .0131 | 0 |
| 54-099-0004 | 1 | 0064 | NOT IN A CITY | WAYNE | ROUTE 52 (O 1994 | 020 | 8549 | .091 | .047 | 0 | .249 | .153 | 0 | .274 | .267 | .0105 | 0 |
| 54-099-0004 | 1 | 0064 | NOT IN A CITY | WAYNE | ROUTE 52 (O 1995 | 020 | 8723 | .075 | .058 | 0 | .159 | .130 | 0 | .187 | .175 | .0115 | 0 |
| 54-099-0004 | 1 | 0064 | NOT IN A CITY | WAYNE | ROUTE 52 (O 1996 | 020 | 8734 | .036 | .035 | 0 | .117 | .089 | 0 | .224 | .142 | .0101 | 0 |
| 54-099-0004 | 1 | 0064 | NOT IN A CITY | WAYNE | ROUTE 52 (O 1997 | 020 | 8669 | .036 | .034 | 0 | .114 | .102 | 0 | .143 | .137 | .0123 | 0 |
| 54-099-0004 | 1 | 0064 | NOT IN A CITY | WAYNE | ROUTE 52 (O 1998 | 060 | 6591 | .040 | .033 | 0 | .122 | .099 | 0 | .148 | .146 | .0110 | 0 |
| 54-099-0004 | 1 | 0064 | NOT IN A CITY | WAYNE | ROUTE 52 (O 1999 | 060 | 8709 | .040 | .034 | 0 | .127 | .087 | 0 | .233 | .190 | .0114 | 0 |
| 54-099-0004 | 1 | 0064 | NOT IN A CITY | WAYNE | ROUTE 52 (O 2000 | 060 | 8710 | .055 | .042 | 0 | .100 | .098 | 0 | .165 | .139 | .0104 | 0 |
| 54-099-0004 | 1 | 0064 | NOT IN A CITY | WAYNE | ROUTE 52 (O 2001 | 060 | 8662 | .047 | .033 | 0 | .088 | .085 | 0 | .133 | .132 | .0098 | 0 |
| 54-099-0004 | 1 | 0064 | NOT IN A CITY | WAYNE | ROUTE 52 (O 2002 | 060 | 8578 | .031 | .028 | 0 | .090 | .072 | 0 | .096 | .094 | .0092 | 0 |
| 54-099-0004 | 1 | 0064 | NOT IN A CITY | WAYNE | ROUTE 52 (O 2003 | 060 | 8624 | .062 | .032 | 0 | .116 | .112 | 0 | .232 | .160 | .0085 | 0 |
| 54-099-0005 | 1 | 0064 | NOT IN A CITY | WAYNE | BIG SANDY R 1983 | 016 | 7087 | .112 | .094 | 0 | .432 | .216 | 0 | .473 | .430 | .0126 | 0 |
| 54-099-0005 | 1 | 0064 | NOT IN A CITY | WAYNE | BIG SANDY R 1984 | 016 | 6982 | .078 | .075 | 0 | .211 | .193 | 0 | .403 | .353 | .0164 | 0 |
| 54-099-0005 | 1 | 0064 | NOT IN A CITY | WAYNE | BIG SANDY R 1985 | 016 | 7838 | .123 | .096 | 0 | .189 | .182 | 0 | .298 | .274 | .0172 | 0 |
| 54-099-0005 | 1 | 0064 | NOT IN A CITY | WAYNE | BIG SANDY R 1986 | 000 | 7969 | .172 | .107 | 1 | .320 | .289 | 0 | .548 | .400 | .0197 | 0 |
| 54-099-0005 | 1 | 0064 | NOT IN A CITY | WAYNE | BIG SANDY R 1987 | 020 | 8531 | .187 | .141 | 1 | .278 | .235 | 0 | .311 | .303 | .0223 | 0 |
| 54-099-0005 | 1 | 0064 | NOT IN A CITY | WAYNE | BIG SANDY R 1988 | 020 | 8664 | .110 | .092 | 0 | .206 | .167 | 0 | .310 | .223 | .0201 | 0 |

Note: The * indicates that the mean does not satisfy summary criteria.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
 AIR QUALITY SYSTEM
 QUICK LOOK REPORT (AMP450)

Apr. 16, 2004

Sulfur Dioxide (42401)

WEST VIRGINIA

PPM (007)

| SITE ID | P
O
C | REP
ORG | CITY | COUNTY | ADDRESS | YEAR | METH | #
OBS | 1ST | 2ND | #OBS
>0.14 | 1ST | 2ND | #OBS
>0.5 | 1ST | 2ND | ARITH
MEANCERT | EDT |
|-------------|-------------|------------|---------------|--------|-------------|------|------|----------|--------------|--------------|---------------|-------------|-------------|--------------|-------------|-------------|-------------------|-----|
| | | | | | | | | | MAX
24-HR | MAX
24-HR | | MAX
3-HR | MAX
3-HR | | MAX
1-HR | MAX
1-HR | | |
| 54-099-0005 | 1 | 0064 | NOT IN A CITY | WAYNE | BIG SANDY R | 1989 | 020 | 8696 | .256 | .124 | 1 | .340 | .306 | 0 | .403 | .402 | .0190 | 0 |
| 54-099-0005 | 1 | 0064 | NOT IN A CITY | WAYNE | BIG SANDY R | 1990 | 020 | 8742 | .065 | .063 | 0 | .155 | .138 | 0 | .172 | .169 | .0153 | 0 |
| 54-099-0005 | 1 | 0064 | NOT IN A CITY | WAYNE | BIG SANDY R | 1991 | 020 | 8729 | .056 | .044 | 0 | .114 | .091 | 0 | .159 | .143 | .0127 | 0 |
| 54-099-0005 | 1 | 0064 | NOT IN A CITY | WAYNE | BIG SANDY R | 1992 | 020 | 8759 | .051 | .045 | 0 | .131 | .125 | 0 | .178 | .173 | .0124 | 0 |
| 54-099-0005 | 1 | 0064 | NOT IN A CITY | WAYNE | BIG SANDY R | 1993 | 020 | 8733 | .054 | .051 | 0 | .116 | .095 | 0 | .152 | .133 | .0143 | 0 |
| 54-099-0005 | 1 | 0064 | NOT IN A CITY | WAYNE | BIG SANDY R | 1994 | 020 | 8733 | .085 | .053 | 0 | .209 | .146 | 0 | .245 | .217 | .0111 | 0 |
| 54-099-0005 | 1 | 0064 | NOT IN A CITY | WAYNE | BIG SANDY R | 1995 | 020 | 8738 | .049 | .042 | 0 | .103 | .089 | 0 | .215 | .154 | .0118 | 0 |
| 54-099-0005 | 1 | 0064 | NOT IN A CITY | WAYNE | BIG SANDY R | 1996 | 020 | 8715 | .040 | .035 | 0 | .115 | .074 | 0 | .172 | .150 | .0117 | 0 |
| 54-099-0005 | 1 | 0064 | NOT IN A CITY | WAYNE | BIG SANDY R | 1997 | 020 | 8672 | .042 | .041 | 0 | .082 | .082 | 0 | .140 | .138 | .0105 | 0 |
| 54-099-0005 | 1 | 0064 | NOT IN A CITY | WAYNE | BIG SANDY R | 1998 | 060 | 6590 | .060 | .036 | 0 | .411 | .069 | 0 | .526 | .377 | .0095 | 0 |
| 54-099-0005 | 1 | 0064 | NOT IN A CITY | WAYNE | BIG SANDY R | 1999 | 060 | 8743 | .035 | .034 | 0 | .083 | .072 | 0 | .169 | .121 | .0112 | 0 |
| 54-099-0005 | 1 | 0064 | NOT IN A CITY | WAYNE | BIG SANDY R | 2000 | 060 | 8708 | .049 | .044 | 0 | .118 | .115 | 0 | .255 | .199 | .0117 | 0 |
| 54-099-0005 | 1 | 0064 | NOT IN A CITY | WAYNE | BIG SANDY R | 2001 | 060 | 8657 | .037 | .030 | 0 | .085 | .081 | 0 | .228 | .195 | .0090 | 0 |
| 54-099-0005 | 1 | 0064 | NOT IN A CITY | WAYNE | BIG SANDY R | 2002 | 060 | 8683 | .041 | .034 | 0 | .098 | .072 | 0 | .114 | .113 | .0081 | 0 |
| 54-099-0005 | 1 | 0064 | NOT IN A CITY | WAYNE | BIG SANDY R | 2003 | 060 | 8656 | .063 | .039 | 0 | .157 | .105 | 0 | .167 | .157 | .0077 | 0 |

Note: The * indicates that the mean does not satisfy summary criteria.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
AIR QUALITY SYSTEM
QUICK LOOK REPORT (AMP450)

Apr. 16, 2004

METHODS USED IN THIS REPORT

| PARAMETER | METHOD
CODE | COLLECTION METHOD | ANALYSIS METHOD |
|-----------|----------------|-------------------|------------------------------------|
| | 000 | MULTIPLE METHODS | |
| 42401 | 014 | INSTRUMENTAL | COULOMETRIC |
| 42401 | 016 | INSTRUMENTAL | FLAME PHOTOMETRIC |
| 42401 | 020 | INSTRUMENTAL | PULSED FLUORESCENT |
| 42401 | 023 | INSTRUMENTAL | ULTRA VIOLET STIMULATED FLUORESCNC |
| 42401 | 039 | INSTRUMENTAL | ULTRA VIOLET STIMULATED FLUORESCNC |
| 42401 | 060 | INSTRUMENTAL | PULSED FLUORESCENT |
| 42401 | 061 | INSTRUMENTAL | ULTRA VIOLET FLUORESCENCE |
| 42401 | 091 | GAS-BUBBLER | PARAROSANILINE-SULFAMIC ACID |
| 42401 | 097 | GAS-BUBBLER | PARAROSANILINE-SULFAMIC TEMP. CONT |

Note: The * indicates that the mean does not satisfy summary criteria.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
AIR QUALITY SYSTEM
QUICK LOOK REPORT (AMP450)

Apr. 16, 2004

REPORTING ORGANIZATIONS USED IN THIS REPORT

| REPORTING ORGANIZATION CODE | AGENCY DESCRIPTION |
|-----------------------------|--|
| 0064 | ASHLAND OIL |
| 0880 | PORTSMOUTH CITY HEALTH DEPT DIVISION AIR POLLUTION C |
| 1150 | WEST VIRGINIA AIR POLLUTION CONTROL COMMISSION |

Note: The * indicates that the mean does not satisfy summary criteria.

Appendix D

Letter from KYDAQ Director John Lyons
to USEPA Brenda Johnson,
October 23, 2003



COMMONWEALTH OF KENTUCKY
NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION
DIVISION FOR AIR QUALITY
803 SCHENKEL LN
FRANKFORT KY 40601-1403

October 20, 2003

Brenda C. Johnson
U.S. EPA, Region 4
Air Planning Branch
61 Forsyth Street
Atlanta, Georgia 30303

Dear Ms Johnson:

The purpose of this letter is to request your approval to use an alternative model for the re-designation of that portion of Boyd County that is currently classified as SO₂ non-attainment. As you know, the Guideline on Air Quality Models (GAQM) specifies criteria which a Regional Administrator should use to determine that an alternative model is more appropriate than a model listed in Appendix A of the GAQM for a specific application.

According to Section 3.2.2.e of the revised GAQM, "an alternative refined model may be used provided that:

- i. The model can be demonstrated to be applicable to the problem on a theoretical basis; and
- ii. The databases which are necessary to perform the analysis are available and adequate; and
- iii. Performance evaluations of the model in similar circumstances have shown that the model is not biased toward underestimates; or
- iv. After consultation with the EPA Regional Office, a second model is selected as a baseline or reference point for performance and the interim procedures protocol are then used to demonstrate that the proposed model performs better than the reference model.

The Kentucky Division for Air Quality believes that the AERMOD model, first proposed at the Seventh Annual Modeling Conference with subsequent amendments resulting in the current version 02222, meets the above listed provisions. AERMOD is a dispersion model developed by a working group comprised of three American Meteorological Society (AMS) scientists and four Environmental Protection Agency scientists. In the April 21, 2000, *Federal Register*, the EPA proposed to revise the GAQM and replace the Industrial Source Complex (ISC) model with AERMOD as a state-of-the-art practice technique for many air quality impact assessments. The AERMOD air dispersion model contains more sophisticated dispersion algorithms and can incorporate more detailed and available meteorological data than current versions of the ISCST3 air dispersion model. The following paragraphs address each provision of Section 3.2.2.e and describe the reasons why AERMOD, as the alternative model, should be used for the Boyd county re-designation exercise.



Brenda Johnson
October 20, 2003
Page 2

The model can be demonstrated to be applicable to the problem on a theoretical basis.

The April 21, 2000, Federal Register notice states that AERMOD is appropriate for the following applications:

- Point, volume, and area sources;
- Surface, near surface, and elevated releases;
- Rural or urban areas;
- Simple and complex terrain;
- Transport distances over which steady-state assumptions are appropriate, up to 50km;
- One (1) hour to annual averaging times.

The databases that are necessary to perform the analysis are available and adequate.

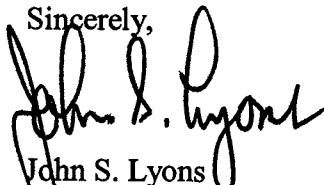
Adequate databases to perform the model are readily available. The meteorological database for the AERMOD air dispersion model will be that data collected at the Cooper School tower in Kentucky near the Marathon Ashland refinery in 1991. Also, the Cooper School data was combined with temperature, cloud cover and upper air measurements from the Huntington/ Tri-State Airport West Virginia NWS station. U.S. EPA approved criteria was used to demonstrate the adequacy and representativeness of the selected meteorological database.

Appropriate performance evaluations of the model have shown that the model is not biased toward underestimates.

The performance evaluations of AERMOD indicate results that are nearly unbiased, on average, across all averaging times. For all averaging times in general and in most specific cases, AERMOD's performance was better than that of ISCST3.

The Kentucky Division for Air Quality is requesting that your agency concur with our determination that AERMOD is the appropriate alternative model to use for re-designation and approve its use. If you have any questions regarding this matter, please contact Mr. Stuart Ecton or Ms. Lona Brewer at 502-573-3383.

Sincerely,



John S. Lyons
Director

JSL:sde

Appendix E

Letter from USEPA Regional Administer to
KYDAQ Director John Lyons,
November 12, 2003



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4

ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

NOV 12 2003

4APT-APB

John S. Lyons, Director
Commonwealth of Kentucky
Natural Resources and
Environmental Protection Cabinet
Division for Air Quality
803 Schenkel Lane
Frankfort, Kentucky 40601-1403

Dear Mr. Lyons:

Thank you for your October 20, 2003, letter to the Environmental Protection Agency (EPA) requesting the use of an alternative air dispersion model in the maintenance plan for the redesignation of the Boyd County, Kentucky sulfur dioxide (SO₂) nonattainment area. The alternative model would be used to demonstrate protection of the SO₂ National Ambient Air Quality Standards (NAAQS) instead of the preferred model in title 40 of the Code of Federal Regulations (40 C.F.R.), part 51, Appendix W, Guideline on Air Quality Models.

Air quality modeling for regulatory application must be based on the preferred models identified in the Guideline on Air Quality Models (GAQM), except where the preferred model is inappropriate. The GAQM further specifies the conditions and procedures for selecting an alternative model and states that specific written approval of the EPA Regional Administrator to use the alternative model is required.

We have reviewed your rationale for using the the American Meteorological Society/EPA Regulatory Model Improvement Committee Model (AERMOD) as an alternative to the GAQM-preferred Industrial Source Complex (ISCST3) model. Our approval of AERMOD as an alternative model is based on the requirements of 40 C.F.R. part 51, Appendix W, Section 3.2. This section states that alternative model approval will normally be granted if one of three conditions is satisfied. The condition that is relevant to your request, condition #2, states that, "... (2) if a statistical performance evaluation has been conducted using measured air quality data and the results of that evaluation indicate the alternative model performs better for the application than a comparable model in appendix A," then the model could be approved as an alternative. In the past, we have interpreted this provision as requiring a site-specific comparative model evaluation study. However, given the special circumstances of your request we believe that a site-specific study is not necessary. You are requesting the use of a model which has been subjected to the rigor of a formal peer review and an extensive performance evaluation, and, in addition, it has been proposed by EPA to replace the existing preferred model. Therefore, we are convinced that there is ample evidence to suggest that if a site-specific study

RECEIVED

NOV 14 2003

DIRECTOR'S OFFICE
DIVISION FOR AIR QUALITY

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NOV 21 2003

PROGRAM PLANNING & ADMIN. BR.
DIVISION FOR AIR QUALITY

were conducted, for this application, AERMOD would exhibit superior performance over the EPA-preferred model (i.e., the Industrial Source Complex Model, ISCST3).

Therefore, in accordance with the provision of Section 3.2 of the GAQM, the proposed use of the AERMOD model (version 02222) is hereby approved by EPA for the maintenance plan demonstration in the redesignation State Implementation Plan for the Boyd County, Kentucky SO₂ nonattainment area. This approval is consistent with the recommendation under Section 3.2 of 40 C.F.R. part 51, Appendix W.

Please recognize that until such time as EPA has formally adopted AERMOD as a preferred model in the GAQM, any time the Kentucky Division for Air Quality uses AERMOD results as a basis for a regulatory action, you are required to give public notice and to provide the opportunity for a public hearing on the use of this alternative model. This public notice and opportunity for hearing may be conducted concurrently and as part of the public participation process for the particular regulatory action.

If you have any questions regarding this letter, please contact Ms. Beverly Banister of EPA Region 4 at (404) 562-9326.

Sincerely,



ju
J. I. Palmer, Jr.
Regional Administrator

Appendix F

SO₂ Attainment Modeling Demonstration,
Boyd County, KY,
December 2003

CALGON FACILITY

| AERMOD Emission Point | Calgon Emission Point | Affected Facility | Emissions g/s | New Federally Enforceable Allowable (V-00-015 R2) | Decrease in Allowable g/s | Stack Height Meters |
|------------------------------|------------------------------|--------------------------|----------------------|--|----------------------------------|----------------------------|
| 57 | 12 | B-Line Baker Heater | 3.352 | 0.215 | -3.14 | 7.0 |
| 58 | 14 | B-Line Activator | 3.326 | 0.3629 | -2.96 | 36.6 |
| 59 | 21 | C-Line Activators | 4.435 | 0.9727 | -3.46 | 36.6 |
| 62 | 31 | D-Line Bakers | 8.278 | 1.89 | -6.39 | 28.0 |
| 63 | 34 | D-Line Activators | 8.278 | 1.89 | -6.39 | 35.0 |
| 64 | 32 | D-Line Baker Heaters | 3.352 | 0.215 | -3.14 | 9.0 |
| 65 | 40 | E-Line Baker Heaters | 2.684 | 1.004 | -1.68 | 9.0 |
| 66 | 39 | E-Line Bakers | 9.579 | 1.89 | -7.69 | 37.0 |
| 67 | 42 | E-Line Activators | 4.485 | 1.89 | -2.60 | 28.0 |
| 69 | 64 | Package Boiler | 3.977 | 0.002 | -3.98 | 4.9 |

Total Decrease TPY

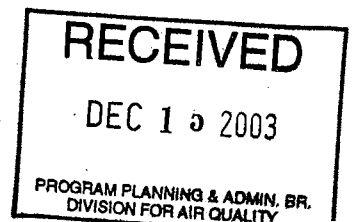
-1439.67

**Boyd County, Kentucky
Sulfur Dioxide (SO₂)
Attainment Modeling Documentation**

Prepared by:

U.S. EPA Region 4,
U.S. EPA Region 3,
Kentucky Division of Air Quality
West Virginia Department of Environmental Protection

December 2003

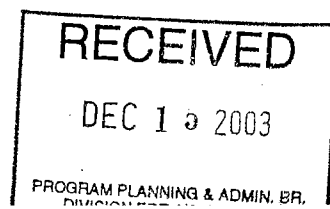


Boyd County, Kentucky Sulfur Dioxide (SO₂) Attainment Modeling Documentation

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BOYD COUNTY SO2 ATTAINMENT MODELING

I. Model Selection

EPA Regions 3 and 4, the Kentucky Division of Air Quality (KY DAQ) and the West Virginia Department of Environmental Protection (WV DEP) jointly developed air dispersion modeling for the Boyd County, Kentucky sulfur dioxide (SO₂) nonattainment area. The modeling procedures applied in the demonstration of attainment for the Boyd County, Kentucky nonattainment area were based on the use of the American Meteorological Society (AMS)/ United States Environmental Protection Agency (EPA) Regulatory Model Improvement Committee (AERMIC) Model (AERMOD). The AERMOD modeling system represents an improvement in regulatory steady-state plume modeling. This modeling system includes: (1) innovative air turbulence structure, scaling and concepts; (2) treatment of both surface and elevated sources; 3) treatment of both simple and complex terrain, and 4) the PRIME downwash algorithm. The modeling system consists of 3 components: AERMOD (the air dispersion model), the AERMOD meteorological preprocessor (AERMET), and the AERMOD mapping program for processing terrain and generating receptors (AERMAP). The latest versions of this modeling platform were used: AERMOD and AERMET (version 02222), and AERMAP (version. 03107). The AERMOD modeling system used in this analysis can be found on the Support Center for Regulatory Models (SCRAM) Internet site, i.e., <http://www.epa.gov/ttn/scram/>.

The Industrial Source Complex (ISC3) model is the current Agency preferred model for air quality impact analysis of stationary sources for most criteria pollutants. The use of non-guideline models, such as AERMOD, is allowed under section 3.2 of the EPA guidance, "Appendix W of 40 CFR Part 51: Guideline on Air Quality Models" (Modeling Guideline) and 40 CFR 51.112. This section of the Modeling Guideline permits the use of an alternative model provided EPA approves the justification for its use. Kentucky DAQ requested that EPA approve the use of the AERMOD non-guideline model in a letter dated October 20, 2003. EPA Region 4 approved AERMOD for this application in a November 12, 2003, letter from the EPA Region 4 Regional Administrator. The KY DAQ letter requesting the use of AERMOD provided the necessary rationale for Region 4's acceptance. AERMOD was proposed as the next Environmental Protection Agency (EPA) regulatory model in the April 20, 2000 Federal Register (65 FR 21506). AERMOD is a state-of-the-practice Gaussian plume dispersion model whose formulation is based on planetary boundary layer principles. AERMOD employs the well-known dividing-streamline concept (i.e., as used in the CTDMPLUS model) in a simplified simulation of the effects of plume-terrain interactions. AERMOD offers a more modern characterization of plume dispersion than does the ISC3 model it is proposed to replace. AERMOD utilizes directly observed variables of the boundary layer to parameterize dispersion. AERMOD is proposed to become a preferred model in the EPA Modeling Guideline. The Plume Rise Model Enhancements (PRIME) algorithm is included in AERMOD. A discussion of the model and latest enhancements are presented in the paper, "AERMOD Latest Features and Evaluation Results," on the SCRAM Internet site (<http://www.epa.gov/ttn/scram/>) under AERMOD_MEP on the 7th Modeling Conference webpage under the section entitled AERMOD Beta Test.

II. AERMET PREPROCESSOR

Meteorological Data

Meteorological data (i.e., wind speed and wind direction) from 1991 collected at the Cooper School tower in Kentucky near the Marathon Oil facility were used in this assessment. The tower is located approximately 1.3 miles south of Catlettsburg, Kentucky. The location of the Cooper School tower is shown in Figure 1. The anemometer height of the Cooper School tower is 10 meters (m) above the ground. The base elevation for the Cooper School tower is 201.2 m (660 feet) above mean sea level (MSL). These data were chosen for this attainment modeling application because many of the stacks have heights of 12- 20 m and the tower is located near many of the important sources. Therefore, wind speed and direction data from the tower should be representative of stack-top conditions. Figure 1.1 presents a wind rose of the 1991 data measured at the Cooper School tower. The Cooper School data were analyzed to determine missing periods of data. For missing wind data periods of three hours or less, interpolation of the last valid hour before and after the periods of missing data was used to fill the data gaps. For longer periods of missing data, the AERMET option to substitute data from the National Weather Service (NWS) Station was used. Data from the Huntington/Tri-State Airport West Virginia NWS station (Weather-Bureau-Army-Navy (WBAN) identification number 03860) was used. The location of the Huntington/Tri-State Airport NWS station is shown on Figure 1. It's base elevation is 251.8 m (826 feet) above MSL with an anemometer height of 6.1 m (20 feet).

A morning sounding (in National Weather Service format) from a representative upper air station, latitude, longitude, time zone, and wind speed threshold is also required in AERMET. Optionally, measurements of solar radiation, net radiation, profiles of wind, temperature, and vertical and lateral turbulence may be input to AERMET. The wind data from the Cooper School was combined with the temperature, cloud cover and upper air measurements from the Huntington/Tri-State Airport West Virginia NWS station.

Surface Characteristics

The AERMET model is used to develop hourly sequential meteorological data to estimate concentrations for averaging times from one hour to one year. AERMET processes meteorological data for input to AERMOD. Surface characteristics (i.e., surface roughness, Bowen ratio, and albedo by sector and season or month) and hourly observations of wind speed, wind direction, cloud cover, and temperature are required inputs to the AERMET meteorological preprocessor. The surface characteristics should represent the surface characteristics in the vicinity of the meteorological tower. The surface characteristics for this modeling demonstration were developed from an analysis of the land use characteristics within a 3 km radius of the Cooper School met tower. A 1:250,000 USGS Land Use Land Cover (LULC) map was used to determine the land use categories for the analysis. Figure 2 shows the land use categories within the 3 kilometers (km) radius of the Cooper School met tower. Since data from the Huntington/Tri-State NWS station was also used in the analysis, the land-use characteristics surrounding its location were also examined. As can be seen in Figure 2, the land use

characteristics surrounding the NWS station are similar to the Cooper School site, with slightly more agricultural land and less urban land than surrounding the Cooper School tower, but overall they are similar. Since the Cooper School tower was the primary source of wind speed and direction measurements, it was chosen as the location for calculating the albedo, Bowen ratio and surface roughness in AERMET.

Tables 4-1 through 4-3 in the AERMET User's Guide¹ provide values of albedo, Bowen ratio, and surface roughness for varying land-use types and seasons. The 3 km radius circle surrounding the Cooper School tower was broken into four sectors as shown in Figure 2. Areal-averaged values of albedo, Bowen ratio and surface roughness were determined for each of these four sectors by using the ratio of the area of each land-use type to the total area of the sector. These area ratios were multiplied by the appropriate values found in Tables 4-1 through 4-3 of the AERMET User's Guide to estimate the site-specific values for albedo, Bowen ratio, and surface roughness which are required inputs for AERMET. Table 1 provides the calculated values of albedo, Bowen ratio and surface roughness. The complete details of this analysis are provided in a Microsoft Excel spreadsheet on the attached CD-ROM

¹ Environmental Protection Agency, 1998. AERMET User's Manual. U.S. Environmental Protection Agency, Research Triangle Park, NC. Located on the EPA SCRAM website at <http://www.epa.gov/ttn/scram/>

Table 1.
Surface Characteristics

| Northeast Sector | | | | |
|------------------------------|---------------|---------------|-------------|---------------|
| | Spring | Summer | Fall | Winter |
| Albedo | 0.135 | 0.153 | 0.164 | 0.397 |
| Bowen Ratio | 0.834 | 1.390 | 1.567 | 1.500 |
| Surface Roughness (m) | 0.896 | 0.967 | 0.862 | 0.804 |
| Southest Sector | | | | |
| | Spring | Summer | Fall | Winter |
| Albedo | 0.132 | 0.144 | 0.150 | 0.451 |
| Bowen Ratio | 0.819 | 1.020 | 1.436 | 1.575 |
| Surface Roughness (m) | 0.909 | 1.080 | 0.806 | 0.643 |
| Southwest Sector | | | | |
| | Spring | Summer | Fall | Winter |
| Albedo | 0.129 | 0.142 | 0.141 | 0.482 |
| Bowen Ratio | 0.710 | 0.627 | 1.148 | 1.570 |
| Surface Roughness (m) | 0.851 | 1.057 | 0.737 | 0.551 |
| Northwest Sector | | | | |
| | Spring | Summer | Fall | Winter |
| Albedo | 0.125 | 0.132 | 0.134 | 0.430 |
| Bowen Ratio | 0.708 | 0.556 | 1.038 | 1.500 |
| Surface Roughness (m) | 1.033 | 1.164 | 0.957 | 0.837 |

AERMET Output Files

The AERMET meteorological preprocessor produces two files for input to the AERMOD dispersion model. The surface file contains observed and calculated surface variables (e.g., albedo, Bowen ratio, surface roughness, Monin-Obukhov length, mixing height, sensible heat flux, etc). The profile file contains the observations made at each tower level, or the single-level observations taken from other representative data (e.g., National Weather Service surface observations). For this analysis, observations at multiple levels were not available at the Cooper School meteorological tower. Therefore, the profile file contains a single level of merged observations from the Cooper School tower (wind speed and direction) and the NWS station (temperature). The AERMOD model uses this single level of observations to generate a vertical profile of meteorological parameters. The input files for the AERMET preprocessor were developed according to the AERMET User's Guide.¹ The input and output files for AERMET are included on the attached CD-ROM.

III. AERMAP PREPROCESSOR

Topography

Boyd County is located in the northeastern part of Kentucky. The area is bounded by the Big Sandy River and West Virginia on the east and the Ohio River and Ohio on the north. Figure 3 illustrates a topographic map of the SO₂ nonattainment area and the SO₂ emission sources that were modeled in the surrounding area. The terrain is characterized by a relatively flat plateau with steep terrain surrounding the Big Sandy River valley. Figure 3.1 shows a detailed map of the topography over the final modeling receptor grid area. Most of the stack heights of the sources within the modeling area are less than the height of the surrounding plateau; therefore, complex-modeling techniques are required for the attainment modeling demonstration.

Rural versus Urban Land Use Analysis

An analysis was performed to determine if the area surrounding sources of interest should be classified as urban or rural for the air dispersion modeling. The Auer Classification Typing Scheme² was used with 7.5 minute (1:250,000) land use data, from a U.S. Geological Survey (USGS) digital land use land cover (LULC) file, within a 3 km radius for this analysis. This is the same data set that was used to determine the surface characteristics for AERMET in the discussion above (See Figure 2). The analysis indicated that only 32 percent (%) of the area could be classified as residential, commercial or industrial. The remainder is considered to be cropland and pasture, forested or transitional areas. Table 2 shows each USGS land-use classification and corresponding description. Because the majority of the area within the 3 km radius is considered to be rural, rural dispersion coefficients will be utilized in the modeling.

| Code | Classification | Description |
|-------------|------------------------|---|
| 1 | Urban or Built-Up Land | Residential, Commercial, Industrial, Transportation, Communications, and Mixed Urban or Built-Up Land |
| 2 | Agricultural Land | Cropland and Pasture, Orchards, Groves, Vineyards, Nurseries, Confined Feeding Operations |
| 3 | Rangeland | Herbaceous, Shrub and Brush Rangeland |
| 4 | Forest Land | Deciduous, Evergreen and Mixed Forrest Land |
| 5 | Water | Streams, Lakes, Reservoirs, and Bays/Estuaries |
| 6 | Wetland | Forested and Non-forested Wetlands |
| 7 | Barren Land | Dry Salt Flats, Beaches, Sandy Areas, Bare Exposed Rock, Strip Mines, Quarries, Gravel Pits, and Transitional Areas |
| 8 | Tundra | Shrub and Brush, Herbaceous, Bare and Wet Tundra |
| 9 | Perennial Snow and Ice | Perennial Snowfields and Glaciers |

² Auer, JR., A. H., *Correlation of Land Use and Cover with Meteorological Anomalies*, Journal of Applied Meteorology, Vol. 17, pp. 636-643, 1978.

Receptor Grids

The AERMAP terrain preprocessor uses receptor coordinates, elevations, and height above ground, to produce hill-height scales for input in AERMOD. Discrete receptors and/or multiple receptor grids (i.e., Cartesian and/or polar) may be employed in AERMOD. AERMAP requires input of Digital Elevation Model (DEM) terrain data produced by the USGS, or other equivalent data. AERMAP was used to estimate source and receptor elevations. The preprocessor inputs were developed according to the AERMAP user's guide³ and are included in the AERMAP directory of the attached CD-ROM. For this analysis, thirty (30) 7.5-minute USGS DEM files were used to cover the entire modeling domain.

Three receptor grids were used in the attainment demonstration modeling: (1) a coarse Cartesian receptor grid with 1000-m spacing and (2) two grids of 250-m spacing. Figure 4 illustrates the location and size of the different grids. The coarse receptor grid (outlined in red in Figure 4) was used to identify areas of high concentrations that could merit closer analysis. It encompasses the Boyd County SO₂ nonattainment area and has dimensions of approximately 23 km by 27 km for a total area of 621 square km. The results of the initial coarse grid model runs (Figures 7, 8 and 9) indicate that the largest modeled concentration impacts were confined to an area centered on the Big Sandy River Valley (receptor area outlined in yellow) and an area in the north-northeastern part of Boyd County (receptor area outlined in blue). The fine (i.e., 10 km x 13 km) resolution grid of 250-m spacing outlined in yellow was used to identify the highest controlling concentration.

IV. AERMOD Modeling

Input Development

The AERMET and AERMAP preprocessor outputs were used as input for running the AERMOD air dispersion model. The inputs were developed according to the AERMOD user's guide.⁴ The model was run in the default mode of operation. These options include stack-tip downwash, and a routine for processing averages when calm winds or missing meteorological data occur. The sources were modeled with maximum allowable emission rates as discussed above. The input and output files for the AERMOD model runs are included on the attached CD.

³ Environmental Protection Agency, 1998. User's Guide for the AERMOD Meteorological Preprocessor (AERMET), Office of Air Quality Planning and Standards, Research Triangle Park, NC 27711. Located on the EPA SCRAM website: <http://www.epa.gov/ttn/scram/>.

⁴ Environmental Protection Agency, 1998. User's Guide for the AMS/EPA Regulatory Model - AERMOD, Office of Air Quality Planning and Standards, Research Triangle Park, NC 27711. Located on SCRAM website: at <http://www.epa.gov/ttn/scram/>.

Building Downwash and Good Engineering Practice (GEP) Stack Height Analysis

Stack-tip downwash and buoyancy induced dispersion effects are modeled with AERMOD. Building wake effects are simulated for stacks less than good engineering practice. The EPA Building Profile Input Program (BPIP)-Prime model was used to determine the GEP stack height and to develop the building input data for each applicable source (i.e., any emission source with stack height less than GEP). The modeling of building downwash was performed for sources located in, or near the SO₂ nonattainment area. Figure 5 shows the sources that were modeled for building downwash. Detailed data (i.e., BPIP-Prime input and output files and plot files for the sources subject to downwash modeling are included in the attached CD-ROM.

Modeling Emission Inventory

EPA's Modeling Guideline states that, "all sources expected to cause a significant concentration gradient in the vicinity of the source or sources under consideration for emission limits(s) should be explicitly modeled." Required input includes source type, location, emission rate, stack height, stack inside diameter, stack gas exit velocity, stack gas temperature, area and volume source dimensions, and source elevation. Building dimensions and variable emission rates are optional and are subject to whether or not modeling for building downwash is performed. Maximum allowable and/or permit SO₂ emission rates were used as inputs to the model for each source specifically modeled. The emissions inventory developed by ENSR consultants in a preliminary modeling study for this area⁵ was used in this modeling demonstration (with some changes discussed below). In the ENSR-developed modeling, major sources (i.e., ≥ 100 tons per year) emission sources within 50 km of the Boyd County, Kentucky SO₂ nonattainment area were reviewed for inclusion in the modeling inventory. One additional minor source that is located within Boyd County was also modeled. The ENSR report provides more details on the complete list of sources initially considered for dispersion modeling, their locations, allowable emissions and the final list of sources that were modeled. It also discusses the status of some of the sources that were initially considered for modeling but were omitted due to shut downs or other operational changes.

This modeling analysis includes changes to the ENSR-developed modeling emissions inventory. The most significant changes to the ENSR-developed inventory were to source emissions and stack parameters for the Sunoco (formerly Aristech/Neal in ENSR modeling) and Calgon Big Sandy facilities, since these two facilities were found to be the primary contributors to the high modeled concentrations in the ENSR report. The revisions for Calgon and Sunoco were based on data provided by the KY DAQ and WV DEP, respectively, and are discussed in detail in the following sections. The changes to the maximum allowable emission limits and other operating conditions are included in revisions to permits that are discussed elsewhere in the State Implementation Plan (SIP).

⁵ Ashland Petroleum Company, Ashland, Kentucky, *Dispersion Modeling Phase I Results: Demonstration of SO₂ Attainment for Boyd County, Kentucky*, Document Number 8505-576-400, prepared by ENSR Corporation, April 2001.

In addition to the changes for the Sunoco and Calgon facilities discussed in the following sections, some minor changes were made to correct errors found in the ENSR-developed inventory. These errors were primarily related to the locations of some of the emissions sources and changes since the inventory was developed.

- Sources at the Marathon-Ashland Marine Repair facility were incorrectly located in Ohio when they should have been located across the river in Boyd County, Kentucky.
- One of the sources at the Marathon-Ashland Marine Repair facility has been shut down and a new source has been added at the facility since the ENSR report was done.
- The ENSR report contains a typographical error for the location of one of the sources at the AK Steel Coke Plant.
- A review of the source locations at the Calgon facility indicated that some of the sources were incorrectly located by up to 200 meters.
- A natural gas-fired boiler has been added to the list of sources that are permitted at the Calgon facility.

Representatives from the KY DAQ visited these facilities and obtained accurate source locations using hand-held GPS units to correct the location errors from the ENSR Report.

Table 3 provides a list of individual emission sources modeled in this demonstration (including the revisions/updates discussed above and in the following sections). This table includes source locations in Universal Transverse Mercator coordinates (UTM), stack identifications, stack parameters, and stack emissions. Table 4 provides a cross-reference between the source identification names used in modeling files and its associated facility's names. Figure 3 illustrates the location of the modeled facilities relative to the Boyd County nonattainment area.

Revisions to Calgon Emission Sources⁶

The emission inventory for the Calgon Big Sandy facility involves emission rate and/or stack parameters (i.e., temperature, stack height) changes that will be incorporated into the facility's Title V permits. The B-Line #3 Carbon Activator (Source ID: CALEP14) will be equipped with a scrubber with a control efficiency of 90 percent (%). The SO₂ emissions from the C-Line #5 and #6 Carbon Activators (source ID: CALEP21) will be routed to a single scrubber with a 90 % control efficiency. The Calgon emission sources subject to reduced emission rates, include the following units:

- D-Line Bakers (CALEP31)
- D-Line #7 and #8 Activators (CALEP34)
- E-Line Bakers (CALEP39)
- E-Line #9 and #10 Activators (CALEP42)

Emissions from the Acid Wash Process (CALEP26) were included in the modeling for Calgon sources. These emissions were omitted from the original modeling analysis prepared by ENSR. Other changes to the Calgon modeling inventory that are different from the ENSR modeling includes

⁶ Based on July 30, 2003, letter to Stuart Ecton (KYDAQ) from L.S. Heflin of Calgon Carbon Corporation

a revisions/corrections of stack parameters, including stack heights, exhaust temperatures, and diameters, for various sources. These updates include:

- Refinement of stack exhaust temperatures for the D-Line Bakers (CALEP31) and E-Line Bakers (CALEP39) from 330 degrees Kelvin (K) to 336 K
- Refinement of the stack heights of the scrubbers controlling emissions from the B-Line Activator (CALEP14) and C-Line Activators (CALEP21) from 35 m to 36.6 m
- Refinement of the stack diameters of the scrubbers controlling emissions from the B-Line Activator (CALEP14) and C-Line Activator (CALEP21) from 0.97 m (each) to 0.9 m and 1.37 m, respectively

A final modification to the modeled sources is the renaming of the modeling ID number for the B-Line Baker Heaters. This model ID was revised from CALEP13 to CALEP12 to reflect the source identification number in the facility's current Title V permit. Each of the above changes is included in Table 3 that summarizes the updated emission inventory for the Calgon sources that was used in this modeling analysis.

Revisions to Sunoco Emission Sources

The Sunoco, Neal Facility was formerly known as the "Aristech" facility in the previous ENSR modeling analysis. The following corrections were made to the modeling input parameters used in the ENSR analysis for the Sunoco facility emission sources:

In May of 1998, a baghouse was constructed for particulate matter control of the main Coal Boiler (ENSR Source Number 0124, now ARIS001). A new stack was also constructed at this time and relocated to the northwest corner of the boiler building. The approximate UTM (zone 17) coordinates of the new stack are; Easting 360,700 meters and Northing 4,246,315 meters. The emission parameters for the new stack were also updated from the ENSR analysis and are listed in Table 3.

The back up boiler (ENSR Source Number 0125, now removed from the analysis) is a 77 mm Btu/hr natural gas fired boiler and the corresponding SO₂ emissions are therefore insignificant. For purposes of WV code 45CSR10A (monitoring and recordkeeping plans) the facility has certified that the SO₂ emissions from the natural gas fired boiler, the two propane fired boilers, and all other manufacturing sources at the facility are below the 500 lb/yr (0.0072 g/s) potential to emit threshold exemption detailed in section 3.1.c of 45CSR10A. This source was therefore incorrectly included in the ENSR modeling inventory for Sunoco.

Therefore, the only significant source of Sulfur Dioxide emissions at the Neal Facility is the 155 mmBtu/hr Stoker type coal fired boiler. This boiler was previously unpermitted and therefore had an allowable emission rate of 496 lb/hr, or 62.5 g/s (ENSR analysis).

Sunoco has since applied for, and was issued a Class I Administrative Update to establish a Federally enforceable limit on Sulfur Dioxide emissions for the coal boiler. Permit R13-1830C was issued on September 24, 2003, and established a maximum SO₂ emission rate of 282 pounds per hour, or 35.5 grams per second.

TABLE 3. BOYD COUNTY SO₂ AERMOD MODELING EMISSION INVENTORY

| SOURCE ID | EMISSION RATE
(grams/sec) | EMISSION LOCATION
X (meters) Y (meters) | | BASE ELEVATION
(meters) | STACK HEIGHT
(meters) | STACK TEMP
(deg. K) | STACK EXIT VEL.
(m/sec) | STACK DIAMETER
(meters) |
|-----------|------------------------------|--|---------|----------------------------|--------------------------|------------------------|----------------------------|----------------------------|
| CATS001 | 6.80e-01 | 360300 | 4248610 | 169 | 38.1 | 664 | 25.5 | 1.83 |
| CATS003 | 2.52e-01 | 360350 | 4248615 | 169 | 27.5 | 664 | 8.8 | 1.83 |
| CATS004 | 7.75e+00 | 360375 | 4248545 | 169 | 53.4 | 686 | 5.8 | 2.97 |
| CATS005 | 7.75e+00 | 360375 | 4248555 | 169 | 53.4 | 600 | 5.1 | 2.97 |
| CATS010 | 6.17e-01 | 360365 | 4248500 | 169 | 40.3 | 486 | 5 | 2.9 |
| CATS012 | 2.22e-01 | 360454 | 4248900 | 163 | 33.6 | 561 | 3.5 | 1.31 |
| CATS013 | 2.52e-01 | 360280 | 4248285 | 169 | 45.9 | 441 | 3 | 2.14 |
| CATS014 | 1.12e+00 | 360280 | 4248275 | 169 | 23.2 | 464 | 16.2 | 1.98 |
| CATS015 | 2.65e-01 | 360322 | 4248260 | 169 | 12.2 | 422 | 10.5 | 1.16 |
| CATS016 | 2.65e-01 | 360322 | 4248261 | 169 | 12.2 | 411 | 12.1 | 1.16 |
| CATS017 | 2.90e+02 | 360290 | 4248680 | 170 | 53.4 | 534 | 14.9 | 3.66 |
| CATS018 | 9.03e+00 | 360302 | 4247287 | 169 | 53.4 | 533 | 9 | 1.75 |
| CATS019 | 1.70e-01 | 360270 | 4247327 | 169 | 21.9 | 694 | 11.3 | 1.22 |
| CATS020 | 1.51e-01 | 360297 | 4247245 | 169 | 30.5 | 472 | 7.5 | 1.22 |
| CATS023 | 3.65e-01 | 360460 | 4247790 | 169 | 24.6 | 547 | 8.9 | 1.83 |
| CATS028 | 2.39e-01 | 360465 | 4247820 | 169 | 13.7 | 636 | 16.8 | 1.07 |
| CATS029 | 2.14e-01 | 360472 | 4247820 | 169 | 20.5 | 589 | 10.4 | 1.3 |
| CATS035 | 2.39e-01 | 360435 | 4247930 | 169 | 42.7 | 522 | 4.9 | 1.83 |
| CATS037 | 2.65e-01 | 360460 | 4247730 | 169 | 12.2 | 422 | 10.6 | 1.17 |
| CATS038 | 2.65e-01 | 360455 | 4247730 | 169 | 12.2 | 422 | 10.6 | 1.17 |
| CATS040 | 7.06e-01 | 360530 | 4248910 | 163 | 50.3 | 508 | 6.1 | 2.06 |
| CATS042 | 6.30e+00 | 360519 | 4248830 | 163 | 76.3 | 450 | 3.1 | 1.53 |
| CATS043 | 2.27e-01 | 360615 | 4248910 | 163 | 61.3 | 544 | 5.9 | 1.83 |
| CATS044 | 2.27e-01 | 360640 | 4248910 | 163 | 61.3 | 553 | 6 | 1.83 |
| CATS045 | 7.51e+00 | 360630 | 4248910 | 163 | 63.3 | 597 | 5.7 | 2.21 |
| CATS046 | 7.59e+00 | 360665 | 4248915 | 163 | 56.4 | 505 | 8.3 | 1.83 |
| CATS047 | 3.91e-01 | 360665 | 4248912 | 163 | 56.4 | 500 | 8.3 | 1.83 |
| CATS049 | 2.39e-01 | 360460 | 4247821 | 169 | 13.7 | 566 | 17.8 | 1.07 |
| CATS050 | 3.15e-01 | 360440 | 4247738 | 169 | 45.8 | 539 | 7.8 | 2.14 |
| CATS051 | 1.26e+00 | 360560 | 4248810 | 163 | 53.4 | 450 | 12.4 | 2.36 |
| CATS053 | 1.51e-01 | 360260 | 4247285 | 169 | 19.5 | 736 | 6.6 | 1.53 |
| CATS054 | 3.59e-01 | 360470 | 4247987 | 169 | 53.4 | 441 | 5.5 | 2.06 |
| CATS055 | 7.61e+00 | 360495 | 4247970 | 169 | 53.4 | 430 | 2.2 | 2.52 |
| CATS056 | 4.28e-01 | 360540 | 4248050 | 169 | 45.8 | 439 | 5.8 | 2.14 |
| CATS058 | 1.57e+01 | 360390 | 4248030 | 169 | 76.3 | 633 | 10.1 | 2.67 |
| CATS059 | 1.42e+00 | 360390 | 4248030 | 169 | 76.3 | 633 | 10.1 | 0.88 |
| CATS060 | 5.47e-01 | 360330 | 4248648 | 170 | 76.3 | 455 | 6 | 2.81 |
| CATS064 | 5.29e-01 | 360685 | 4248787 | 163 | 76.3 | 469 | 8.2 | 1.83 |
| CATS065 | 3.25e-01 | 360390 | 4248320 | 169 | 76.3 | 436 | 5 | 2.11 |
| CATS066 | 1.23e+02 | 360154 | 4248394 | 192 | 70.2 | 455 | 18.5 | 5.49 |
| CATS068 | 2.07e-01 | 360350 | 4248900 | 166 | 53.4 | 522 | 6.6 | 1.47 |
| CATS069 | 2.07e-01 | 360350 | 4248900 | 166 | 53.4 | 522 | 6.6 | 1.47 |
| CATS070 | 3.76e-01 | 360350 | 4248900 | 166 | 53.4 | 522 | 5.8 | 2.11 |
| CATS074 | 4.54e-01 | 360090 | 4248409 | 192 | 74.7 | 1089 | 12.4 | 2.29 |

TABLE 3. BOYD COUNTY SO₂ AERMOD MODELING EMISSION INVENTORY

| SOURCE ID | EMISSION RATE
(grams/sec) | EMISSION LOCATION X
(meters) | EMISSION LOCATION Y
(meters) | BASE ELEVATION
(meters) | STACK HEIGHT
(meters) | STACK TEMP
(deg. K) | STACK EXIT VEL.
(m/sec) | STACK DIAMETER
(meters) |
|-----------|------------------------------|---------------------------------|---------------------------------|----------------------------|--------------------------|------------------------|----------------------------|----------------------------|
| CATS105 | 1.81e-01 | 360450 | 4247800 | 169 | 53.4 | 569 | 4.8 | 1.59 |
| CATS109 | 5.49e-01 | 360660 | 4248740 | 163 | 54.9 | 536 | 9.1 | 2.36 |
| CATS110 | 5.87e-01 | 360660 | 4248740 | 163 | 54.9 | 533 | 8.2 | 2.36 |
| CATS111 | 4.25e-01 | 360660 | 4248740 | 163 | 54.9 | 511 | 7.4 | 2.36 |
| CATS114 | 4.55e+00 | 360400 | 4248900 | 163 | 65 | 546 | 7.6 | 1.07 |
| CATS120 | 1.15e+00 | 360352 | 4247800 | 169 | 65 | 533 | 8.5 | 3.53 |
| CATSVC4 | 4.85e-01 | 360296 | 4248600 | 169 | 53.4 | 533 | 7 | 2.17 |
| MAREP02 | 7.69e-01 | 359999 | 4254875 | 171 | 7.6 | 519 | 12 | 0.5 |
| MAREP03 | 9.07e-01 | 359997 | 4254878 | 171 | 6.7 | 561 | 7 | 0.5 |
| MAREP17 | 1.04e-03 | 539991 | 4254885 | 174 | 7.6 | 533 | 28.3 | 0.61 |
| KENELE4 | 1.39e+01 | 345500 | 4248000 | 185 | 21 | 533 | 2.6 | 2.1 |
| CALEP11 | 1.12e+00 | 361130 | 4244253 | 167.6 | 23 | 336 | 13.4 | 1.22 |
| CALEP12 | 2.15e-01 | 361120 | 4244208 | 167.6 | 7 | 533 | 3 | 0.5 |
| CALEP14 | 3.63e-01 | 361127 | 4244198 | 167.6 | 36.6 | 361 | 21.3 | 0.9 |
| CALEP21 | 9.73e-01 | 361138 | 4244260 | 167.6 | 36.6 | 361 | 21.3 | 1.37 |
| CALEP24 | 1.41e-01 | 361036 | 4244236 | 167.6 | 9 | 505 | 3 | 0.4 |
| CALEP26 | 1.61e-01 | 361152 | 4244241 | 167.6 | 10 | 378 | 16.8 | 0.57 |
| CALEP31 | 1.89e+00 | 361230 | 4244006 | 167.6 | 28 | 336 | 15.5 | 1.52 |
| CALEP32 | 2.15e-01 | 361203 | 4244032 | 167.6 | 9 | 533 | 3.1 | 0.46 |
| CALEP34 | 1.89e+00 | 361142 | 4244102 | 167.6 | 35 | 361 | 21.3 | 0.97 |
| CALEP39 | 1.89e+00 | 361199 | 4243988 | 167.6 | 37 | 336 | 15.5 | 1.27 |
| CALEP40 | 1.00e+00 | 361181 | 4244023 | 167.6 | 9 | 533 | 3.1 | 0.46 |
| CALEP42 | 1.89e+00 | 361120 | 4244076 | 167.6 | 28 | 361 | 21.3 | 0.97 |
| CALEP45 | 2.65e+00 | 360937 | 4244367 | 167.6 | 30 | 436 | 18.3 | 0.84 |
| CALEP64 | 2.01e-03 | 361130 | 4244253 | 167.6 | 4.9 | 505 | 28.4 | 0.76 |
| EIDUP01 | 1.13e+02 | 344000 | 4268800 | 165.8 | 60 | 348 | 10 | 1.8 |
| KYPOWU1 | 8.99e+02 | 359000 | 4226200 | 173.1 | 251.8 | 434 | 27 | 8.6 |
| KYPOWU2 | 9.83e+02 | 359000 | 4226200 | 173.1 | 251.8 | 434 | 27 | 8.6 |
| TNGAB1C | 7.70e-02 | 362100 | 4236800 | 175.3 | 8.3 | 755 | 54.9 | 0.52 |
| TNGASB2C | 7.70e-02 | 362100 | 4236800 | 175.3 | 8.3 | 755 | 54.9 | 0.52 |
| TNGASB3C | 7.70e-02 | 362100 | 4236800 | 175.3 | 8.3 | 755 | 54.9 | 0.52 |
| TNGASB4C | 7.70e-02 | 362100 | 4236800 | 175.3 | 8.3 | 755 | 54.9 | 0.52 |
| TNGASB5C | 7.70e-02 | 362100 | 4236800 | 175.3 | 8.3 | 755 | 54.9 | 0.52 |
| TNGASB6C | 7.80e-02 | 362100 | 4236800 | 175.3 | 8.4 | 755 | 54.9 | 0.52 |
| TNGASB7C | 7.80e-02 | 362100 | 4236800 | 175.3 | 8.4 | 755 | 54.9 | 0.52 |
| TNGASB1A | 2.10e-02 | 362100 | 4236800 | 175.3 | 8.5 | 755 | 54.9 | 0.21 |
| TNGASB2A | 2.10e-02 | 362100 | 4236800 | 175.3 | 8.5 | 755 | 54.9 | 0.21 |
| TNGASB3A | 2.10e-02 | 362100 | 4236800 | 175.3 | 8.5 | 755 | 54.9 | 0.21 |
| AKASHB2 | 3.92e+01 | 354150 | 4262420 | 167 | 60 | 1923 | 59 | 6 |
| AKASHB1 | 2.34e+02 | 354160 | 4262410 | 167 | 61 | 394 | 9 | 3.9 |
| AKASHE5 | 3.31e+01 | 354780 | 4261960 | 167 | 27 | 408 | 17 | 5.5 |
| AKASHG3 | 1.23e+02 | 354100 | 4262590 | 167 | 24 | 533 | 15 | 2.4 |
| AKASHG4 | 1.23e+02 | 354110 | 4262580 | 167 | 24 | 533 | 15 | 2.4 |
| AKASHG5 | 1.23e+02 | 354120 | 4262570 | 167 | 24 | 533 | 15 | 2.4 |
| AKASHG6 | 2.52e+01 | 354110 | 4262560 | 167 | 28 | 533 | 20 | 2.2 |

TABLE 3. BOYD COUNTY SO₂ AERMOD MODELING EMISSION INVENTORY

| SOURCE ID | EMISSION RATE
(grams/sec) | EMISSION LOCATION
X (meters) Y (meters) | | BASE ELEVATION
(meters) | STACK HEIGHT
(meters) | STACK TEMP
(deg. K) | STACK EXIT VEL.
(m/sec) | STACK DIAMETER
(meters) |
|-----------|------------------------------|--|---------|----------------------------|--------------------------|------------------------|----------------------------|----------------------------|
| AKASHC1 | 4.65e+01 | 354180 | 4262490 | 167 | 47 | 338 | 25 | 0.5 |
| AKCOK09 | 1.94e+00 | 359430 | 4257490 | 167.6 | 56 | 533 | 7 | 2.9 |
| AKCOK15 | 2.85e+00 | 359610 | 4257350 | 167.6 | 67 | 533 | 5 | 3.7 |
| AKCOK19 | 1.18e+01 | 359430 | 4257710 | 167.6 | 76 | 741 | 7 | 1.5 |
| AKCOK20 | 6.19e+01 | 359500 | 4257570 | 167.6 | 76 | 527 | 8 | 3.4 |
| AKCOK21 | 6.19e+01 | 359500 | 4257570 | 167.6 | 76 | 527 | 8 | 3.4 |
| AKCOK22 | 6.19e+01 | 359500 | 4257570 | 167.6 | 76 | 527 | 8 | 3.4 |
| AKCOK23 | 1.11e+01 | 359490 | 4257550 | 167.6 | 14 | 490 | 10 | 1.4 |
| AKCOK24 | 5.74e+00 | 359549 | 4257805 | 167.6 | 25 | 811 | 11 | 0.8 |
| AKCOK26 | 5.03e-01 | 359460 | 4257960 | 167.6 | 17 | 1228 | 2 | 3.2 |
| ASHOB001 | 2.37e+00 | 355100 | 4262900 | 164.7 | 19.2 | 533 | 33 | 1.1 |
| ASHOB002 | 4.27e+00 | 355100 | 4262900 | 164.7 | 19.2 | 489 | 43.1 | 1.2 |
| ASHOB003 | 2.37e+00 | 355100 | 4262900 | 164.7 | 19.2 | 555 | 33 | 1.1 |
| ASHOB004 | 2.99e+00 | 355100 | 4262900 | 164.7 | 30.5 | 478 | 13.9 | 0.8 |
| ASHOB005 | 1.42e+00 | 355200 | 4262900 | 164.7 | 25.9 | 633 | 38.2 | 1.1 |
| ASHOB006 | 1.32e+00 | 355200 | 4262900 | 164.7 | 29.3 | 497 | 26.5 | 0.9 |
| ASHOB011 | 4.40e-01 | 355200 | 4262900 | 164.7 | 9.9 | 550 | 78.9 | 0.4 |
| ASHOB012 | 7.49e-01 | 355200 | 4262900 | 164.7 | 9.6 | 569 | 81.3 | 0.6 |
| ARHAUTO | 1.38e+01 | 342000 | 4273000 | 166 | 15.2 | 450 | 15 | 1.52 |
| ARHAUTO | 1.38e+01 | 342000 | 4273000 | 166 | 15.2 | 450 | 15 | 1.52 |
| ARHAUTO | 3.69e+01 | 342000 | 4273000 | 166 | 15.2 | 450 | 15 | 1.52 |
| ARHAUTO | 3.67e+01 | 342000 | 4273000 | 166 | 15.2 | 439 | 8.8 | 1.98 |
| ARHAUTO | 3.67e+01 | 342000 | 4273000 | 166 | 15.2 | 439 | 8.8 | 1.98 |
| NEWBB008 | 2.40e+02 | 332700 | 4291000 | 165 | 38.1 | 505.4 | 16 | 2.74 |
| NEWBB009 | 2.40e+02 | 332700 | 4291000 | 165 | 38.1 | 505.4 | 16 | 2.74 |
| NEWBB901 | 9.10e+01 | 332700 | 4290900 | 165 | 4 | 1366.5 | 4 | 2.74 |
| IRONCZ | 1.69e+00 | 354520 | 4263730 | 165 | 29 | 749.8 | 22.3 | 1.52 |
| IRON2 | 8.31e-01 | 354480 | 4263800 | 165 | 14.5 | 302.6 | 15.2 | 1.32 |
| IRONDMEA | 1.97e+00 | 354430 | 4263870 | 165 | 14.6 | 293.2 | 20.7 | 0.66 |
| IRON4 | 1.97e+00 | 354510 | 4263770 | 165 | 14.6 | 310.9 | 19.8 | 1.52 |
| IRON47 | 1.44e+00 | 354560 | 4263680 | 165 | 17.4 | 422 | 11.5 | 0.91 |
| IRON51 | 1.44e+00 | 354590 | 4263640 | 165 | 14.3 | 588.7 | 7.9 | 0.71 |
| IRON86 | 1.44e+00 | 354620 | 4263600 | 165 | 15.9 | 338.7 | 16.4 | 0.81 |
| SWVA001 | 1.76e+00 | 375030 | 4253800 | 167.8 | 25 | 325 | 26.5 | 2.4 |
| SWVA008 | 1.76e+00 | 375030 | 4253800 | 167.8 | 7.3 | 325 | 19.3 | 2.62 |
| SWVA009 | 1.42e-01 | 375030 | 4253800 | 167.8 | 25 | 325 | 26.5 | 2.4 |
| ARIS001 | 3.55e+01 | 360700 | 4246315 | 182.9 | 33.9 | 459 | 19.6 | 1.22 |

Table 4. Source Identification Cross-Reference Table

| Facility name | Modeling ID prefix |
|---|--------------------|
| Marathon-Ashland Oil-Catlettsburg | CATS |
| Marathon-Ashland Marine Repair Terminal | MARE |
| Kentucky Electric Steel | KENELE |

| Facility name | Modeling ID prefix |
|---------------------------|--------------------|
| Calgon Carbon – Big Sandy | CALEP |
| EI Dupont | EIDUP |
| Kentucky Power | KYPOWU |
| Tennessee Gas Pipeline | TNGAS |
| AK Steel Ashland | AKASH |
| AK Steel Coke Plant | AKCOK |
| Allied Signal/Honeywell | ASHO |
| Aris/Haverhill | ARHA |
| New Boston Coke | NEWB |
| Ironton Iron | IRON |
| SWVA, Inc. | SWVA |
| Sunoco | ARIS |

Background Ambient Air Quality Data

Background ambient air quality data are required to be added to the model predicted concentrations to demonstrate compliance with the National Ambient Air Quality Standards (NAAQS). These data represent the impacts of emissions from natural sources, nearby sources not explicitly modeled, and unidentified sources. The ambient air quality monitored data from the Holt Street/FIVCO Health Department sulfur dioxide monitor located in Ashland, Kentucky was used to develop the background concentrations. This site represents a regional monitor for the sources in the modeling impact area (see Figure 1 for the location of this monitor). It was chosen primarily because it is not heavily influenced by the major facilities of concern in our modeling analysis (i.e., Calgon Carbon, Sunoco, and Marathon-Ashland). Hourly ambient air quality data from this monitor for 2001 and 2002 were averaged to develop the 3-hour, 24-hour and annual background concentrations. The maximum high-second-high averaged concentration was used as background concentration for the 3-hour and 24-hour SO₂ averaging periods. The maximum annual concentration was used for the annual averaging period. Table 5 illustrates the ambient air quality background concentrations used in the modeling demonstration. The background ambient air quality concentrations plus the modeled concentrations must be equal to or less than the EPA NAAQS to demonstrate attainment for the nonattainment area.

| Averaging period | Background concentration (ug/m ³) |
|------------------|---|
| 3-hour | 103.4 |
| 24-hour | 43.2 |
| Annual | 11.0 |

Modeling Results

The AERMOD modeling analysis indicates that SO₂ concentrations are below the 3-hour, 24-hour, and annual NAAQS limits. This indicates compliance with each of the SO₂ NAAQS. Table 6 provides a summary of the modeling results. Figure 6 illustrates the locations of the 3-hour highest-second-high (HSH), 24-HSH and annual modeled concentrations. Figures 7, 8, and 9 provide isopleths of the initial coarse grid (1000 m spacing) modeling results. Figure 10 illustrates a plot of the isopleths of HSH modeled concentrations (ug/mg₃) within the modeling fine grid indicated for the 3-hour compliance test. Figure 11 illustrates isopleths of maximum HSH modeled concentrations (ug/mg₃) within the modeling fine grid for the 24-hour compliance test. Figure 12 illustrates isopleths of maximum-modeled concentrations (ug/mg₃) for the annual compliance test. The locations of the highest modeled concentrations (i.e., HSH for 3- and 24-hour averaging periods and maximum annual) are indicated by an “+” in these figures. The modeling analysis indicates that the existing emissions explicitly modeled for facilities included in the modeling inventory along with the current emission rates and operational changes expected to occur at the Sunoco and Calgon facilities are sufficient with the background ambient air quality concentrations to demonstrate compliance with and attainment of the EPA SO₂ for the Boyd County, Kentucky SO₂ nonattainment area.

| Table 6. Summary of SO₂ Modeling Results for Boyd County, Kentucky Nonattainment Area | | | | | |
|---|-------------|---|---|---|---------------------------------|
| Averaging Period | Rank | Max Modeled Concentration (ug/m₃) | Regional Background Concentration (ug/m₃) | Total Concentration (ug/m₃) | NAAQS (ug/m₃) |
| 3-hour | HSH | 1060.18 | 103.4 | 1163.58 | 1300 |
| 24-hour | HSH | 306.26 | 43.2 | 349.46 | 365 |
| Annual | H | 65.77 | 11.0 | 76.77 | 80 |

V. Computer Modeling Archive

An archive of all computer-modeling files is attached and available on the attached CD. The following is a description of the files included:

Directory:\BPIP-PRIME – contains all input and output files for the BPIP-PRIME program.

Directory:\AERMET – contains all input and output files for the AERMET preprocessor.

Directory:\AERMAP -- contains all input and output files for the AERMAP preprocessor.

Directory:\AERMOD – contains all input and output files for the AERMOD model.

Directory:\Surface Characteristics – contains spreadsheet used to determine the surface parameters: albedo, surface roughness, Bowen ratio.

Figure 1.
Meteorological Stations and
Background SO2 Monitor Locations

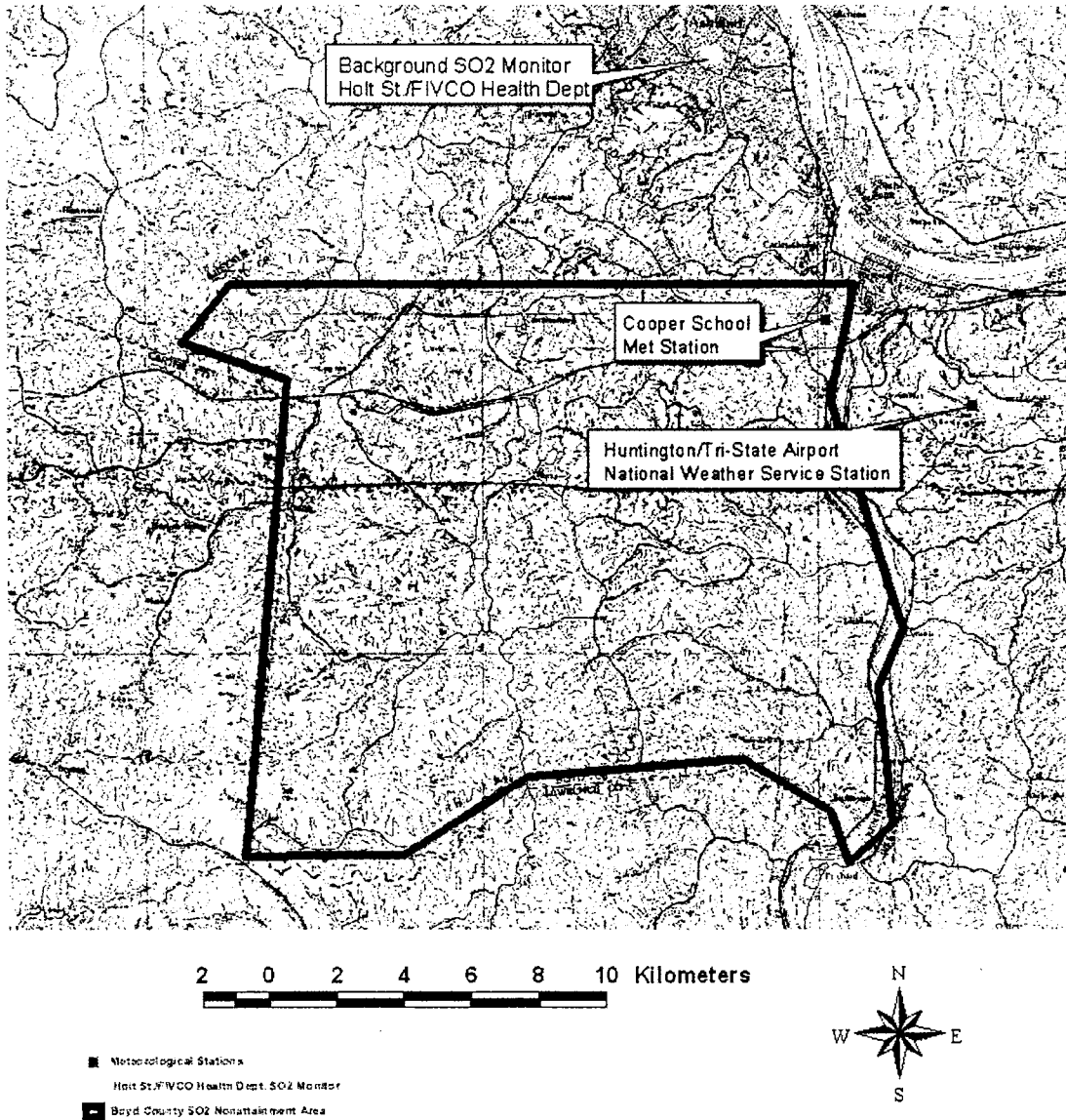


Figure 1.1
1991 Annual Wind Rose
Cooper School Meteorological Data

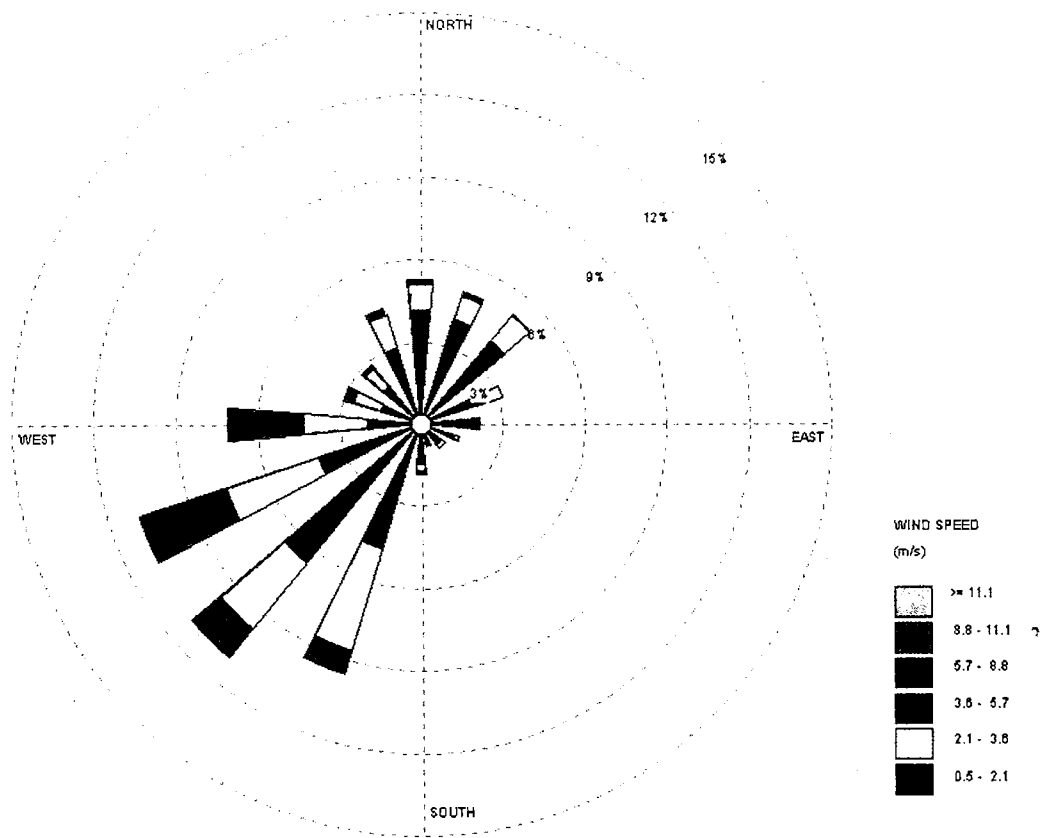


Figure 2. Cooper School Land Use

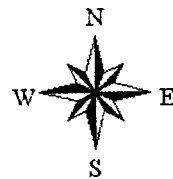
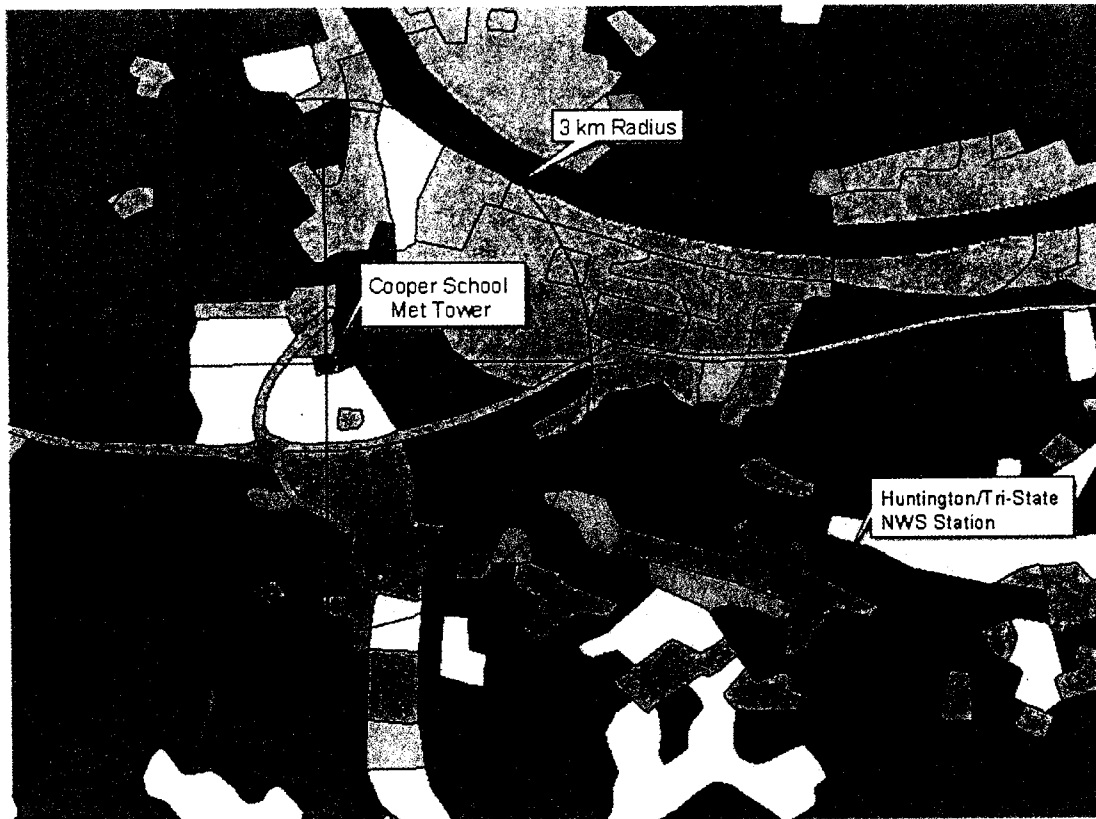
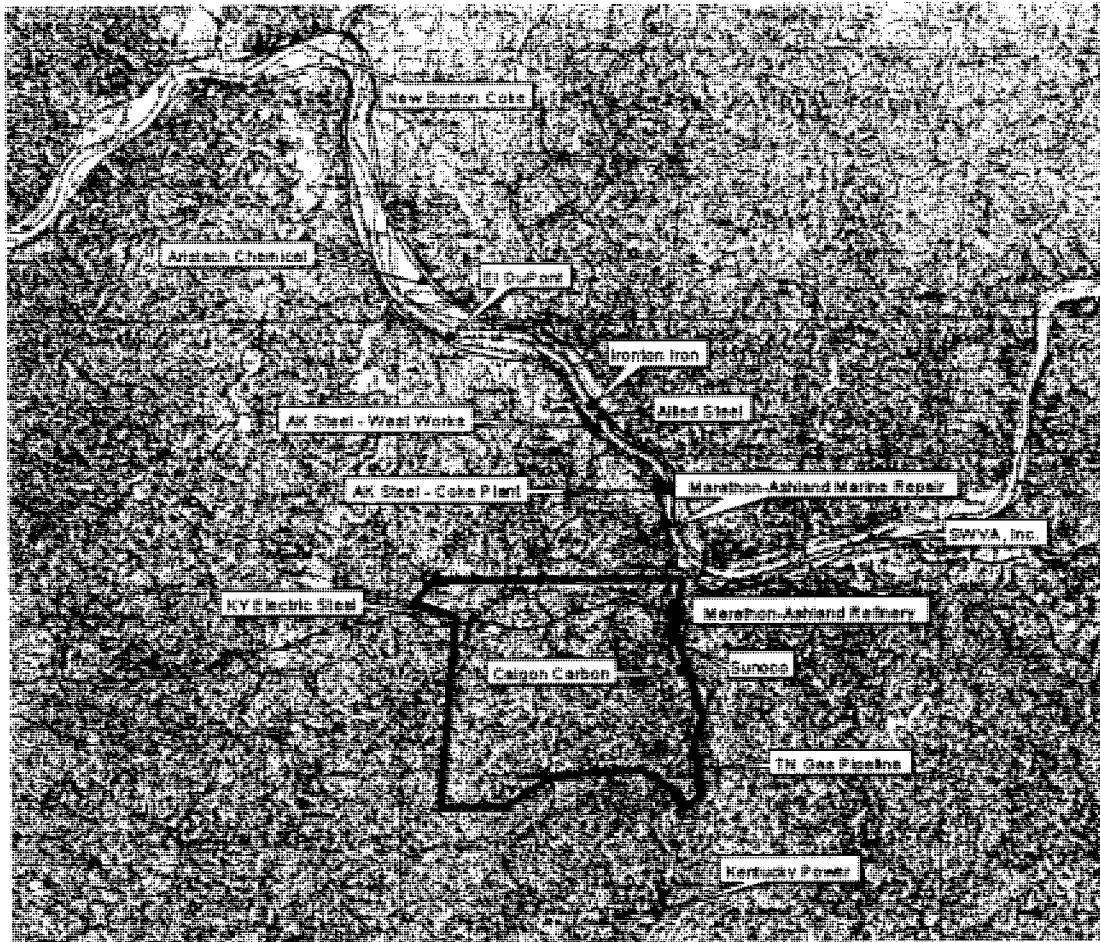


Figure 3.
SO2 Emission Sources and
Boyd County Non-attainment Area



8 0 8 16 Kilometers



▲ SO2 Emission Sources
 ■ Boyd County SO2 Nonattainment Area

Figure 3.1
Topographic Contours Covering
the Final Modeling Receptor Grid

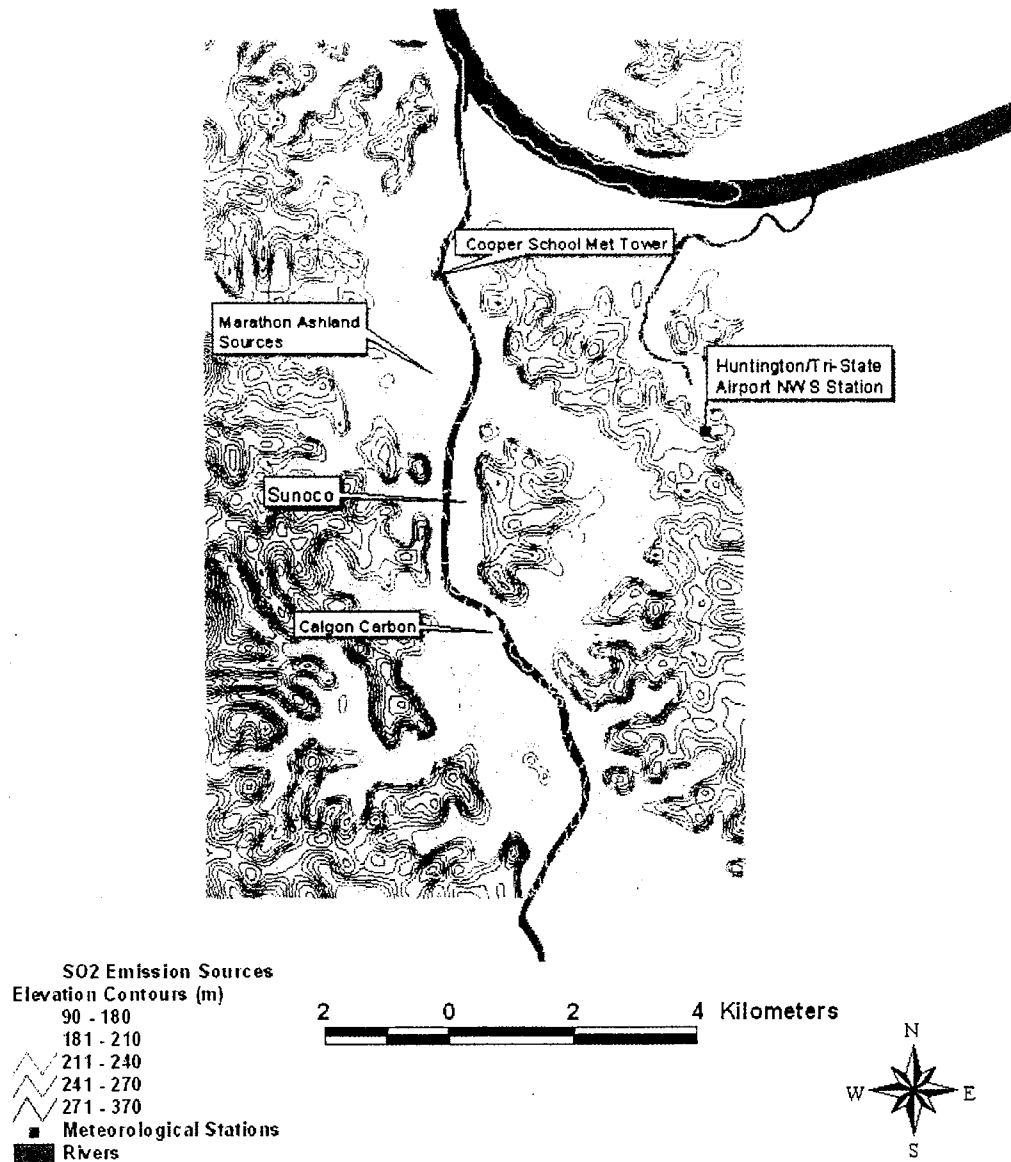
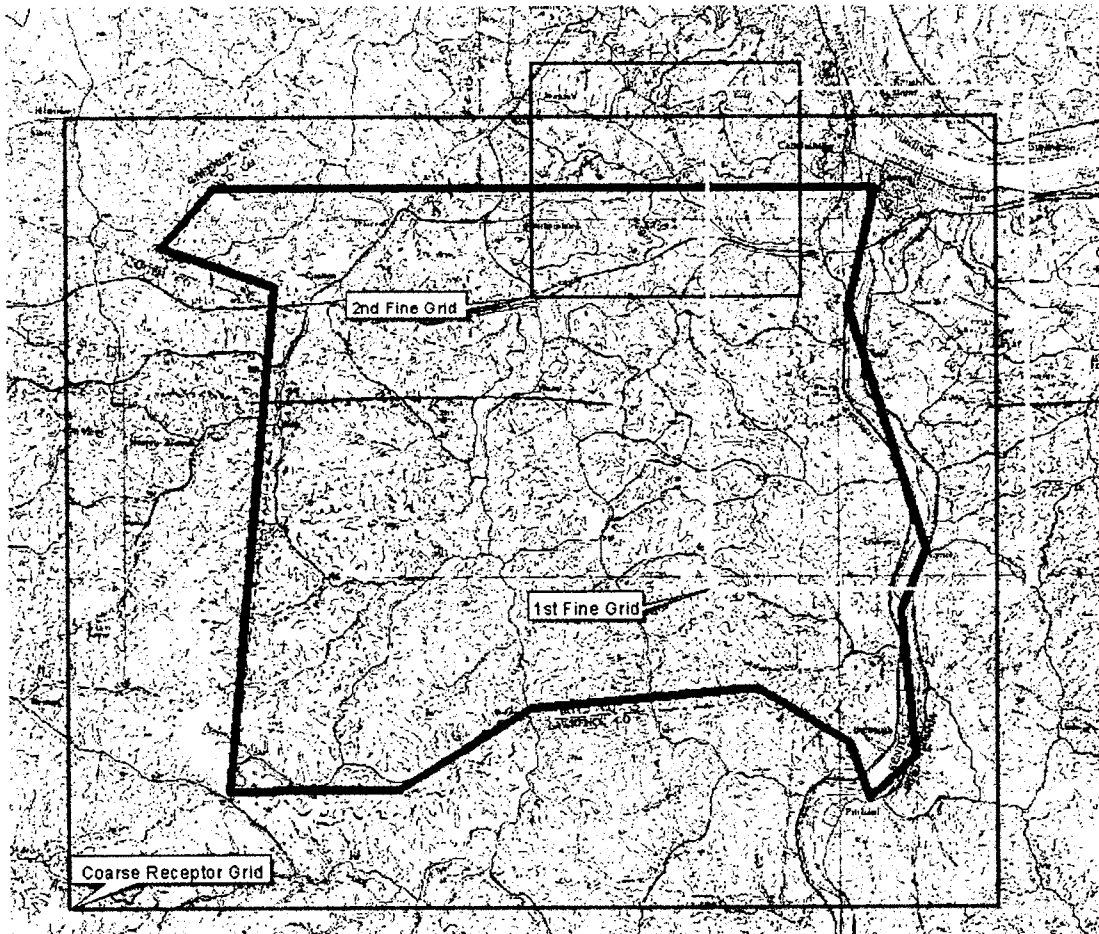


Figure 4. Receptor Grids



- Area of Coarse Grid
- Area of 1st Fine Grid
- Area of 2nd Fine Grid
- Boyd County SO₂ Nonattainment Area

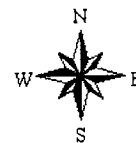
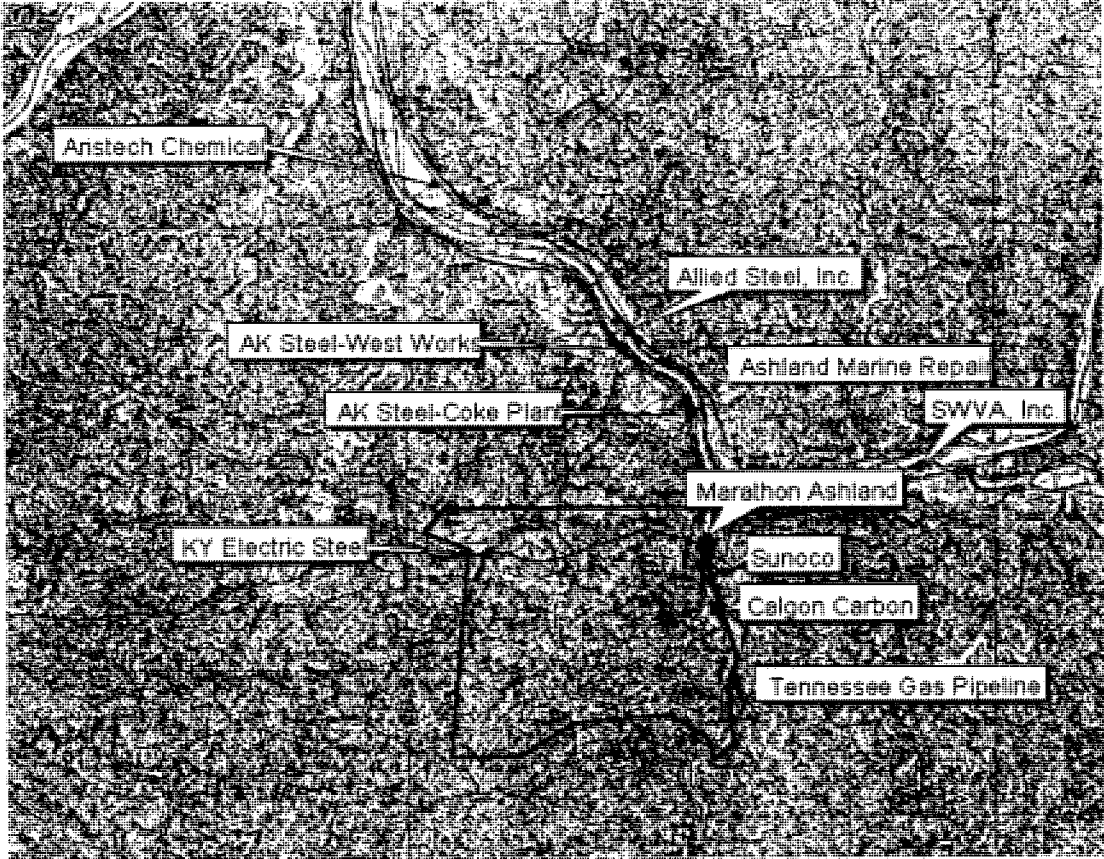


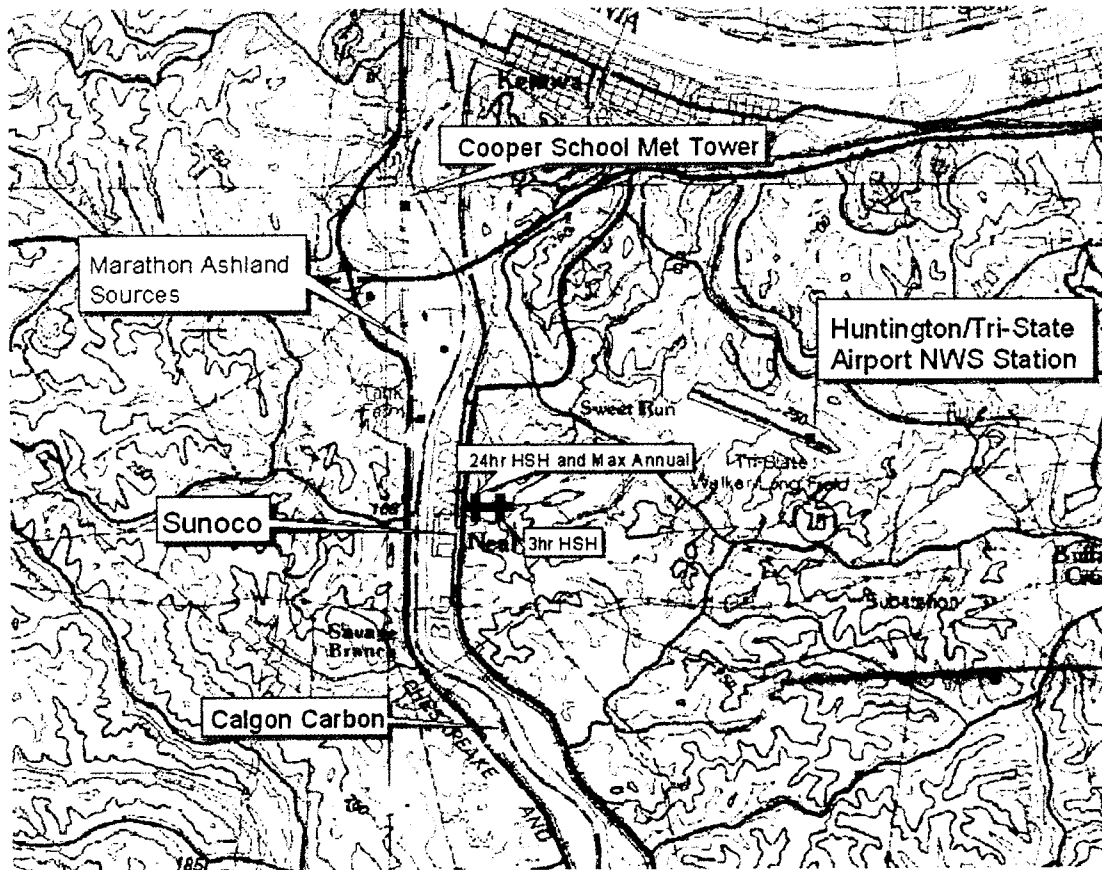
Figure 5.
Sources Modeled for
Building Downwash



20 0 20 Kilometers



Figure 6.
Locations of Modeled 3hr and 24hr
High-Second-High and Maximum
Annual Concentrations

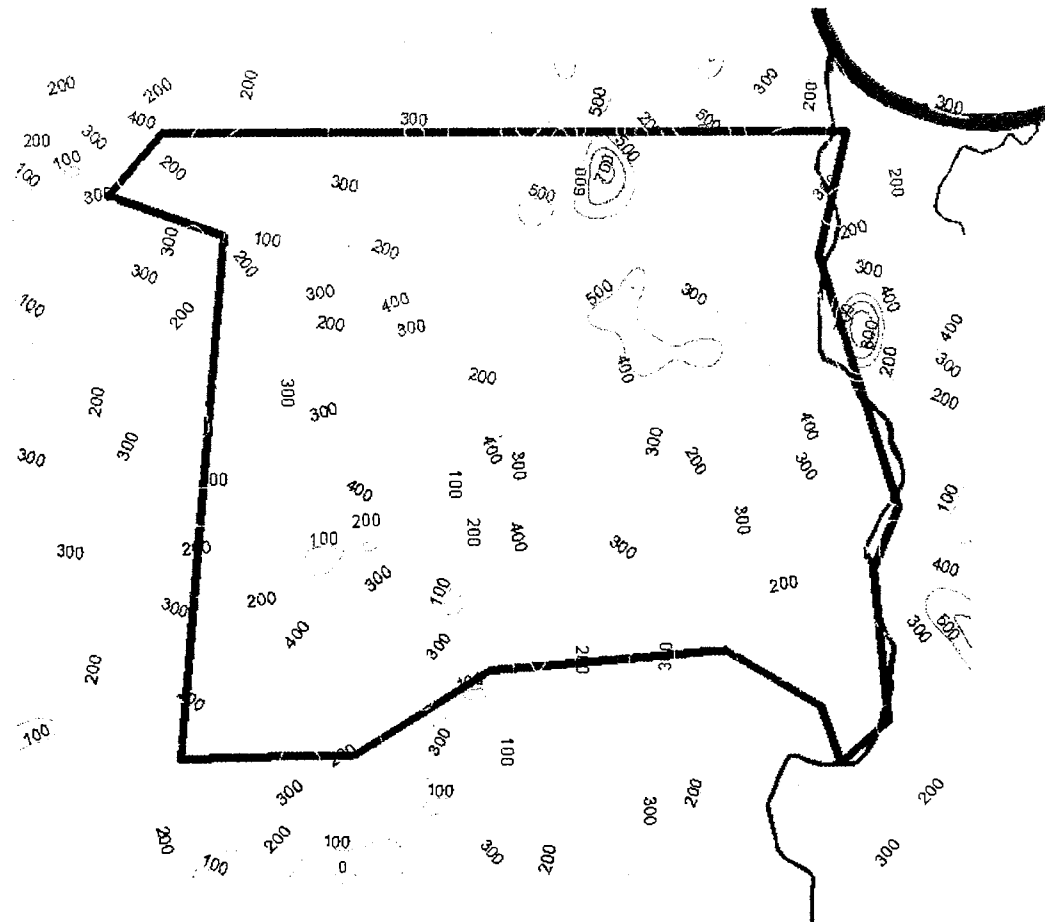


- SO₂ Emission Sources
- ⊕ 3hr HSH Concentration
 - ⊕ Maximum Annual Concentration
 - ⊕ 24hr HSH Concentration
 - Meteorological Stations

1 0 1 2 Kilometers





**Figure 7.
Coarse Grid 3hr HSH
Concentration Isopleths**



3hr HSH Concentration Isopleths

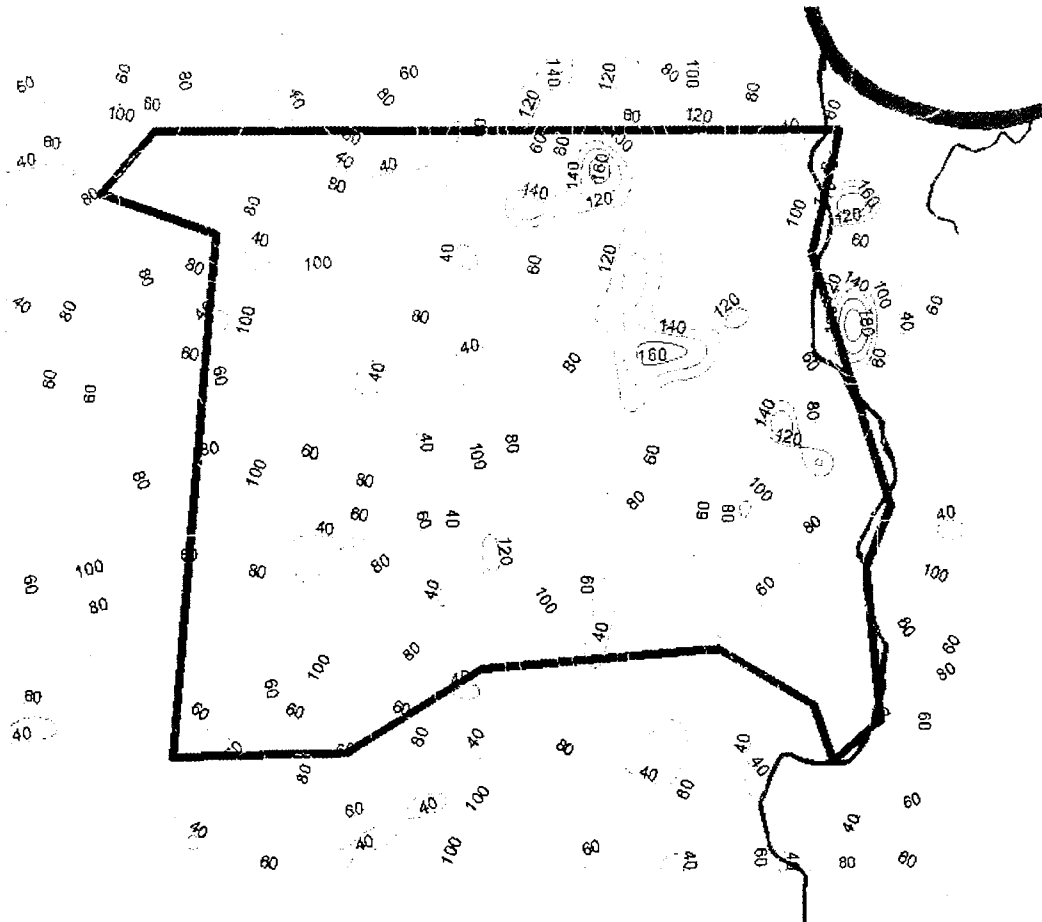
- 0 - 100
- 101 - 200
- 201 - 300
- 301 - 400
- 401 - 500
- 501 - 700

-  Boyd County SO2 Nonattainment Area
-  Rivers

3 0 3 6 Kilometers



Figure 8.
Coarse Grid 24hr HSH
Concentration Isopleths



24hr HSH Concentration Isopleths

- 40
- 41 - 60
- 61 - 80
- 81 - 100
- 101 - 140
- 141 - 180

Boyd County SO₂ Nonattainment Area
Rivers

3 0 3 6 Kilometers

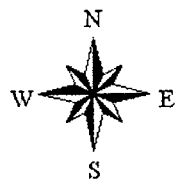
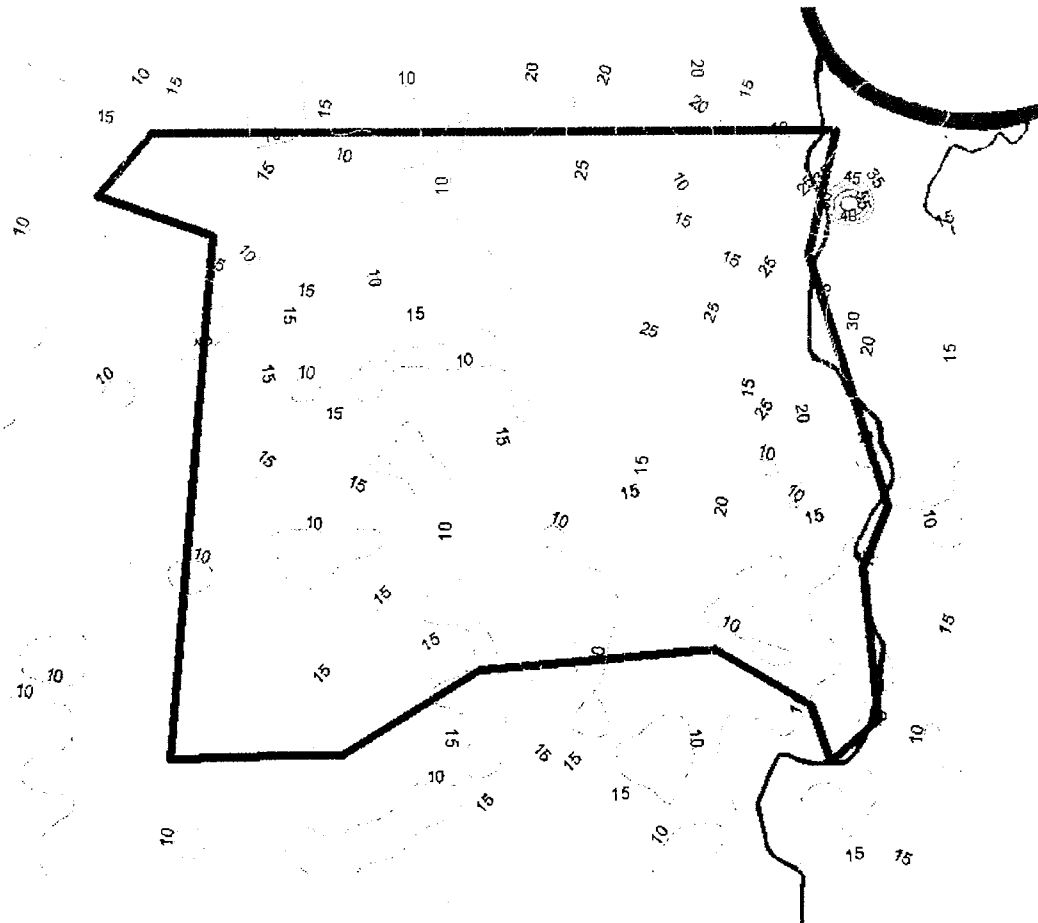


Figure 9.
Coarse Grid Maximum Annual
Concentration Isopleths



Max Annual Concentration Isopleths

- 10
- 11 - 15
- 16 - 25
- 26 - 35
- 36 - 45
- 46 - 55

3 0 3 6 Kilometers

Boyd County SO₂ Nonattainment Area
Rivers

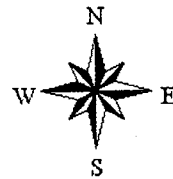


Figure 10.
3hr HSH Concentration Isopleths

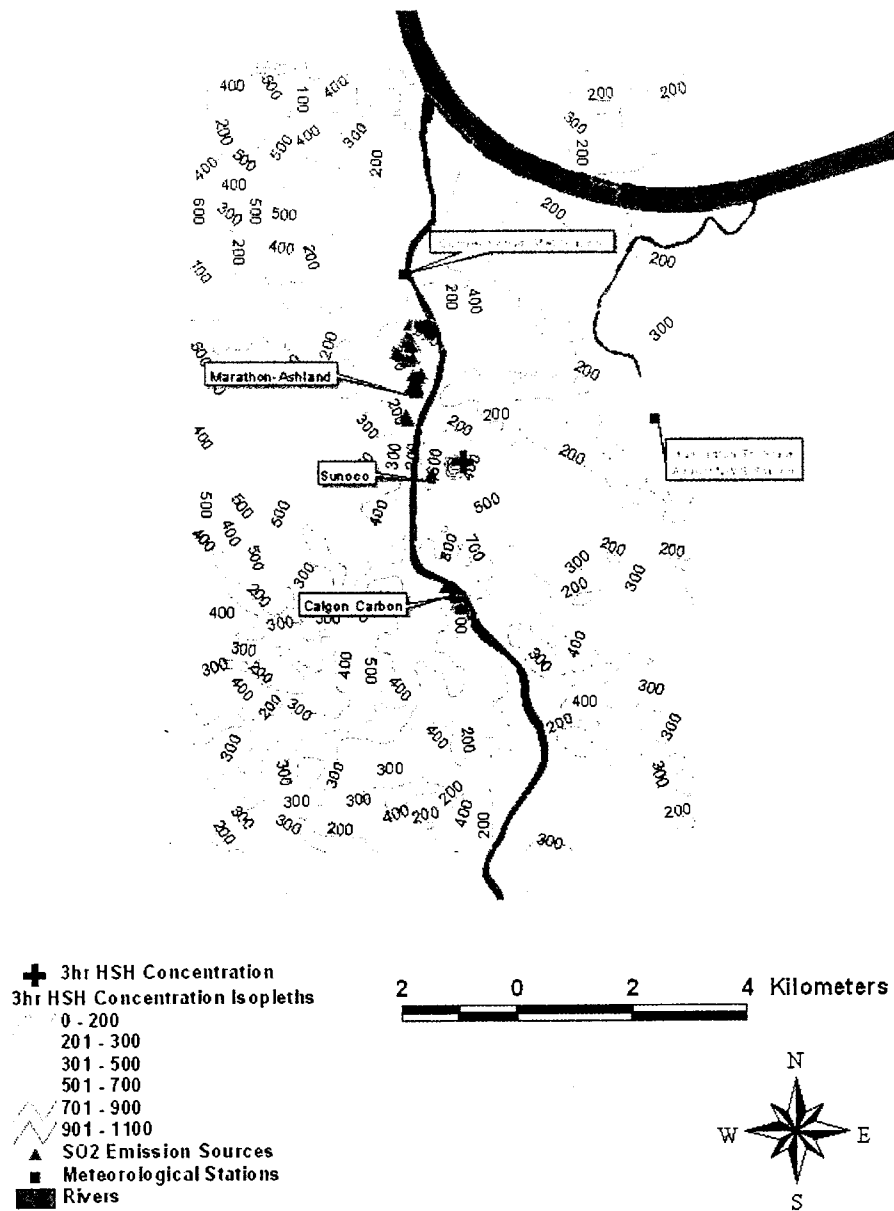


Figure 11.
24hr HSH Concentration Isopleths

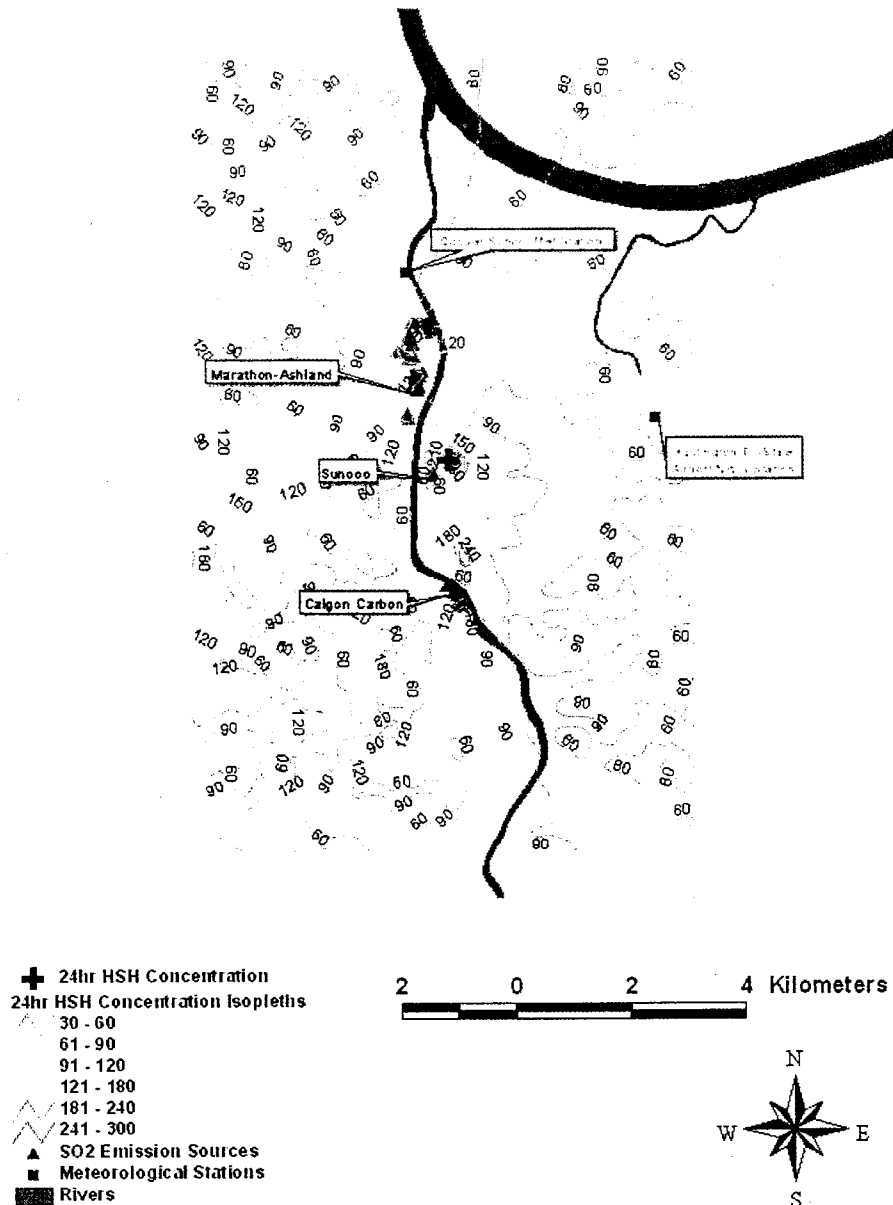
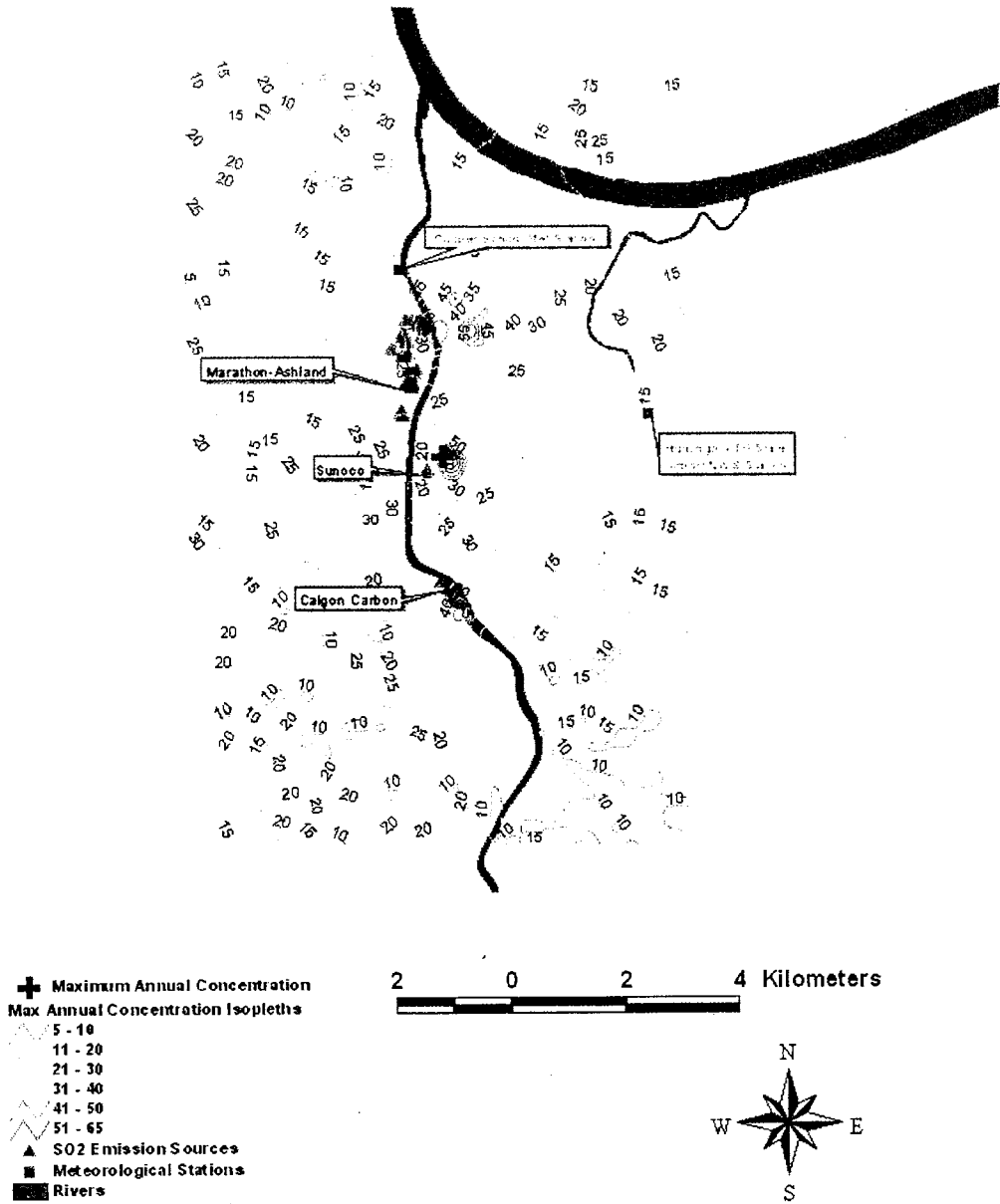


Figure 12. Maximum Annual Concentration Isopleths



***** THE SUMMARY OF HIGHEST 24-HR RESULTS *****

**** CONC OF SO2 IN MICROGRAMS/M**3****

DATE

NETWORK

GROUP ID AVERAGE CONC (YYMMDDHH) RECEPTOR
(XR, YR, ZELEV, ZHILL, ZFLAG) OF TYPE GRID-ID

SWVA HIGH 1ST HIGH VALUE IS 1.37738c ON 91052124: AT (364250.00,
4252000.00, 242.37, 242.37, 0.00) DC

 HIGH 2ND HIGH VALUE IS 1.06161c ON 91052024: AT (365250.00,
4253500.00, 242.00, 274.00, 0.00) DC

ARISNEAL HIGH 1ST HIGH VALUE IS 296.43143c ON 91090324: AT (
361000.00, 4246750.00, 258.23, 258.23, 0.00) DC

 HIGH 2ND HIGH VALUE IS 270.65991c ON 91091024: AT (361000.00,
4246750.00, 258.23, 258.23, 0.00) DC

ALL HIGH 1ST HIGH VALUE IS 320.56976c ON 91090324: AT (361000.00,
4246750.00, 258.23, 258.23, 0.00) DC

HIGH 2ND HIGH VALUE IS 306.65833c ON 91122524: AT (361000.00,
4246750.00, 258.23, 258.23, 0.00) DC

PLUS BACKGROUND: 306.658 + 43.2 = 349.858 ug/m³ NAAQS = 365 ug/m³

***** THE SUMMARY OF HIGHEST 3-HR RESULTS *****

**** CONC OF SO2 IN MICROGRAMS/M**3****

DATE
NETWORK
GROUP ID AVERAGE CONC (YYMMDDHH) RECEPTOR
(XR, YR, ZELEV, ZHILL, ZFLAG) OF TYPE GRID-ID

SWVA HIGH 1ST HIGH VALUE IS 7.40733 ON 91062406: AT (365250.00,
4248750.00, 242.00, 279.00, 0.00) DC
HIGH 2ND HIGH VALUE IS 4.96638 ON 91102906: AT (365000.00,
4245250.00, 258.36, 280.00, 0.00) DC

ARISNEAL HIGH 1ST HIGH VALUE IS 1225.02783 ON 91012703: AT (361250.00,
4246750.00, 266.72, 280.00, 0.00) DC
HIGH 2ND HIGH VALUE IS 1052.39905 ON 91120506: AT (361250.00,
4246750.00, 266.72, 280.00, 0.00) DC

ALL HIGH 1ST HIGH VALUE IS 1233.57996 ON 91012703: AT (361250.00,
4246750.00, 266.72, 280.00, 0.00) DC
HIGH 2ND HIGH VALUE IS 1060.1773 ON 91120506: AT (361250.00,
4246750.00, 266.72, 280.00, 0.00) DC

PLUS BACKGROUND: 1,060.177 + 103.4 = 1,163.57 ug/m³ NAAQS = 1,300 ug/m³

***** THE SUMMARY OF MAXIMUM PERIOD ANNUAL RESULTS *****

**** CONC OF SO2 IN MICROGRAMS/M**3**

**

| GROUP ID | AVERAGE CONC | NETWORK |
|---------------|-----------------|--------------------------|
| ZHILL, ZFLAG) | OF TYPE GRID-ID | RECEPTOR (XR, YR, ZELEV, |

ALL 1ST HIGHEST VALUE IS 66.10043 AT (361000.00, 4246750.00,
258.23, 258.23, 0.00) DC

2ND HIGHEST VALUE IS 57.91052 AT (361500.00, 4249000.00, 260.33,
260.33, 0.00) DC

3RD HIGHEST VALUE IS 57.91052 AT (361500.00, 4249000.00, 260.33,
260.33, 0.00) DC

4TH HIGHEST VALUE IS 57.31047 AT (361250.00, 4246750.00, 266.72,
280.00, 0.00) DC

5TH HIGHEST VALUE IS 53.28861 AT (361250.00, 4246500.00, 267.67,
267.67, 0.00) DC

6TH HIGHEST VALUE IS 52.25338 AT (361000.00, 4246500.00, 231.67,
280.00, 0.00) DC

7TH HIGHEST VALUE IS 51.99730 AT (361250.00, 4244000.00, 175.05,
206.00, 0.00) DC

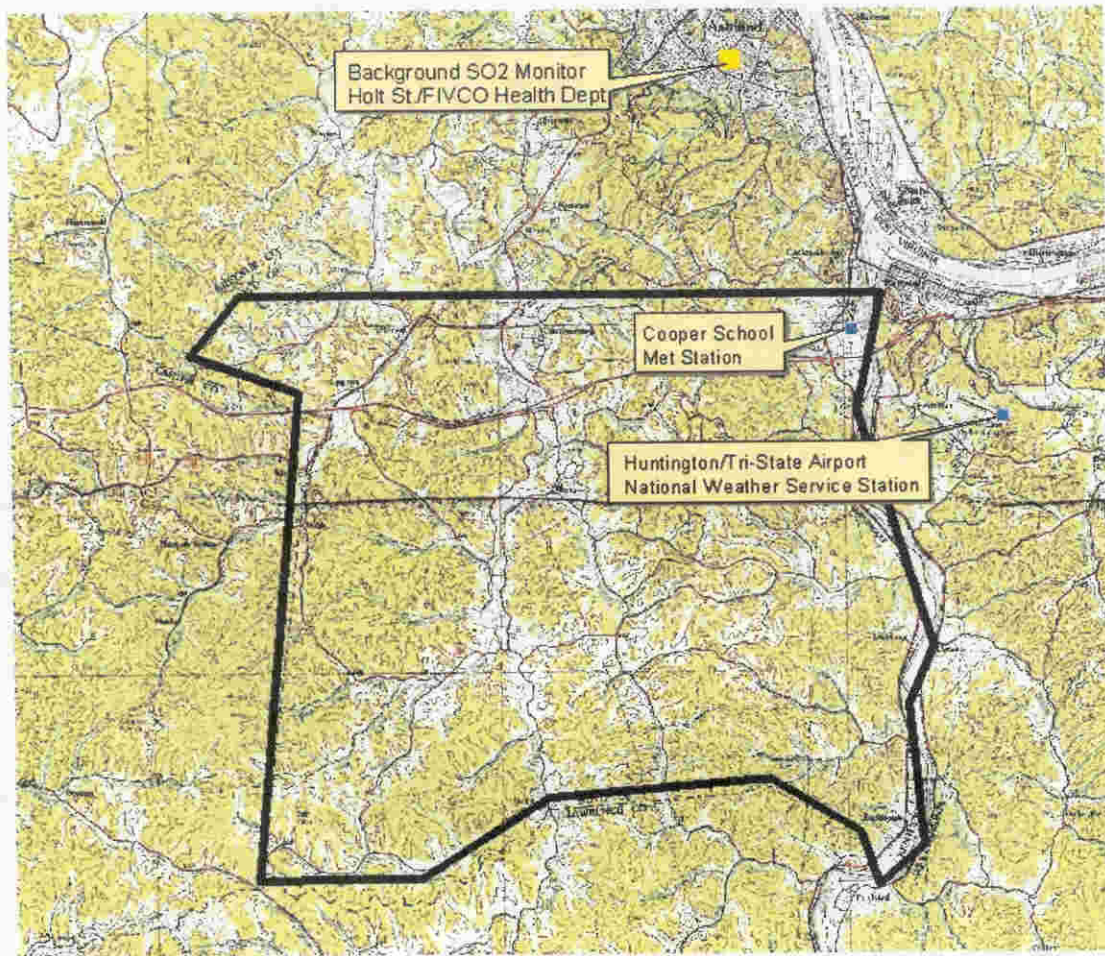
8TH HIGHEST VALUE IS 51.58942 AT (361500.00, 4248750.00, 258.00,
258.00, 0.00) DC

9TH HIGHEST VALUE IS 50.78329 AT (361250.00, 4249500.00, 251.00,
251.00, 0.00) DC

10TH HIGHEST VALUE IS 47.71292 AT (361000.00, 4249000.00, 174.64,
272.00, 0.00) DC

PLUS BACKGROUND: 66.1 + 11.0 = 77.1 ug/m³ NAAQS = 80 ug/m³

Figure 1.
Meteorological Stations and
Background SO2 Monitor Locations



2 0 2 4 6 8 10 Kilometers



- Meteorological Stations
- Holt St./FIVCO Health Dept. SO2 Monitor
- Boyd County SO2 Nonattainment Area

Figure 1.1
1991 Annual Wind Rose
Cooper School Meteorological Data

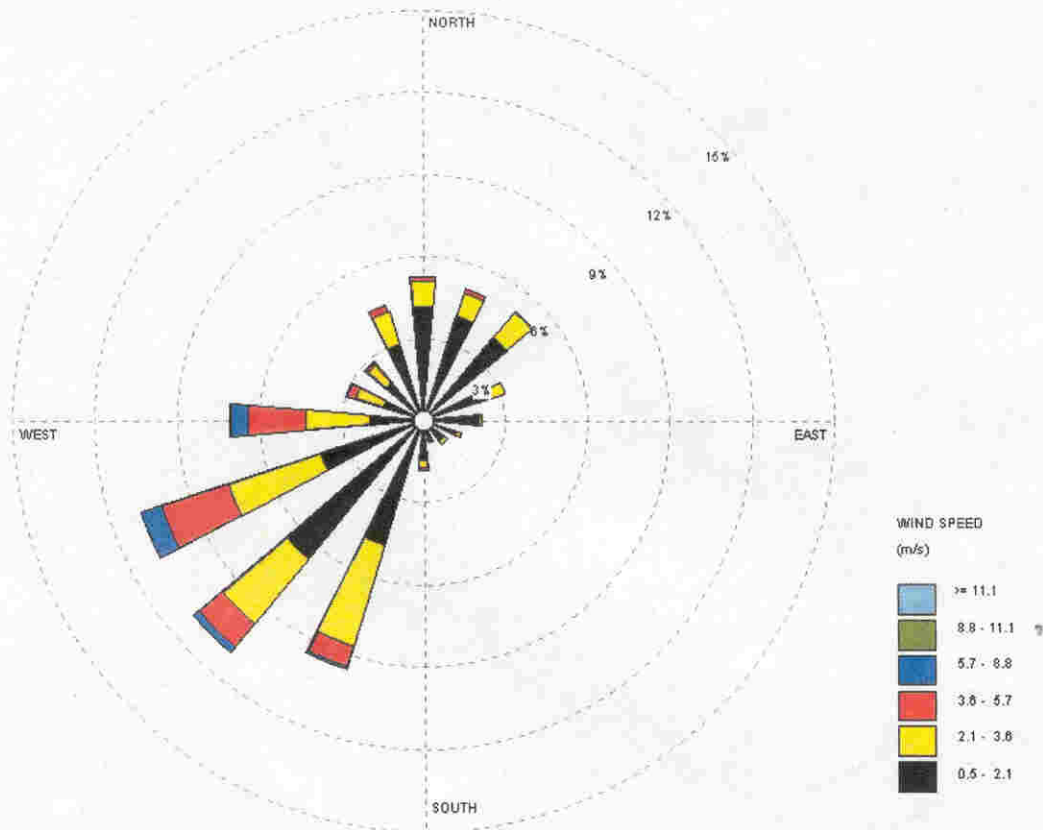
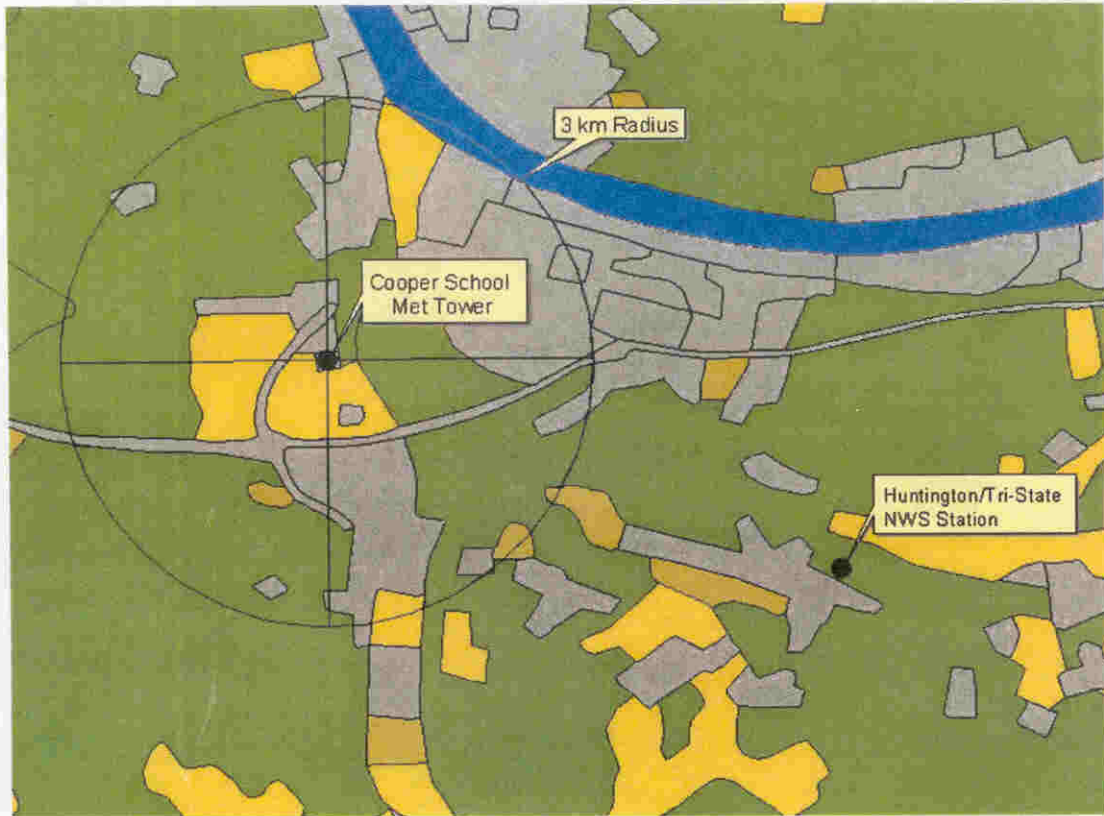


Figure 2. Cooper School Land Use



2 0 2 4 6 8 Kilometers

- Urban or Built-Up Land
- Agricultural Land
- Rangeland
- Forest Land
- Water
- Wetland
- Barren Land

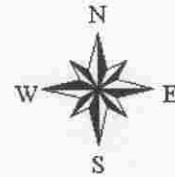


Figure 3.
SO₂ Emission Sources and
Boyd County Non-attainment Area

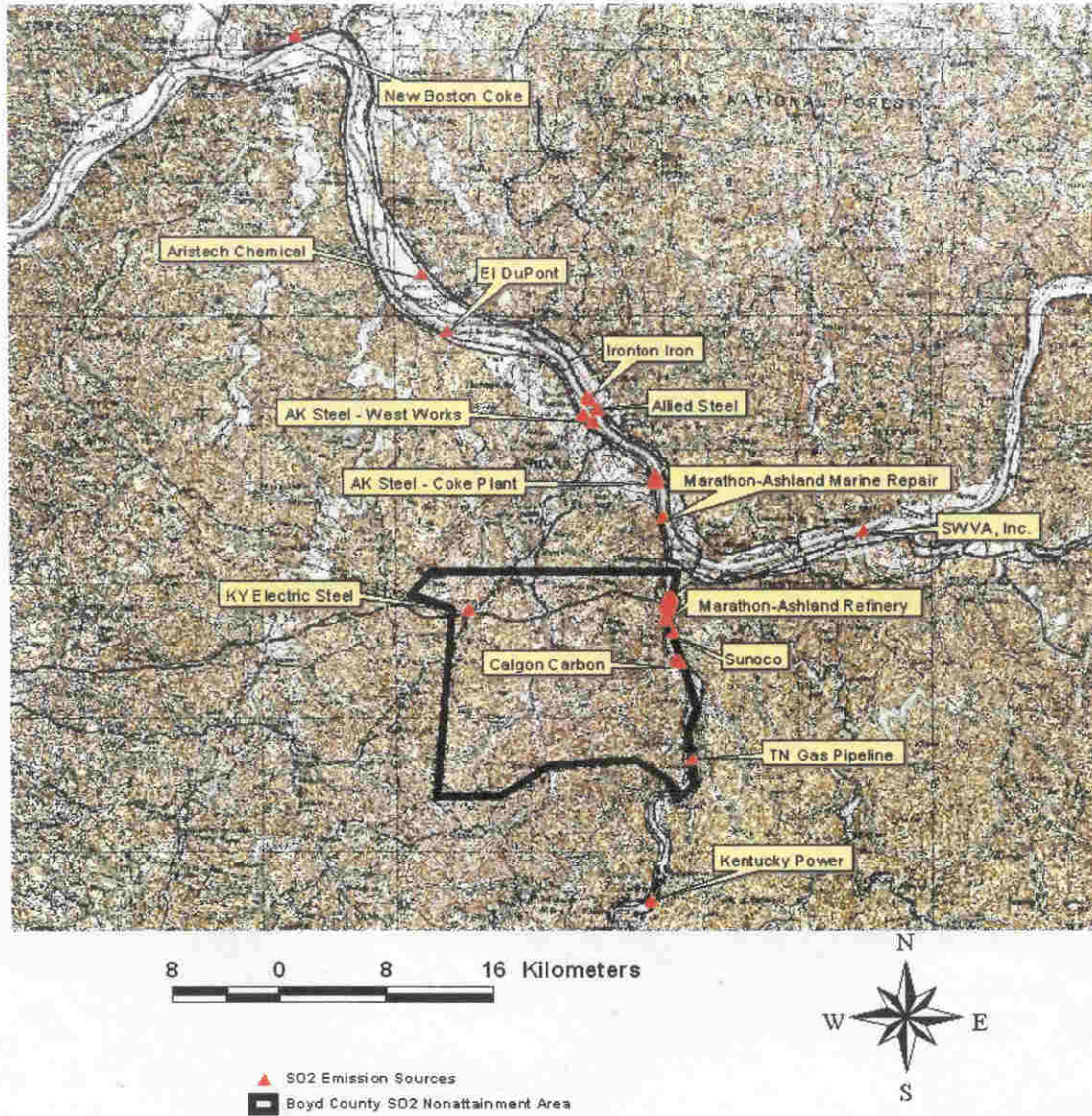


Figure 3.1
Topographic Contours Covering
the Final Modeling Receptor Grid

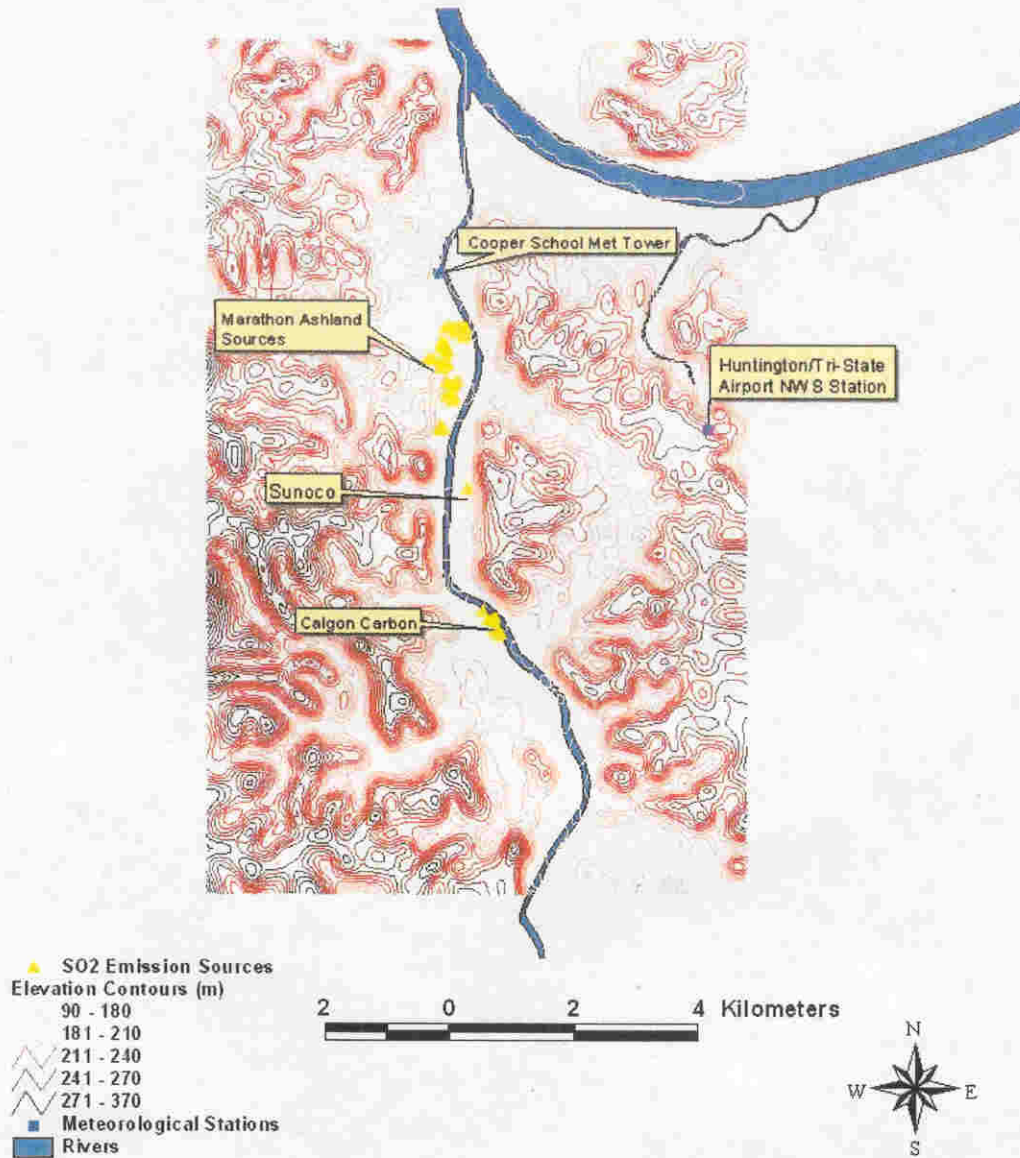
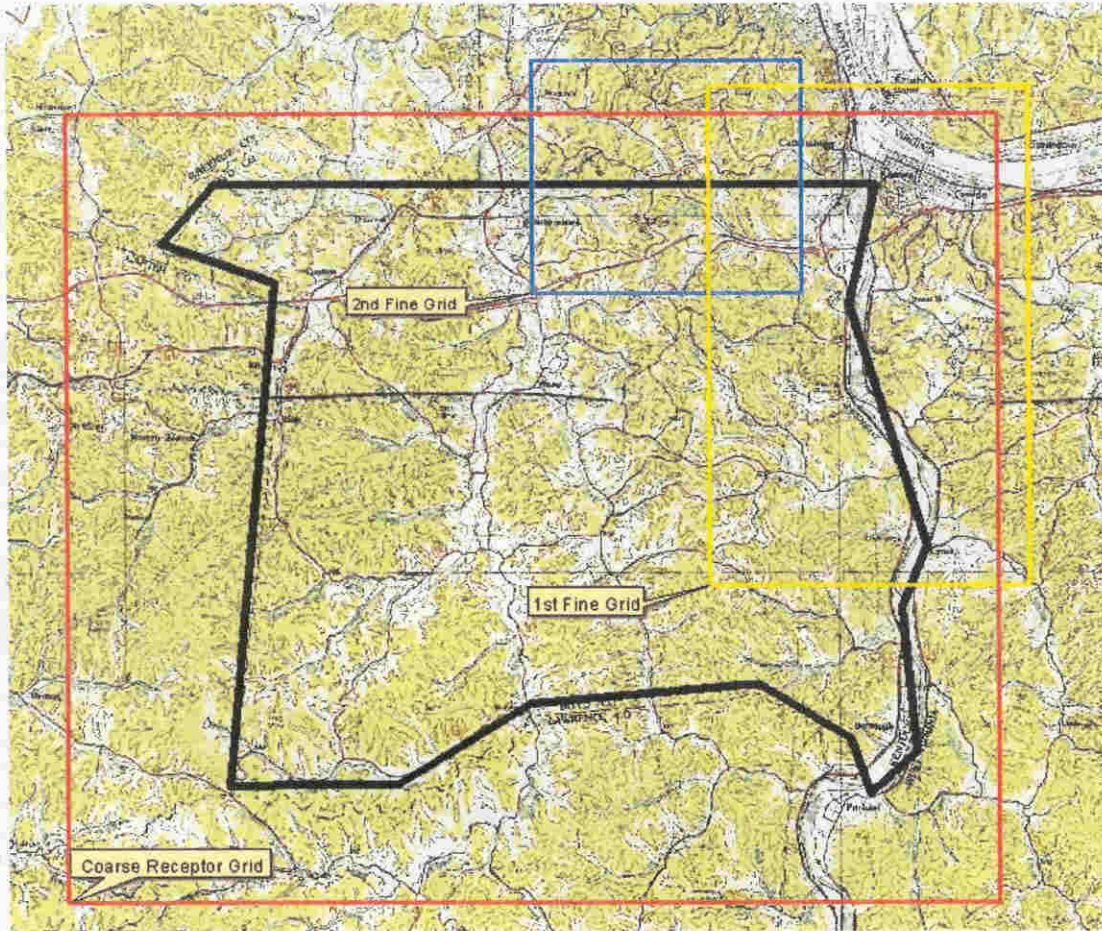


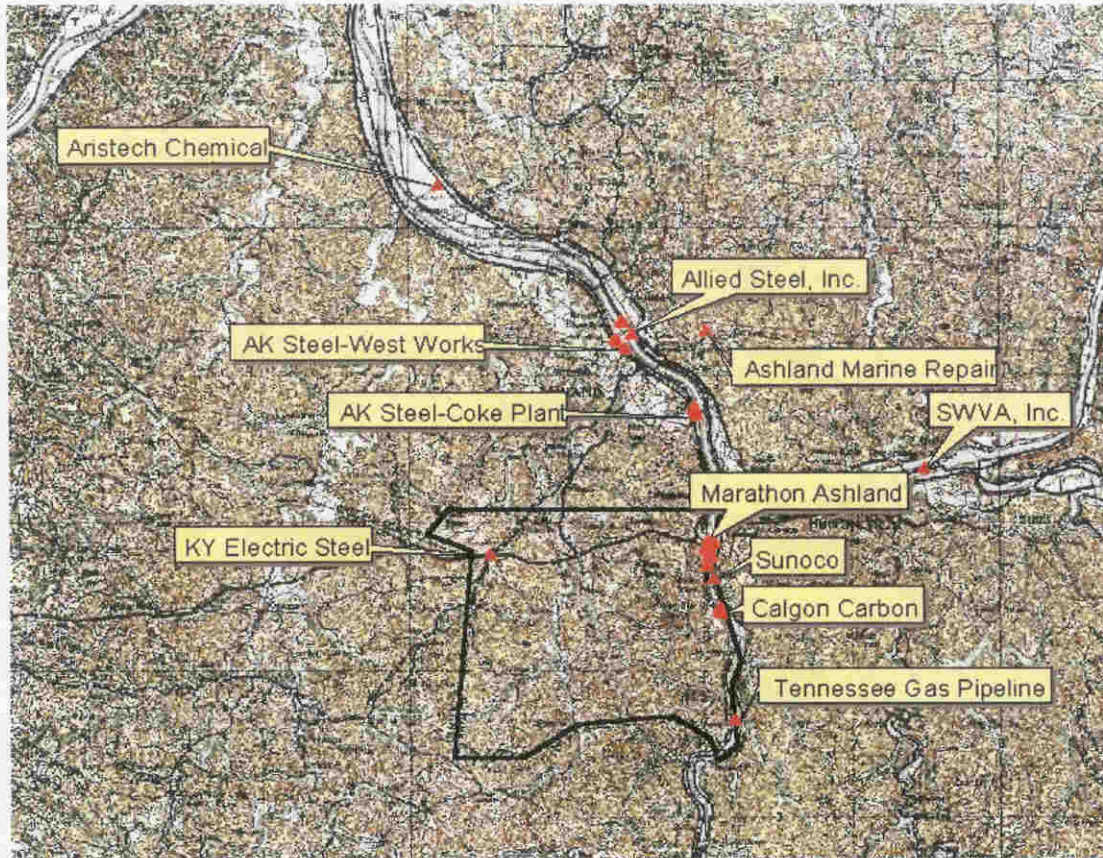
Figure 4. Receptor Grids



- Area of Coarse Grid
- Area of 1st Fine Grid
- Area of 2nd Fine Grid
- Boyd County SO2 Nonattainment Area



Figure 5.
Sources Modeled for
Building Downwash



20 0 20 Kilometers

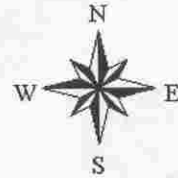
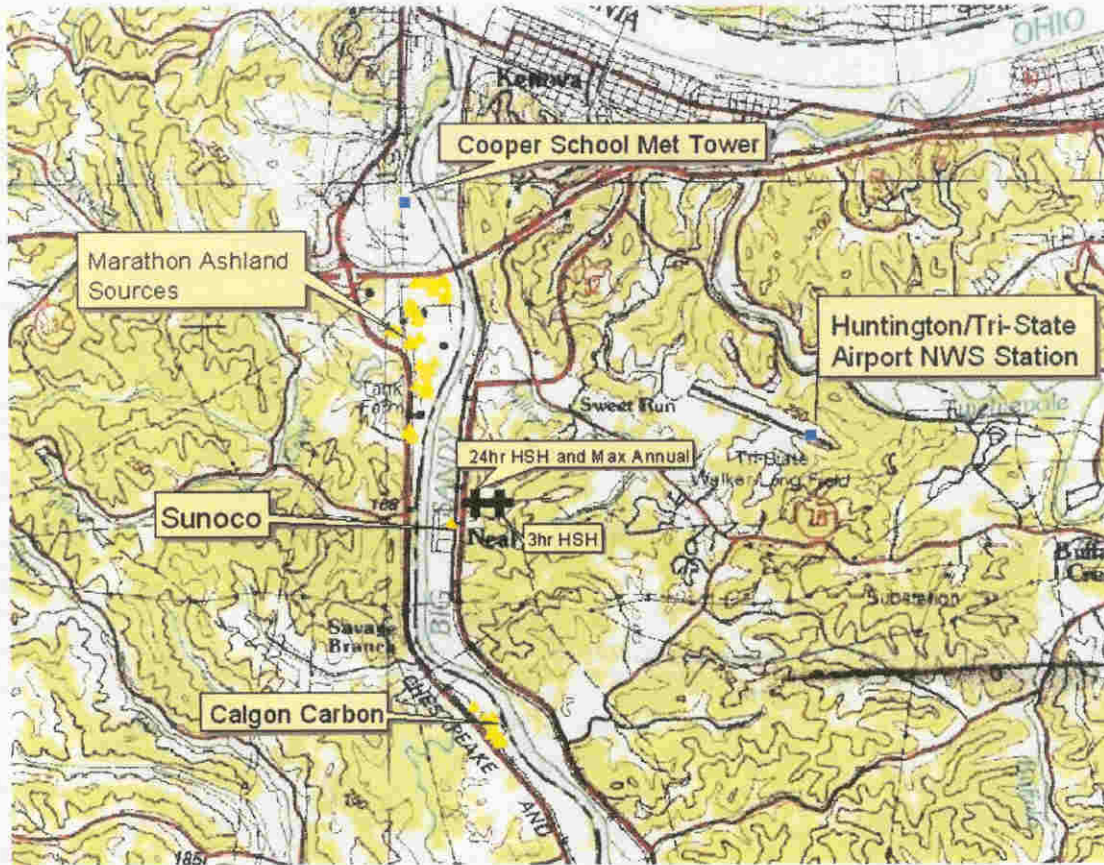


Figure 6.
Locations of Modeled 3hr and 24hr
High-Second-High and Maximum
Annual Concentrations

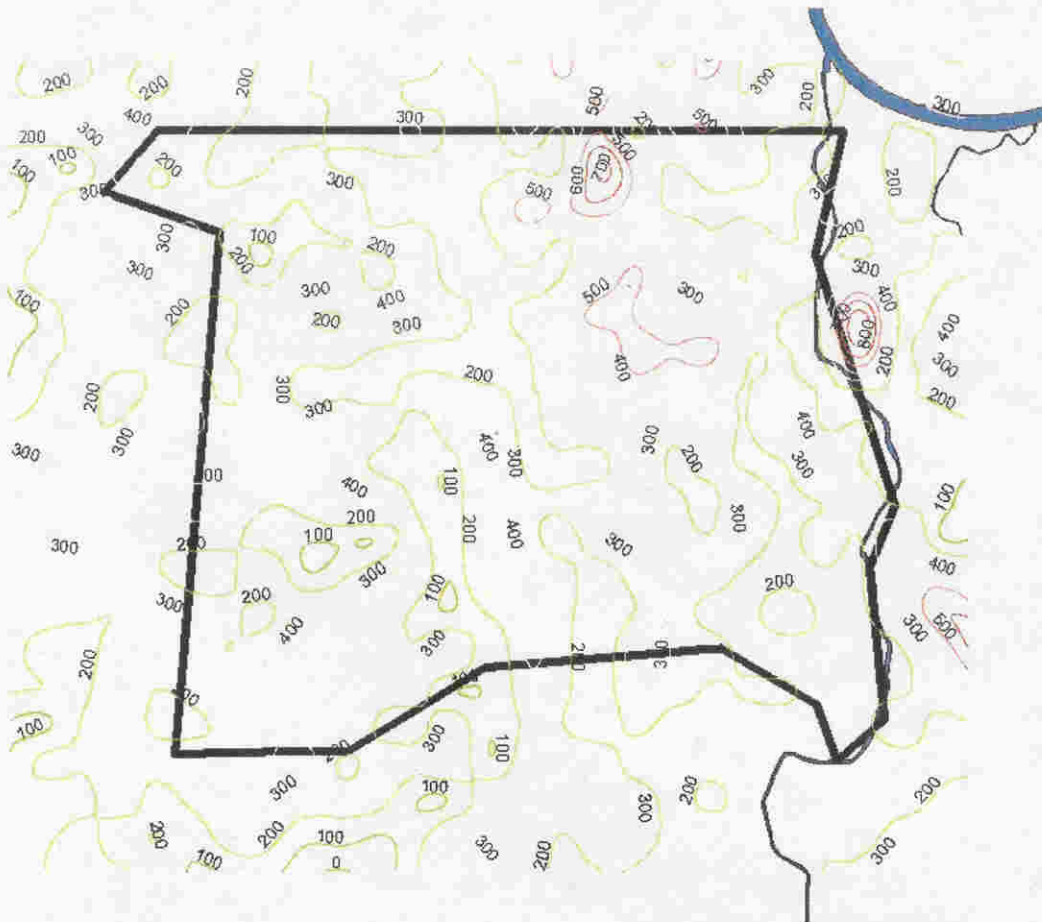


- SO2 Emission Sources
- ⊕ 3hr HSH Concentration
- ⊕ Maximum Annual Concentration
- ⊕ 24hr HSH Concentration
- Meteorological Stations

1 0 1 2 Kilometers



Figure 7.
Coarse Grid 3hr HSH
Concentration Isopleths



3hr HSH Concentration Isopleths

-  0 - 100
-  101 - 200
-  201 - 300
-  301 - 400
-  401 - 500
-  501 - 700

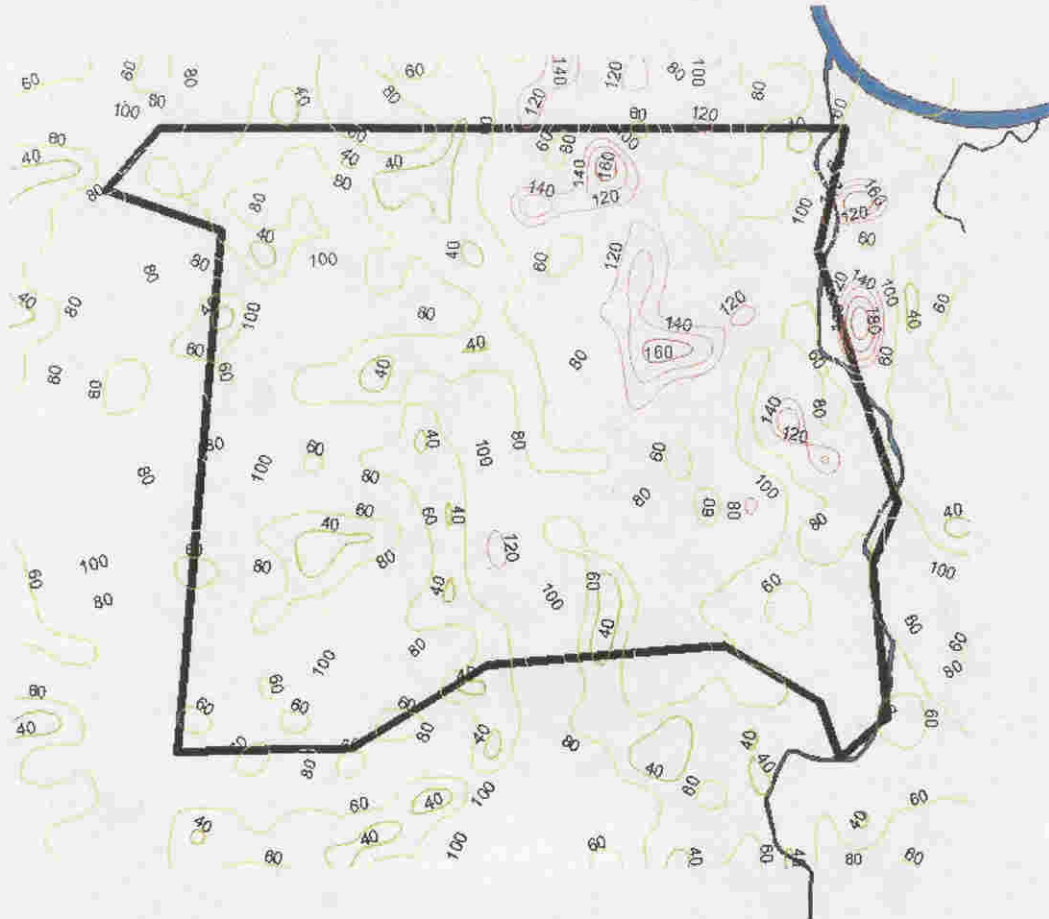
 Boyd County SO₂ Nonattainment Area

 Rivers

3 0 3 6 Kilometers




Figure 8.
Coarse Grid 24hr HSH
Concentration Isopleths



24hr HSH Concentration Isopleths

- 40
- 41 - 60
- 61 - 80
- 81 - 100
- 101 - 140
- 141 - 180

Boyd County SO₂ Nonattainment Area
Rivers

3 0 3 6 Kilometers

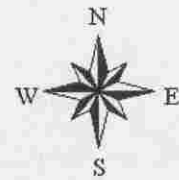
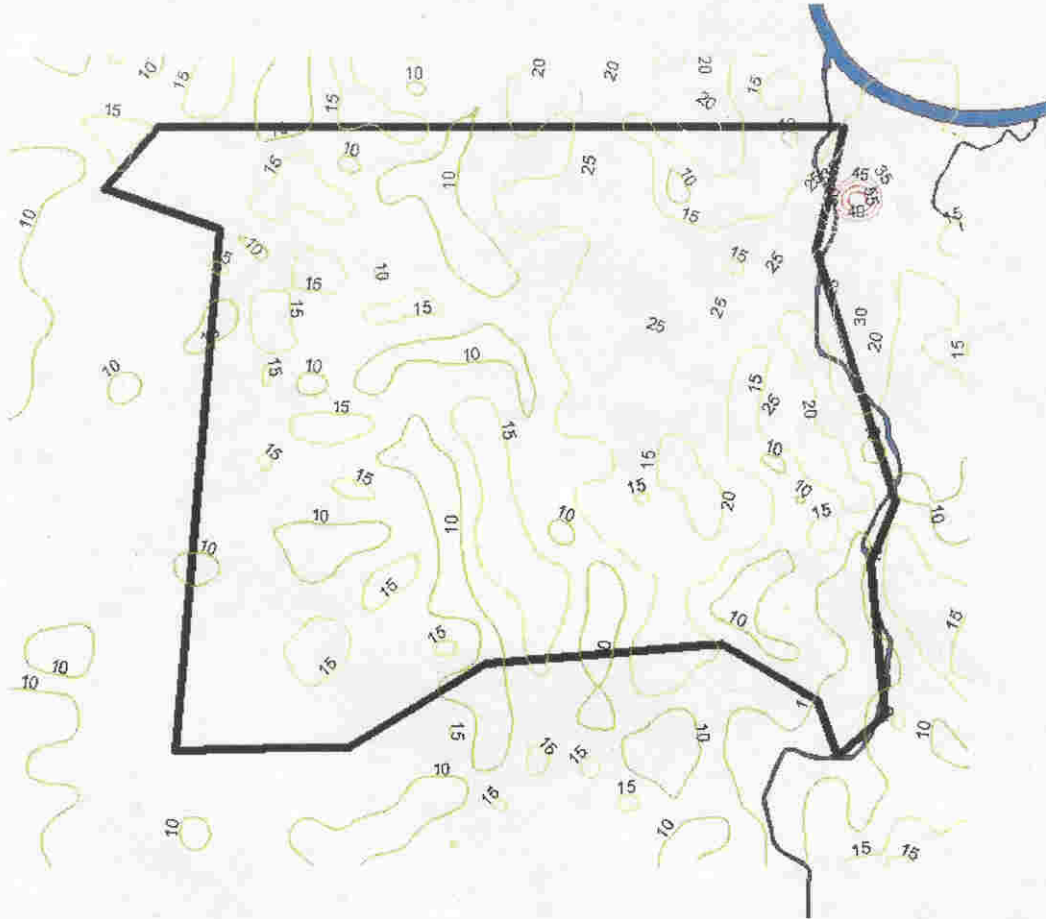


Figure 9.
Coarse Grid Maximum Annual
Concentration Isopleths



Max Annual Concentration Isopleths

- 10
- 11 - 15
- 16 - 25
- 26 - 35
- 36 - 45
- 46 - 55

- Boyd County SO2 Nonattainment Area
- Rivers

3 0 3 6 Kilometers

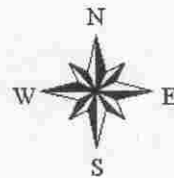


Figure 10.
3hr HSH Concentration Isopleths

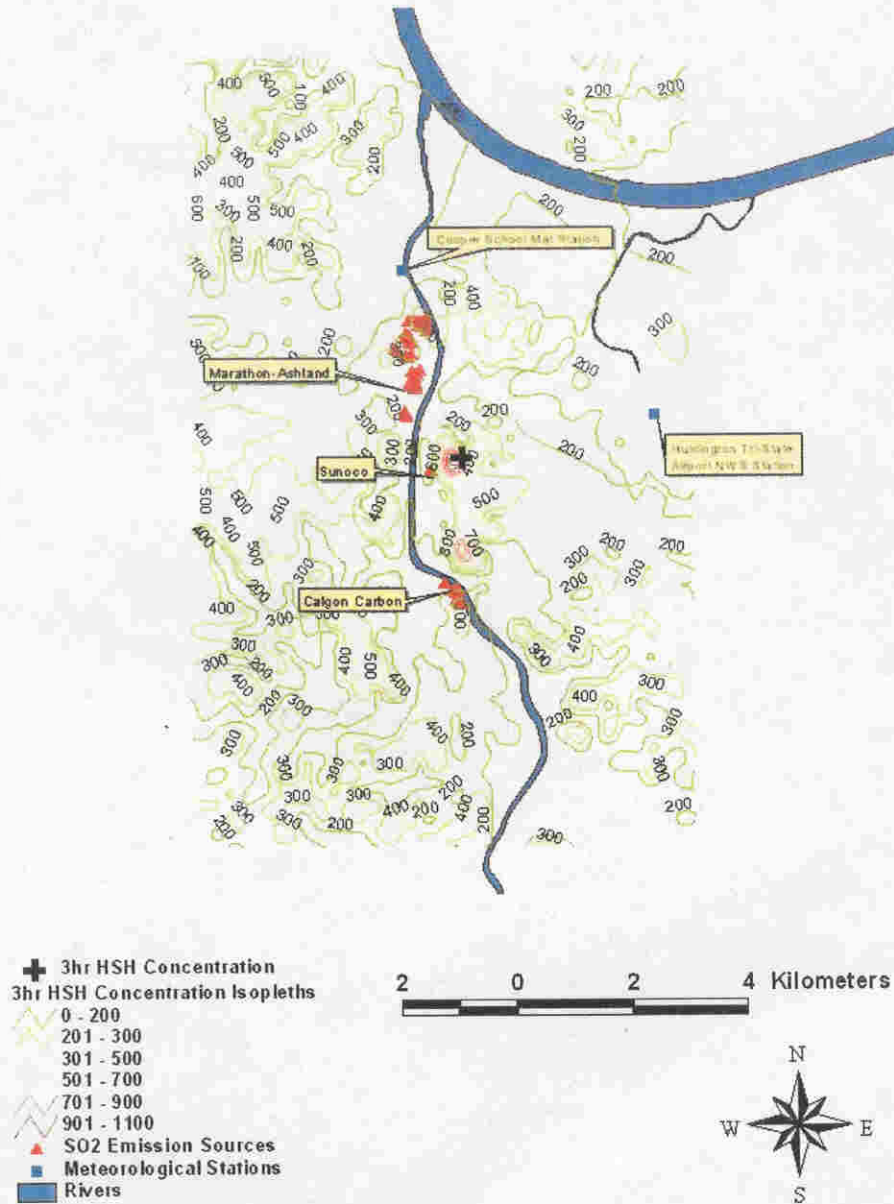


Figure 11.
24hr HSH Concentration Isoleths

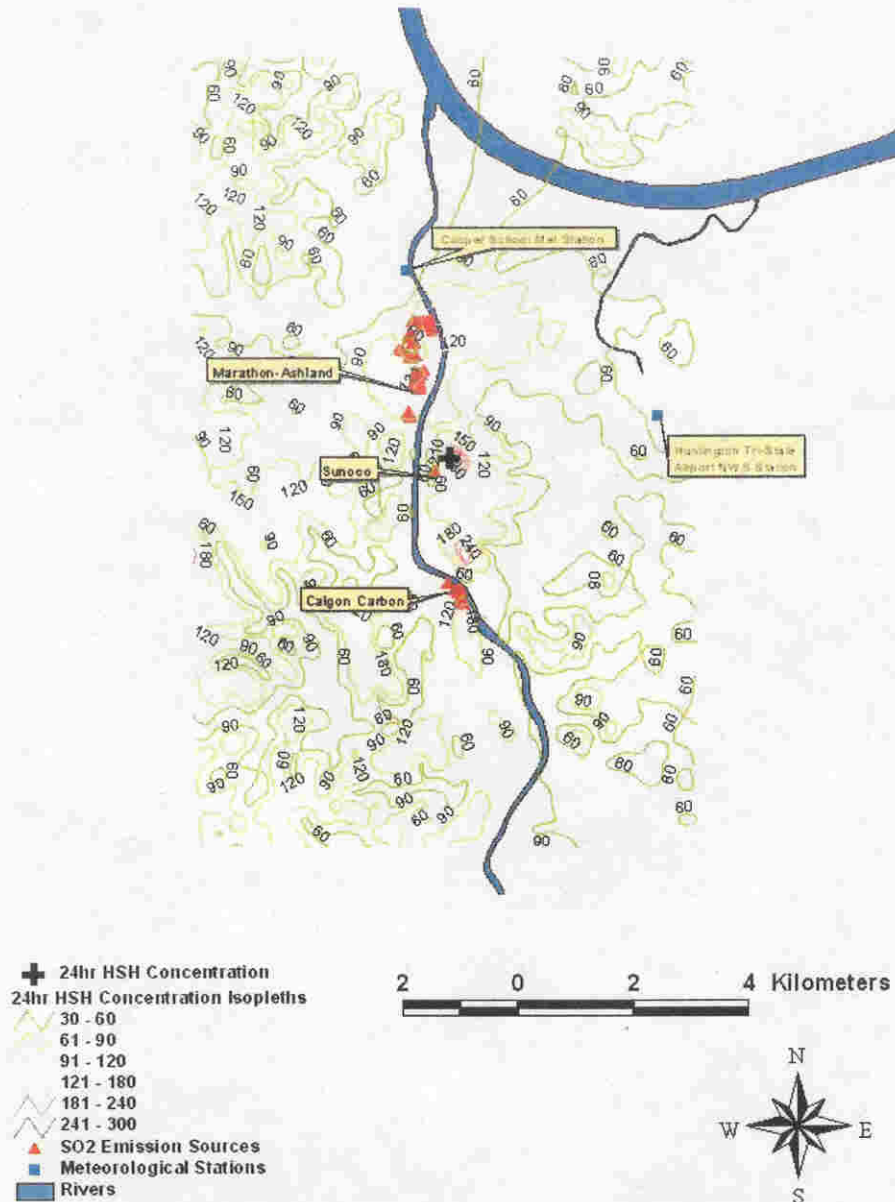
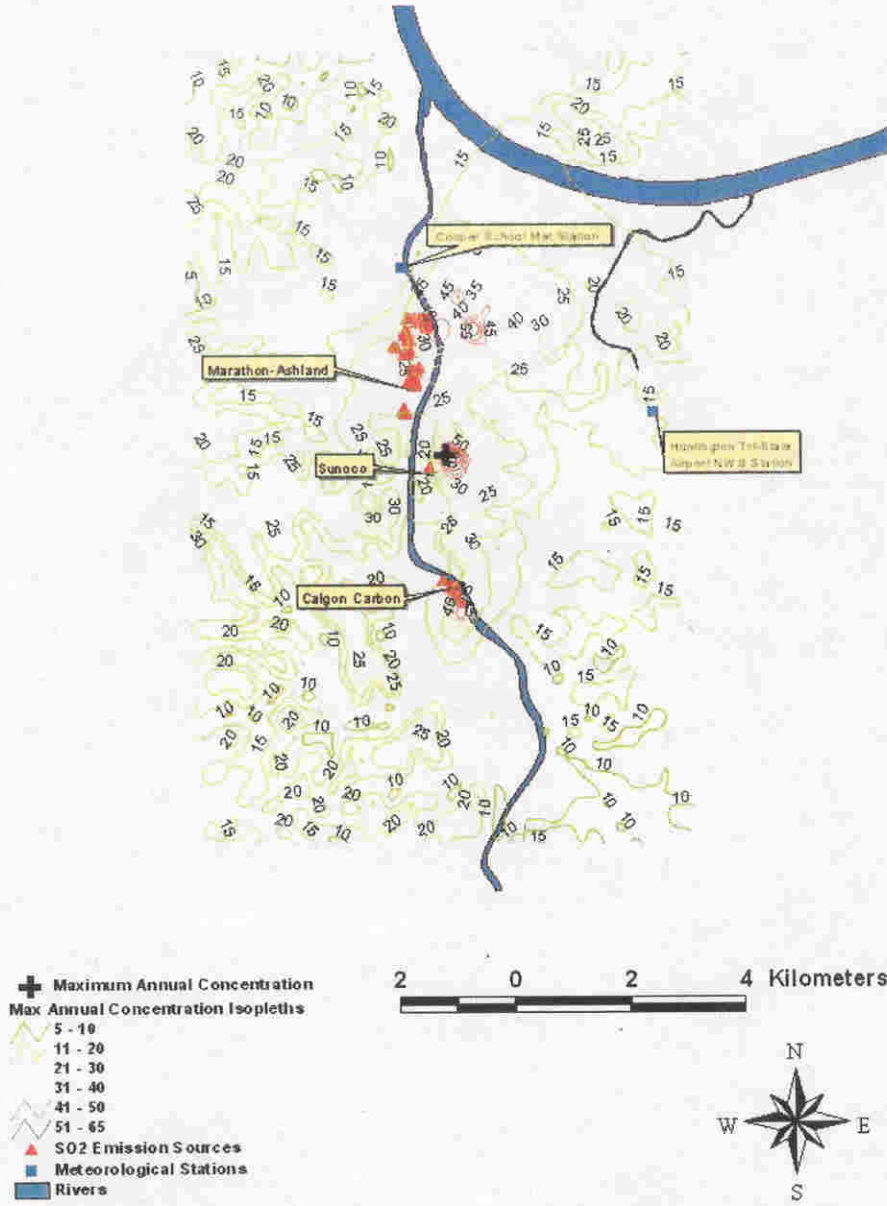


Figure 12.
Maximum Annual Concentration Isopleths



Appendix G

Federal Register,

“Approval and Promulgation of
Air Quality Implementation Plans;
West Virginia; Redesignation ...
SO₂ Nonattainment Area and
Approval of Maintenance Plan,”
January 10, 2005



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Office of Air Quality Planning and Standards
Research Triangle Park, North Carolina 27711

4 SEP 1992

AIR PROGRAMS BRANCH
RECEIVED
SEP 8 1992
EPA-REGION IV
ATLANTA, GA.

MEMORANDUM

SUBJECT: Procedures for Processing Requests to Redesignate Areas to Attainment

FROM: John Calcagni, Director
Air Quality Management Division (MD-15)

TO: Director, Air, Pesticides and Toxics Management Division, Regions I and IV
Director, Air and Waste Management Division, Region II
Director, Air, Radiation and Toxics Division, Region III
Director, Air and Radiation Division, Region V
Director, Air, Pesticides and Toxics Division, Region VI
Director, Air and Toxics Division, Regions VII, VIII, IX, and X

Purpose

The Office of Air Quality Planning and Standards (OAQPS) expects that a number of redesignation requests will be submitted in the near future. Thus, Regions will need to have guidance on the applicable procedures for handling these requests, including maintenance plan provisions. This memorandum, therefore, consolidates the Environmental Protection Agency's (EPA's) guidance regarding the processing of requests for redesignation of nonattainment areas to attainment for ozone (O₃), carbon monoxide (CO), particulate matter (PM-10), sulfur dioxide (SO₂), nitrogen dioxide (NO₂), and lead (Pb). Regions should use this guidance as a general framework for drafting Federal Register notices pertaining to redesignation requests. Special concerns for areas seeking redesignation from unclassifiable to attainment will be addressed on a case-by-case basis.

Background

Section 107(d)(3)(E) of the Clean Air Act, as amended, states that an area can be redesignated to attainment if the following conditions are met:

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1. The EPA has determined that the national ambient air quality standards (NAAQS) have been attained.
2. The applicable implementation plan has been fully approved by EPA under section 110(k).
3. The EPA has determined that the improvement in air quality is due to permanent and enforceable reductions in emissions.
4. The State has met all applicable requirements for the area under section 110 and Part D.
5. The EPA has fully approved a maintenance plan, including a contingency plan, for the area under section 175A.

Each of these criteria is discussed in more detail in the following paragraphs. Particular attention is given to maintenance plan provisions at the end of this document since maintenance plans constitute a new requirement under the amended Clean Air Act. Exceptions to the guidance will be considered on a case-by-case basis.

1. Attainment of the Standard

The State must show that the area is attaining the applicable NAAQS. There are two components involved in making this demonstration which should be considered interdependently. The first component relies upon ambient air quality data. The data that are used to demonstrate attainment should be the product of ambient monitoring that is representative of the area of highest concentration. These monitors should remain at the same location for the duration of the monitoring period required for demonstrating attainment. The data should be collected and quality-assured in accordance with 40 CFR 58 and recorded in the Aerometric Information Retrieval System (AIRS) in order for it to be available to the public for review. For purposes of redesignation, the Regional Office should verify that the integrity of the air quality monitoring network has been preserved.

For PM-10, an area may be considered attaining the NAAQS if the number of expected exceedances per year, according to 40 CFR 50.6, is less than or equal to 1.0. For O₃, the area must show that the average annual number of expected exceedances, according to 40 CFR 50.9, is less than or equal to 1.0 based on data from all monitoring sites in the area or its affected downwind environs. In making this showing, both PM-10 and O₃ must rely on 3 complete, consecutive calendar years of quality-assured air quality monitoring data, collected in accordance with 40 CFR 50, Appendices H and K. For CO, an area may be considered attaining the NAAQS if there are no violations, as determined in accordance

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with 40 CFR 50.8, based on 2 complete, consecutive calendar years of quality-assured monitoring data. For SO₂, according to 40 CFR 50.4, an area must show no more than one exceedance annually and for Pb, according to section 50.12, an area may show no exceedances on a quarterly basis.

The second component relies upon supplemental EPA-approved air quality modeling. No such supplemental modeling is required for O₃ nonattainment areas seeking redesignation. Modeling may be necessary to determine the representativeness of the monitored data. For pollutants such as SO₂ and CO, a small number of monitors typically is not representative of areawide air quality or areas of highest concentration. When dealing with SO₂, Pb, PM-10 (except for a limited number of initial moderate nonattainment areas), and CO (except moderate areas with design values of 12.7 parts per million or lower at the time of passage of the Clean Air Act Amendments of 1990), dispersion modeling will generally be necessary to evaluate comprehensively sources' impacts and to determine the areas of expected high concentrations based upon current conditions. Areas which were designated nonattainment based on modeling will generally not be redesignated to attainment unless an acceptable modeling analysis indicates attainment. Regions should consult with OAQPS for further guidance addressing the need for modeling in specific circumstances.

2. State Implementation Plan (SIP) Approval

The SIP for the area must be fully approved under section 110(k),¹ and must satisfy all requirements that apply to the area. It should be noted that approval action on SIP elements and the redesignation request may occur simultaneously. An area cannot be redesignated if a required element of its plan is the subject of a disapproval; a finding of failure to submit or to implement the SIP; or partial, conditional, or limited approval. However, this does not mean that earlier issues with regard to the SIP will be reopened. Regions should not reconsider those things that have already been approved and for which the Clean Air Act Amendments did not alter what is required. In contrast, to the extent the Amendments add a requirement or alter an existing requirement so that it adds something more, Regions should consider those issues. In addition, requests from areas known to be affected by dispersion techniques which are inconsistent with EPA guidance will continue to be considered unapprovable under section 110 and will not qualify for redesignation.

¹Section 110(k) contains the requirements for EPA action on plan submissions. It addresses completeness, deadlines, full and partial approval, conditional approval, and disapproval.

3. Permanent and Enforceable Improvement in Air Quality

The State must be able to reasonably attribute the improvement in air quality to emission reductions which are permanent and enforceable.² Attainment resulting from temporary reductions in emission rates (e.g., reduced production or shutdown due to temporary adverse economic conditions) or unusually favorable meteorology would not qualify as an air quality improvement due to permanent and enforceable emission reductions.

In making this showing, the State should estimate the percent reduction (from the year that was used to determine the design value for designation and classification) achieved from Federal measures such as the Federal Motor Vehicle Control Program and fuel volatility rules as well as control measures that have been adopted and implemented by the State. This estimate should consider emission rates, production capacities, and other related information to clearly show that the air quality improvements are the result of implemented controls. The analysis should assume that sources are operating at permitted levels (or historic peak levels) unless evidence is presented that such an assumption is unrealistic.

4. Section 110 and Part D Requirements

For the purposes of redesignation, a State must meet all requirements of section 110 and Part D that were applicable prior to submittal of the complete redesignation request. When evaluating a redesignation request, Regions should not consider whether the State has met requirements that come due under the Act after submittal of a complete redesignation request.³

²This is consistent with EPA's existing policy on redesignations as stated in an April 21, 1983 memorandum titled "Section 107 Designation Policy Summary." This memorandum states that in order for an area to be redesignated to attainment, the State must show that "actual enforceable emission reductions are responsible for the recent air quality improvement." This element of the policy retains its validity under the amended Act pursuant to section 193. [Note: other aspects of the April 21, 1983 memorandum have since been superseded by subsequent memorandums; interested parties should consult with OAQPS before relying on these aspects, e.g. those relating to required years of air quality data.]

³Under section 175A(c), however, the requirements of Part D remain in force and effect for the area until such time as it is redesignated. Upon redesignation to attainment, the requirements that became due under section 175A(c) after submittal of the complete redesignation request would no longer be applicable.

However, any requirements that came due prior to submittal of the redesignation request must be fully approved into the plan at or before the time EPA redesignates the area.

To avoid confusion concerning what requirements will be applicable for purposes of redesignation, Regions should encourage States to work closely with the appropriate Regional Office early in the process. This will help to ensure that a redesignation request submitted by the State has a high likelihood of being approved by EPA. Regions should advise States of the practical planning consequences if EPA disapproves the redesignation request or if the request is invalidated because of violations recorded during EPA's review. Under such circumstances, EPA does not have the discretion to adjust schedules for implementing SIP requirements. As a result, an area may risk sanctions and/or Federal implementation plan implementation that could result from failure to meet SIP submittal or implementation requirements.

a. Section 110 Requirements

Section 110(a)(2) contains general requirements for nonattainment plans. Most of the provisions of this section are the same as those contained in the pre-amended Act. We will provide guidance on these requirements as needed.⁴

b. Part D Requirements

Part D consists of general requirements applicable to all areas which are designated nonattainment based on a violation of the NAAQS. The general requirements are followed by a series of subparts specific to each pollutant. The general requirements appear in subpart 1. The requirements relating to O₃, CO, PM-10, SO₂, NO₂, and Pb appear in subparts 2 through 5. In those instances where an area is subject to both the general nonattainment provisions in subpart 1 as well as one of the pollutant-specific subparts, the general provisions may be subsumed within, or superseded by, the more specific requirements of subparts 2 through 5.

If an area was not classified under section 181 for O₃, or section 186 for CO, then that area is only subject to the provisions of subpart 1, "Nonattainment Areas in General." In addition to relevant provisions in subpart 1, an O₃ and CO area, which is classified, must meet all applicable requirements in subpart 2, "Additional Provisions for Ozone Nonattainment Areas," and subpart 3, "Additional Provisions for Carbon Monoxide

⁴General guidance regarding the requirements for SIP's may be found in the "General Preamble to Title I of the 1990 Clean Air Act Amendments," 57 FR 13498 (April 16, 1992).

Nonattainment Areas," respectively, before the area may be redesignated to attainment. All PM-10 nonattainment areas (whether classified as moderate or serious) must similarly meet the applicable general provisions of subpart 1 and the specific PM-10 provisions in subpart 4, "Additional Provisions for Particulate Matter Nonattainment Areas." Likewise, SO₂, NO₂, and Pb nonattainment areas are subject to the applicable general nonattainment provisions in subpart 1 as well as the more specific requirements in subpart 5, "Additional Provisions for Areas Designated Nonattainment for Sulfur Oxides, Nitrogen Dioxide, and Lead."

i. Section 172(c) Requirements

This section contains general requirements for nonattainment plans. A thorough discussion of these requirements may be found in the General Preamble to Title I [57 FR 13498 (April 16, 1992)]. The EPA anticipates that areas will already have met most or all of these requirements to the extent that they are not superseded by more specific Part D requirements. The requirements for reasonable further progress, identification of certain emissions increases, and other measures needed for attainment will not apply for redesignations because they only have meaning for areas not attaining the standard. The requirements for an emission inventory will be satisfied by the inventory requirements of the maintenance plan. The requirements of the Part D new source review program will be replaced by the prevention of significant deterioration (PSD) program once the area has been redesignated. However, in order to ensure that the PSD program will become fully effective immediately upon redesignation, either the State must be delegated the Federal PSD program or the State must make any needed modifications to its rules to have the approved PSD program apply to the affected area upon redesignation.

ii. Conformity

The State must work with EPA to show that its SIP provisions are consistent with section 176(c)(4) conformity requirements. The redesignation request should include conformity procedures, if the State already has these procedures in place. Additionally, we currently interpret the conformity requirement to apply to attainment areas. However, EPA has not yet issued its conformity regulations specifying what areas are subject to the conformity requirement. Therefore, if a State does not have conformity procedures in place at the time that it submits a redesignation request, the State must commit to follow EPA's conformity regulation upon issuance, as applicable. If the State submits the redesignation request subsequent to EPA's issuance of the conformity regulations, and the conformity requirement became applicable to the area prior to submission,

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the State must adopt the applicable conformity requirements before EPA can redesignate the area.

5. Maintenance Plans

Section 107(d)(3)(E) of the amended Act stipulates that for an area to be redesignated, EPA must fully approve a maintenance plan which meets the requirements of section 175A. A State may submit both the redesignation request and the maintenance plan at the same time and rulemaking on both may proceed on a parallel track. Maintenance plans may, of course, be submitted and approved by EPA before a redesignation is requested. However, according to section 175A(c), pending approval of the maintenance plan and redesignation request, all applicable nonattainment area requirements shall remain in place.

Section 175A defines the general framework of a maintenance plan. The maintenance plan will constitute a SIP revision and must provide for maintenance of the relevant NAAQS in the area for at least 10 years after redesignation. Section 175A further states that the plan shall contain such additional measures, if any, as may be necessary to ensure such maintenance. Because the Act requires a demonstration of maintenance for 10 years after an area is redesignated (not 10 years after submittal of a redesignation request), the State should plan for some lead time for EPA action on the request. In other words, the maintenance demonstration should project maintenance for 10 years, beginning from a date which factors in the time necessary for EPA review and approval action on the redesignation request. In determining the amount of lead time to allow, States should consider that section 107(d)(3)(D) grants the Administrator up to 18 months from receipt of a complete submittal to process a redesignation request. The statute also requires the State to submit a revision of the SIP 8 years after the original redesignation request is approved to provide for maintenance of the NAAQS for an additional 10 years following the first 10-year period [see section 175A(b)].

In addition, the maintenance plan shall contain such contingency measures as the Administrator deems necessary to ensure prompt correction of any violation of the NAAQS [see section 175A(d)]. The Act provides that, at a minimum, the contingency measures must include a requirement that the State will implement all measures contained in the nonattainment SIP prior to redesignation. Failure to maintain the NAAQS and triggering of the contingency plan will not necessitate a revision of the SIP unless required by the Administrator, as stated in section 175A(d).

The following is a list of core provisions that we anticipate will be necessary to ensure maintenance of the relevant NAAQS in an area seeking redesignation from

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nonattainment to attainment. We therefore recommend that States seeking redesignation of a nonattainment area consider these provisions. However, any final EPA determination regarding the adequacy of a maintenance plan will be made following review of the plan submittal in light of the particular circumstances facing the area proposed for redesignation and based on all relevant information available at the time.

a. Attainment Inventory

The State should develop an attainment emissions inventory to identify the level of emissions in the area which is sufficient to attain the NAAQS.⁵ This inventory should be consistent with EPA's most recent guidance on emission inventories for nonattainment areas available at the time and should include the emissions during the time period associated with the monitoring data showing attainment.⁶

Source size thresholds are 100 tons/year for SO₂, NO₂, and PM-10 areas, and 5 tons/year for Pb based upon 40 CFR 51.100(k) and 51.322, as well as established practice for AIRS data. The source size threshold for serious PM-10 areas is 70 tons/year

⁵Where the State has made an adequate demonstration that air quality has improved as a result of the SIP (as discussed previously), the attainment inventory will generally be the actual inventory at the time the area attained the standard.

⁶The EPA's current guidance on the preparation of emission inventories for O₃ and CO nonattainment areas is contained in the following documents: "Procedures for the Preparation of Emission Inventories for Carbon Monoxide and Precursors of Ozone: Volume I" (EPA-450/4-91-016), "Procedures for the Preparation of Emission Inventories for Carbon Monoxide and Precursors of Ozone: Volume II" (EPA-450/4-91-014), "Emission Inventory Requirements for Ozone State Implementation Plans" (EPA-450/4-91-010), "Emission Inventory Requirements for Carbon Monoxide Implementation Plans" (EPA-450/4-91-011), "Guideline for Regulatory Application of the Urban Airshed Model" (EPA-450/4-91-013), "Procedures for Emission Inventory Preparation: Volume IV, Mobile Sources" (EPA-450/4-81-026d), and "Procedures for Preparing Emission Inventory Projections" (EPA-450/4-91-019). The EPA does not currently have specific guidance on attainment emissions inventories for SO₂. In lieu thereof, States are referred to the guidance on emissions data to be used as input to modeling demonstrations, contained in Table 9.1 of EPA's "Guideline on Air Quality Models (Revised)" (EPA-450/2-78-027R), July 1987, which is generally applicable to all criteria pollutants. Emission inventory procedures and requirements documents are currently being prepared by OAQPS for PM-10 and Pb; these documents are due for release by summer 1992.

according to Clean Air Act section 189(b)(3). However, the inventory should include sources below these size thresholds if these smaller sources were included in the SIP attainment demonstration. Where sources below the 100, 70, and 5 tons/year-size thresholds (e.g., areas with smaller source size definitions) are subject to a State's minor source permit program, these sources need only be addressed in the aggregate to the extent that they result in areawide growth.

For O₃ nonattainment areas, the inventory should be based on actual "typical summer day" emissions of O₃ precursors (volatile organic compounds and nitrogen oxides) during the attainment year. This will generally correspond to one of the periodic inventories required for nonattainment areas to reconcile milestones. For CO nonattainment areas, the inventory should be based on actual "typical CO season day" emissions for the attainment year. This will generally correspond to one of the periodic inventories required for nonattainment areas.

b. Maintenance Demonstration

A State may generally demonstrate maintenance of the NAAQS by either showing that future emissions of a pollutant or its precursors will not exceed the level of the attainment inventory, or by modeling to show that the future mix of sources and emission rates will not cause a violation of the NAAQS. Under the Clean Air Act, many areas are required to submit modeled attainment demonstrations to show that proposed reductions in emissions will be sufficient to attain the applicable NAAQS. For these areas, the maintenance demonstration should be based upon the same level of modeling. In areas where no such modeling was required, the State should be able to rely on the attainment inventory approach. In both instances, the demonstration should be for a period of 10 years following the redesignation.

Where modeling is relied upon to demonstrate maintenance, each plan should contain a summary of the air quality concentrations expected to result from application of the control strategy. In the process, the plan should identify and describe the dispersion model or other air quality model used to project ambient concentrations (see 40 CFR 51.46).

In either case, to satisfy the demonstration requirement the State should project emissions for the 10-year period following redesignation, either for the purpose of showing that emissions will not increase over the attainment inventory or for conducting modeling.⁷ The projected inventory should consider future growth, including population and industry, should be consistent

⁷Guidance for projecting emissions may be found in the emissions inventory guidance cited in footnote 6.

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with the attainment inventory, and should document data inputs and assumptions. All elements of the demonstration (e.g., emission projections, new source growth, and modeling) should be consistent with current EPA modeling guidance.⁸ For O₃ and CO, the projected emissions should reflect the expected actual emissions based on enforceable emission rates and typical production rates.

For CO, a State should address the areawide component of the maintenance demonstration either by showing that future CO emissions will not increase or by conducting areawide modeling. Preferably, the State should carry out hot-spot modeling that is consistent with the Guideline on Air Quality Models (Revised), in order to demonstrate maintenance of the NAAQS. In particular, if the nonattainment problem is related to a pattern of hot-spots then hot-spot modeling should generally be conducted. However, hot-spot modeling is not automatically required. For example, if the nonattainment problem was related solely to stationary point sources, or if highway improvements have been implemented and the associated emission reductions and travel characteristics can be qualitatively documented, then hot-spot modeling is not required. In such cases, adequate documentation as well as the concurrence of Headquarters is needed.

Any assumptions concerning emission rates must reflect permanent, enforceable measures. In other words, a State generally cannot take credit in the maintenance demonstration for reductions unless there are regulations in place requiring those reductions or the reductions are otherwise shown to be permanent. Therefore, the State will be expected to maintain its implemented control strategy despite redesignation to attainment, unless such measures are shown to be unnecessary for maintenance or are replaced with measures that achieve equivalent reductions (see additional discussion under "Contingency Plan"). Emission reductions from source shutdowns can be considered permanent and enforceable to the extent that those shutdowns have been reflected in the SIP and all applicable permits have been modified accordingly.

Modeling used to demonstrate attainment may be relied upon in the maintenance demonstration where the modeling conforms to current EPA guidance and where the State has projected no significant changes in the modeling inputs during the intervening time. Where the original attainment demonstration may no longer be relied upon, States will be expected to remodel using current

⁸The EPA-approved modeling guidance may be found in the following documents: "Guideline on Air Quality Models (Revised)," OAQPS, RTP, NC (EPA-450/2-78-027R), July 1986; and "PM-10 SIP Development Guideline," OAQPS, RTP, NC (EPA-450/2-86-001), June 1987.

EPA referenced techniques.⁹ This may be necessary where, for example, there has been a change in emissions or a change in the siting of new sources or modifications such that air quality may no longer be accurately represented by the existing modeling.

c. Monitoring Network

Once an area has been redesignated, the State should continue to operate an appropriate air quality monitoring network, in accordance with 40 CFR Part 58, to verify the attainment status of the area. The maintenance plan should contain provisions for continued operation of air quality monitors that will provide such verification. In cases where measured mobile source parameters (e.g., vehicle miles traveled congestion) have changed over time, the State may also need to perform a saturation monitoring study to determine the need for, and location of, additional permanent monitors.

d. Verification of Continued Attainment

Each State should ensure that it has the legal authority to implement and enforce all measures necessary to attain and to maintain the NAAQS. Sections 110(a)(2)(B) and (F) of the Clean Air Act, as amended, and regulations promulgated at 40 CFR 51.110(k), suggest that one such measure is the acquisition of ambient and source emission data to demonstrate attainment and maintenance.

Regardless of whether the maintenance demonstration is based on a showing that future emission inventories will not exceed the attainment inventory or on modeling, the State submittal should indicate how the State will track the progress of the maintenance plan. This is necessary due to the fact that the emission projections made for the maintenance demonstration depend on assumptions of point and area source growth.

One option for tracking the progress of the maintenance demonstration, provided here as an example, would be for the State to periodically update the emissions inventory. In this case, the maintenance plan should specify the frequency of any planned inventory updates. Such an update could be based, in part, on the annual AIRS update and could indicate new source growth and other changes from the attainment inventory (e.g., changes in vehicle miles travelled or in traffic patterns). As an alternative to a complete update of the inventory, the State may choose to do a comprehensive review of the factors that were used in developing the attainment inventory to show no significant change. If this review does show a significant change, the State should then perform an update of the inventory.

⁹See references for modeling guidance cited in footnote 8.

Where the demonstration is based on modeling, an option for tracking progress would be for the State to periodically (typically every 3 years) reevaluate the modeling assumptions and input data. In any event, the State should monitor the indicators for triggering contingency measures (as discussed below).

e. Contingency Plan

Section 175A of the Act also requires that a maintenance plan include contingency provisions, as necessary, to promptly correct any violation of the NAAQS that occurs after redesignation of the area. These contingency measures are distinguished from those generally required for nonattainment areas under section 172(c)(9) and those specifically required for O₃ and CO nonattainment areas under sections 182(c)(9) and 187(a)(3), respectively. For the purposes of section 175A, a State is not required to have fully adopted contingency measures that will take effect without further action by the State in order for the maintenance plan to be approved. However, the contingency plan is considered to be an enforceable part of the SIP and should ensure that the contingency measures are adopted expeditiously once they are triggered. The plan should clearly identify the measures to be adopted, a schedule and procedure for adoption and implementation, and a specific time limit for action by the State. As a necessary part of the plan, the State should also identify specific indicators, or triggers, which will be used to determine when the contingency measures need to be implemented.

Where the maintenance demonstration is based on the inventory, the State may, for example, identify an "action level" of emissions as the indicator. If later inventory updates show that the inventory has exceeded the action level, the State would take the necessary steps to implement the contingency measures. The indicators would allow a State to take early action to address potential violations of the NAAQS before they occur. By taking early action, States may be able to prevent any actual violations of the NAAQS and, therefore, eliminate the need on the part of EPA to redesignate an area to nonattainment.

Other indicators to consider include monitored or modeled violations of the NAAQS (due to the inadequacy of monitoring data in some situations). It is important to note that air quality data in excess of the NAAQS will not automatically necessitate a revision of the SIP where implementation of contingency measures is adequate to address the cause of the violation. The need for a SIP revision is subject to the Administrator's discretion.

The EPA will review what constitutes a contingency plan on a case-by-case basis. At a minimum, it must require that the State will implement all measures contained in the Part D nonattainment

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plan for the area prior to redesignation [see section 175A(d)]. This language suggests that a State may submit a SIP revision at the time of its redesignation request to remove or reduce the stringency of control measures. Such a revision can be approved by EPA if it provides for compensating equivalent reductions. A demonstration that measures are equivalent would have to include appropriate modeling or an adequate justification. Alternatively, a State might be able to demonstrate (through EPA-approved modeling) that the measures are not necessary for maintenance of the standard. In either case, the contingency plan would have to provide for implementation of any measures that were reduced or removed after redesignation of the area.

Summary

As stated previously, this memorandum consolidates EPA's redesignation and maintenance plan guidance and Regions should rely upon it as a general framework in drafting Federal Register notices. It is strongly suggested that the Regional Offices share this document with the appropriate States. This should give the States a better understanding of what is expected from a redesignation request and maintenance plan under existing policy. Any necessary changes to existing Agency policy will be made through our action on specific redesignation requests and the review of section 175A maintenance plans for these particular areas, both of which are subject to notice and comment rulemaking procedures. Thus, in applying this memorandum to specific circumstances in a rulemaking, Regions should consider the applicability of the underlying policies to the particular facts and to comments submitted by any person. If your staff members have questions which require clarification, they may contact Sharon Reinders at (919) 541-5284 for O₃- and CO-related issues, and Eric Ginsburg at (919) 541-0877 for SO₂-, PM-10-, and Pb-related issues.

cc: Chief, Air Branch, Regions I-X
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Mike Shapiro, OAR
Lydia Wegman, OAQPS

SIP at the time of enactment in relationship to the requirements of the 1990 CAAA. This is consistent with the Savings Clause for existing plan provisions (section 110(n)(1)). If the nonattainment area had a part D plan that was approved prior to enactment, the EPA will not require a new part D SIP. For these areas, a new part D SIP will not be required regardless of whether the attainment date for the area had passed at the time of enactment of the 1990 CAAA. However, if the approved plan was not a part D plan, the State will have to submit a complete part D plan to EPA for approval because part D plans are required for nonattainment areas (section 191(b)).

Policy clarification is also needed concerning the status of areas that lack approved part D plans and that contain a SO₂ emission source that has permanently shut down. A minimum of two actions are required for States wishing to establish that these areas are inoperative for SIP purposes.

The first action is that the State must provide EPA with sufficient evidence to establish that the source has in fact been permanently shut down. Three criteria exist for establishing permanent source shutdown. These criteria require proof that the source has been inoperative for at least the 2 preceding years, that the source is precluded from resuming operations, and that the source has been withdrawn from the State's emissions inventory.

The second action is that the State must establish that fully-approved NSR and PSD programs are in place so that the source would be required to undergo NSR prior to start-up if it were reactivated.

After the State has completed these actions, EPA will consider additional plan requirements of such areas on a case-by-case basis. Alternatively, the State may choose to submit complete part D plans to EPA for these areas. As discussed in a previous section on redesignation, section 107(d)(3) provides that a nonattainment area must meet all the requirements set forth in section 107(d)(3)(E), including a maintenance plan consistent with section 175A, before it may be redesignated to attainment. The EPA recognizes that this issue is of immediate concern to some States and Regions. The EPA will issue guidance concerning plan requirements and redesignation requirements in the future.

(b) Issues—(1) RACT. For most criteria pollutants, RACT is control technology that is reasonably available considering technological and economic feasibility (see memorandum from R. Strelow, December 9, 1976). The

definition of RACT for SO₂ is that control technology which is necessary to achieve the NAAQS (40 CFR 51.100 (o)). Since SO₂ RACT is already defined as the technology necessary to achieve NAAQS, control technology which failed to achieve the SO₂ NAAQS would, by definition, fail to be SO₂ RACT.

The EPA intends to continue defining RACT for SO₂ as that control technology which will achieve the NAAQS within statutory timeframes.

(2) *RFP.* Section 171(1) of the amended Act defines RFP as "such annual incremental reductions in emissions of the relevant air pollutant as are required by this part (part D) or may reasonably be required by EPA for the purpose of ensuring attainment of the applicable national ambient air quality standard by the applicable date." This definition is most appropriate for pollutants which are emitted by numerous and diverse sources, where the relationship between any individual source and the overall air quality is not explicitly quantified, and where the emission reductions necessary to attain the NAAQS are inventory-wide. The definition is generally less pertinent to pollutants such as SO₂ which usually have a limited number of sources, relationships between individual sources and air quality which are relatively well defined, and emissions control measures which result in swift and dramatic improvement in air quality. That is, for SO₂, there is usually a single "step" between pre-control nonattainment and post-control between pre-control nonattainment and post-control attainment.

Therefore, for SO₂, with its discernible relationship between emissions and air quality and significant and immediate air quality improvements, RFP will continue to be construed as "adherence to an ambitious compliance schedule."²⁰

(3) *Contingency measures.* Section 172(c)(9) of the amended Act defines contingency measures as measures in a SIP which are to be implemented if an area fails to make RFP or fails to attain the NAAQS by the applicable attainment date. Contingency measures become effective without further action by the State or EPA, upon determination by EPA that the area has failed to (1) make reasonable further progress or (2) attain the SO₂ NAAQS by the applicable statutory deadline. These contingency

²⁰ U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, "Guidance Document for Correction of part D SIP's for Nonattainment Areas," (Research Triangle Park, North Carolina: January 27, 1984), page 25.

measures shall consist of other available control measures that are not included in the control strategy.

The EPA interprets the contingency measure provisions as primarily directed at general programs which can be undertaken on an areawide basis. Again, SO₂ presents special considerations. First, for some of the other criteria pollutants, the analytical tools for quantifying the relationship between reductions in precursor emissions and resulting air quality improvements remain subject to significant uncertainties, in contrast with procedures for pollutants such as SO₂. Second, emission estimates and attainment analyses can be strongly influenced by overly-optimistic assumptions about control efficiency and rates of compliance for many small sources. In contrast, controls for SO₂ are well understood and are far less prone to uncertainty. Since SO₂ control measures are by definition based upon what is directly and quantifiably necessary to attain the SO₂ NAAQS, it would be unlikely for an area to implement the necessary emissions control yet fail to attain the NAAQS. Therefore, for SO₂ programs, EPA interprets "contingency measures" to mean that the State agency has a comprehensive program to identify sources of violations of the SO₂ NAAQS and to undertake an aggressive follow-up for compliance and enforcement, including expedited procedures for establishing enforceable consent agreements pending the adoption of revised SIP's.

This definition of minimum contingency measures for SO₂ does not preclude a State from requiring additional contingency measures that are enforceable and appropriate for a particular source or source category.

(4) *Stack height issues and remand.* Three provisions of the stack height rules have been remanded to EPA as a result of the court decision in *NRDC v. Thomas*, 838 F.2d 1224 (D.C. Cir.), cert. denied, 109 S.Ct. 219 (1988). The EPA has allowed States to move ahead on affected SIP revisions without regard to the remanded section of these rules, but with the caveat that the States must remain aware of the status of these rules, and may be required to take action at a later date to respond to any rule revisions resulting from the remand (see, "Interim Policy on Stack Height Regulatory Actions," J. Craig Potter, April 22, 1988.)

(5) *Existing modeling protocols.* The amended Act requires submittal of a complete SIP 18 months from enactment or nonattainment designation (section

Appendix H

Calgon Carbon Corporation,
Catlettsburg, Kentucky,
Title V Air Quality Permit,
Revised March 1, 2004

**Commonwealth of Kentucky
Environmental and Public Protection Cabinet
Department for Environmental Protection
Division for Air Quality
803 Schenkel Lane
Frankfort, Kentucky 40601
(502) 573-3382**

**Title V
AIR QUALITY PERMIT
Issued under 401 KAR 52:020**

Permittee Name: Calgon Carbon Corporation
Mailing Address: P.O. Box 664
Catlettsburg, Kentucky 41129

Source Name: Same as above.
Mailing Address: Same as above.

Source Location: U.S. Route 23 S.
Catlettsburg, Kentucky 41129

Permit Number: V-00-015, Revision 2
Log Number: E983, F864, G494, 55421, 55679
Review Type: Title V, RACT, Significant Revision
Source ID #: 21-019-00014

Regional Office: Ashland Regional Office
P.O. Box 1507
3700 13th Street
Ashland, KY 41105
(606) 920-2067

County: Boyd

Application
Complete Date: February 16, 2000
Issuance Date: August 21, 2000
Revision Date: March 1, 2004
Expiration Date: August 21, 2005

**John S. Lyons, Director
Division for Air Quality**

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| Rev # | Permit type | Log # | Complete Date | Issuance Date | Summary of Action |
|-------|----------------------|------------------------|---------------|---------------|---|
| ---- | Initial Issuance | E983,
F864,
G494 | 02/16/00 | 08/21/00 | |
| 1 | Minor revision | 55421 | 01/28/03 | 07/10/03 | Addition of temporary natural gas fired package boiler. Update permit template. |
| 2 | Significant Revision | 55679,
55758 | 08/04/03 | 03/01/04 | Reduce allowable SO2 emission rate. 502(b)10 Change. |

SECTION A - PERMIT AUTHORIZATION

Pursuant to a duly submitted application the Kentucky Division for Air Quality hereby authorizes the operation of the equipment described herein in accordance with the terms and conditions of this permit. This permit has been issued under the provisions of Kentucky Revised Statutes Chapter 224 and regulations promulgated pursuant thereto.

The permittee shall not construct, reconstruct, or modify any affected facilities without first having submitted a complete application and received a permit for the planned activity from the permitting authority, except as provided in this permit or in 401 KAR 52:020, Title V Permits.

Issuance of this permit does not relieve the permittee from the responsibility of obtaining any other permits, licenses, or approvals required by this Cabinet or any other federal, state, or local agency.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONSINDEX OF EMISSION POINTS LISTED IN SECTION B

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SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

A. A-LINE:

- 08 (A-10) A-Line Packaging operations
Controls: Baghouse (PM/PM₁₀)

APPLICABLE REGULATIONS:

401 KAR 61:020, *Existing Process Operations*, applies to the emissions of particulate matter from the A-Line Packaging operations.

1. Operating Limitations:

The total weight of activated carbon processed at the A-Line Packaging operations shall not exceed 2.0 tons per hour and 17,520 tons during any consecutive 12 months [Permit O-94-020 (Revision 1)].

Compliance Demonstration Method:

The permittee shall maintain monthly records of the following information:

- a. Total weight of activated carbon processed at the A-Line Packaging operations each month.
- b. Total weight of activated carbon processed at the A-Line Packaging operations during the previous 12 months.
- c. Total hours of activated carbon processing during the month.
- d. Hourly activated carbon throughput = $\frac{\text{[Total weight of activated carbon processed at the A-Line Packaging operations each month]}}{\text{[Total hours of activated carbon processing during the month]}}$?

2. Emission Limitations:

- a. Emissions of particulate matter from the A-Line Packaging operations shall not exceed the allowable rate limit as calculated by the following equation [401 KAR 61:020, Section 3 (2)]:
For process rates up to 60,000 lb/hr: $E = 4.10P^{0.67}$
Where E = rate of emissions in lb/hr, and
P = process weight rate in tons/hr of activated carbon processed at the A-Line Packaging operations (i.e.: The hourly activated carbon throughput rate determined in 1.d., above).
- b. The opacity of visible emissions from the A-Line Packaging operations shall not equal or exceed 40 percent [401 KAR 61:020, Section 3 (1)].
- c. The baghouse associated with the A-Line Packaging operations shall control emissions of particulate matter and be operated properly in accordance with manufacturer's specifications and/or standard operating procedures at all times the A-Line Packaging is in operation. The permittee is required to use the baghouse associated with the A-Line Packaging operations in order meet the particulate matter emission standard for the A-Line Packaging operations.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

A. A-LINE:

08 (A-10) A-Line Packaging operations

2. Emission Limitations: (continued)

Compliance Demonstration Method:

a. Mass Emission Standard:

Actual PM Emission Rate = [Emission factor observed during last stack test* (in pounds PM/per ton activated carbon)] ? [The hourly activated carbon throughput rate determined in 1.d., above.]

(*Alternate emission factor may be established based on demonstration of similarity to other tested sources and/or estimated using credible engineering judgement based on conservative assumptions.)

b. Opacity Limit:

- i. During periods of normal operation of the baghouse, no compliance demonstration is necessary other than the weekly visual inspection required by paragraph 4.d. below.
- ii. If the A-Line Packaging unit is in operation during any period of malfunction of its associated baghouse, the permittee shall determine compliance through maintenance of the records required by paragraph 5.c. below.

c. Use of Baghouse:

The permittee shall record the occurrence, duration, cause, and any corrective action taken for each incident when the A-Line Packaging unit is in operation but the corresponding baghouse is not in operation.

3. Testing Requirements:

Pursuant to Regulations 401 KAR 59:005, Section 2(2) and 401 KAR 50:045, Section 1, performance testing using the Reference Methods specified in Regulation 401 KAR 50:015 shall be conducted as required by the Division.

4. Specific Monitoring Requirements:

The permittee shall monitor the following parameters:

- a. Total weight of activated carbon processed at the A-Line Packaging operations each month.
- b. Total hours of activated carbon processing during the month.
- c. The permittee shall install, calibrate, maintain, and operate according to manufacturer's specification a monitoring device for the continuous measurement of the pressure loss of the gas stream through the A-Line Packaging baghouse.
- d. The permittee shall visually inspect the A-Line Packaging baghouse once per week during A-Line Packaging operations. The weekly inspection shall consist of a visual inspection of the physical condition of the external unit, combined with the corresponding visual emissions observation as outlined in paragraph 5.c. below.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

A. A-LINE:

08 (A-10) A-Line Packaging operations

5. Specific Recordkeeping Requirements:

The permittee shall maintain records of the following information:

- a. Total weight of activated carbon processed at the A-Line Packaging operations each month.
- b. Total hours of activated carbon processing during the month.
- c. During all periods of malfunction of the baghouse, if the A-Line Packaging unit is in operation, a daily (calendar day) log of the following information shall be kept:
 - i. Whether any air emissions were visible from the baghouse stack;
 - ii. Whether the visible emissions were normal for the baghouse.
 - iii. The cause of any abnormal emissions and any corrective action taken.

If visible emissions are observed, the permittee shall perform a Method 9 reading as outlined in Appendix M to 40 CFR Part 51 for the A-Line Packaging operations stack. The opacity observed shall be recorded in the daily log. The reading shall be performed by a representative of the permittee certified in Visible Emissions Evaluations. The permittee shall maintain a list of all individuals that are certified Visible Emissions Evaluators and the date of certification.

- d. For the A-Line Packaging operations baghouse, a record of the following information:
 - i. A record of the weekly reading of the pressure loss of the gas stream through the baghouse as indicated by the continuous monitor.
 - ii. Findings of the weekly visual inspection and any corrective actions taken as a result.
- e. All maintenance activities performed at the baghouse.

6. Specific Reporting Requirements:

The permittee shall submit a report of the following information to the Division for Air Quality's Ashland office in accordance with section F. 7. and F. 8 of this permit:

- a. Any exceedance of the particulate matter and opacity emission limitations within thirty days of when the exceedance is determined.
- b. The occurrence, duration, cause, and any corrective action taken for each incident when the A-Line Packaging unit is in operation but the baghouse is not in operation.

7. Specific Control Equipment Operating Conditions: None.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

B. B-LINE:

- 09 (B-01) B-Line Coal and Pitch Preparation Area
 B-Line Preparation Area to Baker Elevator
 Controls: Baghouse (PM/PM₁₀)

APPLICABLE REGULATIONS:

401 KAR 59:010, *New Process Operations*, applies to the emissions of particulate matter from the B-Line Coal and Pitch Preparation operations.

1. Operating Limitations:

The total weight of coal processed at the B-Line Coal and Pitch Preparation operations shall not exceed 9.0 tons per hour and 78,840 tons during any consecutive 12 months [Permit O-94-020 (Revision 1)].

Compliance Demonstration Method:

The permittee shall maintain monthly records of the following information:

- a. Total weight of coal processed at the B-Line Coal and Pitch Preparation Area each month.
- b. Total weight of coal processed at the B-Line Coal and Pitch Preparation Area during the previous 12 months.
- c. Total hours of coal processing during the month.
- d. Hourly coal throughput = $\frac{\text{[Total weight of coal processed at the B-Line Coal and Pitch Preparation Area each month]}}{\text{[Total hours of coal processing during the month]}}$

2. Emission Limitations:

- a. Emissions of particulate matter from the B-Line Coal and Pitch Preparation Area shall not exceed the allowable rate limit as calculated by the following equation [401 KAR 59:010, Section 3 (2)]:

$$\text{For process rates up to 60,000 lb/hr: } E = 3.59P^{0.62}$$

Where E = rate of emissions in lb/hr, and

P = process weight rate in tons/hr of coal processed at the B-Line Coal and Pitch Preparation Area (i.e.: The hourly coal throughput rate determined in 1.d., above).

- b. Emissions of particulate matter from the B-Line Coal and Pitch Preparation operations shall not exceed 3.29 tons during any consecutive 12 months [*Synthetic Minor Limit*, Permit O-94-020 (Revision 1)].
- c. The opacity of visible emissions from the B-Line Coal and Pitch Preparation operations shall not equal or exceed 20 percent [401 KAR 59:010, Section 3 (1)].
- d. The baghouse associated with the B-Line Coal and Pitch Preparation operations shall control emissions of particulate matter and be operated properly in accordance with manufacturer's specifications and/or standard operating procedures at all times the B-Line Coal and Pitch Preparation are in operation. The permittee is required to use the baghouse associated with the B-Line Coal and Pitch Preparation operations in order meet the particulate matter emission standard

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

B. B-LINE:

09 (B-01) B-Line Coal and Pitch Preparation Area

2. Emission Limitations: (continued)

Compliance Demonstration Method:

a. Mass Emission Standard:

Actual PM Emission Rate = [Emission factor observed during last stack test (in pounds PM/per ton coal)] ? [The hourly coal throughput rate determined in 1.d., above]

b. Opacity Limit:

- i. During periods of normal operation of the baghouse, no compliance demonstration is necessary other than the weekly visual inspection required by paragraph 4.d. below.
- ii. If the B-Line Coal and Pitch Preparation Area is in operation during any period of malfunction of its associated baghouse, the permittee shall determine compliance through maintenance of the records required by paragraph 5.c. below.

c. Use of Baghouse:

The permittee shall record the occurrence, duration, cause, and any corrective action taken for each incident when the B-Line Coal and Pitch Preparation Area is in operation but the corresponding baghouse is not in operation.

3. Testing Requirements:

Pursuant to Regulations 401 KAR 59:005, Section 2(2) and 401 KAR 50:045, Section 1, performance testing using the Reference Methods specified in Regulation 401 KAR 50:015 shall be conducted as required by the Division.

4. Specific Monitoring Requirements:

The permittee shall monitor the following parameters:

- a. Total weight of coal processed at the B-Line Coal and Pitch Preparation Area each month.
- b. Total hours of coal processing during the month.
- c. The permittee shall install, calibrate, maintain, and operate according to manufacturer's specification a monitoring device for the continuous measurement of the pressure loss of the gas stream through the B-Line Coal and Pitch Preparation Area baghouse.
- d. The permittee shall visually inspect the B-Line Coal and Pitch Preparation Area baghouse once per week during operation of the B-Line Coal and Pitch Preparation Area. The weekly inspection shall consist of a visual inspection of the physical condition of the external unit, combined with the corresponding visual emissions observation as outlined in paragraph 5.c. below.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

B. B-LINE:

09 (B-01) B-Line Coal and Pitch Preparation Area

5. Specific Recordkeeping Requirements:

The permittee shall maintain records of the following information:

- a. Total weight of coal processed at the B-Line Coal and Pitch Preparation Area each month.
- b. Total hours of coal processing during the month.
- c. During all periods of malfunction of the baghouse, if the B-Line Coal and Pitch Preparation Area is in operation, a daily (calendar day) log of the following information shall be kept:
 - i. Whether any air emissions were visible from the baghouse stack;
 - ii. Whether the visible emissions were normal for the baghouse.
 - iii. The cause of any abnormal emissions and any corrective action taken.

If visible emissions are observed, the permittee shall perform a Method 9 reading as outlined in Appendix M to 40 CFR Part 51 for the A-Line Packaging operations stack. The opacity observed shall be recorded in the daily log. The reading shall be performed by a representative of the permittee certified in Visible Emissions Evaluations. The permittee shall maintain a list of all individuals that are certified Visible Emissions Evaluators and the date of certification.

- d. For the B-Line Coal and Pitch Preparation Area baghouse, a record of the following information:
 - i. A record of the weekly reading of the pressure loss of the gas stream through the baghouse as indicated by the continuous monitor.
 - ii. Findings of the weekly visual inspection and any corrective actions taken as a result.
- e. All maintenance activities performed at the baghouse.

6. Specific Reporting Requirements:

The permittee shall submit a report of the following information to the Division for Air Quality's Ashland office in accordance with section F. 7. and F. 8:

- a. Any exceedance of the particulate matter and opacity emission limitations within thirty days of when the exceedance is determined.
- b. The occurrence, duration, cause, and any corrective action taken for each incident when the B-Line Coal and Pitch Preparation Area is in operation but the baghouse is not in operation.

7. Specific Control Equipment Operating Conditions: None.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**B. B-LINE:**

- 11 (B-02) Two (2) B-Line Bakers with Waste Heat Boiler (51.0 mmBTU/hr)
 B-Line 1st Pass Baker to B-Line 2nd Pass Baker Drag Conveyor
 B-Line Baker to Activator Elevator
 B-Line Baker to C-Line Activator Transfer Elevator
 Urea Injection Provision for Custom Product
 Controls: Afterburner (VOC)
 Scrubber (PM/PM₁₀, SO₂)

APPLICABLE REGULATIONS:

- a. 401 KAR 59:010, *New Process Operations*, applies to the emissions of particulate matter from the B-Line Bakers.
- b. 401 KAR 50:012, *General Application*, applies to the emissions of volatile organic compounds from the B-Line Bakers.

1. Operating Limitations:

The total weight of coal processed through the B-Line Bakers shall not exceed 7.8 tons per hour and 68,328 tons during any consecutive 12 months [Permit V-00-015].

Compliance Demonstration Method:

The permittee shall maintain monthly records of the following information:

- a. Total weight of coal processed through the B-Line Bakers each month.
- b. Total weight of coal processed through the B-Line Bakers during the previous 12 months.
- c. Total hours of operation of the B-Line Bakers during the month.
- d. Hourly coal throughput = $\frac{\text{[Total weight of coal processed through the B-Line Bakers each month]}}{\text{[Total hours of operation of the B-Line Bakers during the month]}}$

2. Emission Limitations:

- a. Emissions of particulate matter from the B-Line Bakers shall not exceed the allowable rate limit as calculated by the following equation [401 KAR 59:010, Section 3 (2)]:
 For process rates up to 60,000 lb/hr: $E = 3.59P^{0.62}$
 Where E = rate of emissions in lb/hr, and
 P = process weight rate in tons/hr of coal processed through the B-Line Bakers (i.e.: The hourly coal throughput rate determined in 1.d., above).
- b. Emissions of particulate matter from the B-Line Bakers shall not exceed 21.46 tons during any consecutive 12 months [*Synthetic Minor Limit*, Permit O-94-020 (Revision 1)].
- c. The opacity of visible emissions from the B-Line Preparation Area to Baker Elevator shall not equal or exceed 20 percent [401 KAR 59:010, Section 3 (1)].
- d. Emissions of sulfur dioxide B-Line Bakers shall not exceed 8.90 lb/hr and 39.0 tons during any consecutive 12 months [*Synthetic Minor Limit*, Permit O-94-020 (Revision 1)].

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

B. B-LINE:

- 11 (B-02) Two (2) B-Line Bakers
B-Line 1st Pass Baker to B-Line 2nd Pass Baker Drag Conveyor
B-Line Baker to Activator Elevator
B-Line Baker to C-Line Activator Transfer Elevator
Urea Injection Provision for Custom Product

2. Emission Limitations: (continued)

- e. The wet scrubber associated with the B-Line Bakers shall control emissions of particulate matter and sulfur dioxide and be operated properly in accordance with manufacturer's specifications and/or standard operating procedures at all times the B-Line Bakers are in operation. The permittee is required to use the wet scrubber associated with the B-Line Bakers in order meet the applicable emission standards for particulate matter and sulfur dioxide.
- f. The afterburner associated with the B-Line Bakers shall control emissions of volatile organic compounds (VOC) and be operated properly in accordance with manufacturer's specifications and/or standard operating procedures at all times the B-Line Bakers are in operation [401 KAR 50:012, Section 1 (1)].

Compliance Demonstration Method:

a. Mass Emission Standard:

Actual PM / SO₂ Emission Rate = [Emission factor observed during last stack test (in pounds PM / SO₂ per ton coal)] ? [The hourly coal throughput rate determined in 1.d., above]

b. Opacity Limit:

- i. During periods of normal operation of the wet scrubber, no compliance demonstration is necessary other than the weekly visual inspection required by paragraph 4.d. below.
- ii. If the B-Line Bakers are in operation during any period of malfunction of the associated wet scrubber, the permittee shall determine compliance through maintenance of the records required by paragraph 5.d. below.

c. Use of Wet Scrubber:

The permittee shall record the occurrence, duration, cause, and any corrective action taken for each incident when the B-Line Bakers are in operation but the corresponding wet scrubber is not in operation.

d. Use of Afterburner:

The permittee shall record the occurrence, duration, cause, and any corrective action taken for each incident when the B-Line Bakers are in operation but the corresponding afterburner is not in operation.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

B. B-LINE:

- 11 (B-02) Two (2) B-Line Bakers
B-Line 1st Pass Baker to B-Line 2nd Pass Baker Drag Conveyor
B-Line Baker to Activator Elevator
B-Line Baker to C-Line Activator Transfer Elevator
Urea Injection Provision for Custom Product

3. Testing Requirements:

- a. See General Condition **Section G.** (d) 5.
- b. Pursuant to Regulations 401 KAR 59:005, Section 2(2) and 401 KAR 50:045, Section 1, performance testing using the Reference Methods specified in Regulation 401 KAR 50:015 shall be conducted as required by the Division.

4. Specific Monitoring Requirements:

The permittee shall monitor the following parameters:

- a. Total weight of coal processed at the B-Line Bakers each month.
- b. Total hours of operation of the B-Line Bakers during the month.
- c. The permittee shall maintain, calibrate and operate according to manufacturer's specification, monitoring devices for the continuous measurement of:
 - i. The temperature in the combustion chamber of the afterburner.
 - ii. The scrubbing liquid pressure or flowrate to the wet scrubber.
- d. The permittee shall visually inspect the B-Line Bakers scrubber once per week during operation of the B-Line Bakers. The weekly inspection shall consist of the visual emissions observation as outlined in paragraph 5.d. below.

5. Specific Recordkeeping Requirements:

The permittee shall maintain records of the following information:

- a. Total weight of coal processed at the B-Line Bakers each month.
- b. Total hours of operation of the B-Line Bakers during the month.
- c. Continuous records of the following information:
 - i. The temperature in the combustion chamber of the afterburner.
 - ii. The scrubbing liquid pressure or flowrate to the wet scrubber.
- d. During all periods of malfunction of the wet scrubber, if the B-Line Bakers are in operation, a daily (calendar day) log of the following information shall be kept:
 - i. Whether any air emissions were visible from the wet scrubber stack;
 - ii. Whether the visible emissions were normal for the wet scrubber stack;
 - iii. The cause of any abnormal emissions and any corrective action taken.

If visible emissions are observed, the permittee shall perform a Method 9 reading as outlined in Appendix M to 40 CFR Part 51 for the B-Line Bakers wet scrubber stack. The opacity observed shall be recorded in the daily log. The reading shall be performed by a representative of the permittee certified in Visible Emissions Evaluations. The permittee shall maintain a list of all individuals that are certified Visible Emissions Evaluators and the

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

B. B-LINE:

- 11 (B-02) Two (2) B-Line Bakers
B-Line 1st Pass Baker to B-Line 2nd Pass Baker Drag Conveyor
B-Line Baker to Activator Elevator
B-Line Baker to C-Line Activator Transfer Elevator
Urea Injection Provision for Custom Product

5. Specific Recordkeeping Requirements: (continued)

- e. All maintenance activities performed at the wet scrubber and afterburner.
- f. Quantity of urea utilized during the manufacture of custom product, and the manufacturing schedule for the custom product runs.

6. Specific Reporting Requirements:

The permittee shall submit a report of the following information to the Division for Air Quality's Ashland office in accordance with Section F. 7. and F. 8:

- a. Any exceedance of the particulate matter and opacity emission limitations within thirty days of when the exceedance is determined.
- b. The occurrence, duration, cause, and any corrective action taken for each incident when the B-Line Bakers are in operation but the associated scrubber is not in operation.

7. Specific Control Equipment Operating Conditions:

For the B-Line Baker afterburner:

The afterburner shall operate at a minimum temperature of 1400°F (3-hour average). An **excursion** from the operating range specified is any 3-hour period during which the average temperature in the afterburner was below the minimum specified.

For the B-Line Baker wet scrubber:

The wet scrubber shall be operated at a minimum total flow rate of 100 gpm of liquid to the scrubber (3-hour average). An **excursion** from the operating range specified is any 3-hour period during which the average flow rate of scrubbing liquid to the scrubber was below the minimum specified.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

B. B-LINE:

12 (B-08, 09) B-Line Baker Heater
Rating: 20.0 mmBTU/hr, natural gas fired
Date of construction: 1990

APPLICABLE REGULATIONS:

- a. 401 KAR 59:015, *New indirect heat exchangers*, applies to the emissions of particulate matter and sulfur dioxide from the B-Line Baker Heater.
- b. 401 KAR 53:005, *General provisions* was applied to this emission point in order to meet NAAQS for sulfur dioxide.

1. Operating Limitations: None.

2. Emission Limitations:

- a. Emissions of particulate matter from the B-Line Baker Heater shall not exceed 0.35 lb/mmBTU [401 KAR 59:015, Section 4 (1)].
- b. Emissions of sulfur dioxide from the B-Line Baker Heater shall not exceed 0.0853 lb/mmBTU [401 KAR 53:005, and Permit V-00-015 (Revision 2)].
- c. The opacity of visible emissions from the B-Line Baker Heater shall not exceed 20 percent [401 KAR 59:015, Section 4 (2)] except as provided below:
 - i. Pursuant to 401 KAR 59:015, Section 4(2)(b), a maximum of 40% opacity is permissible for not more than 6 consecutive minutes in any 60 consecutive minute period during cleaning the fire box or blowing soot.
 - ii. Pursuant to 401 KAR 59:015, Section 4(2)(c), the opacity standard does not apply during building a new fire for the period required to bring the boiler up to operating conditions, provided the method used is that recommended by the manufacturer and the time does not exceed the manufacturer's recommendations.
 - iii. Pursuant to 401 KAR 50:055, Section 2(4), the opacity standard does not apply during periods of startup and shutdown.

Compliance Demonstration Method:

Mass Emission Limits:

For particulate matter and sulfur dioxide, no compliance demonstration is necessary for the applicable emission standards (lb/mmBTU) while natural gas is the only fuel used.

Opacity Limits:

No compliance demonstration is necessary for the applicable opacity standard while natural gas is the only fuel used.

3. Testing Requirements:

Pursuant to Regulations 401 KAR 59:005, Section 2(2) and 401 KAR 50:045, Section 1, performance testing using the Reference Methods specified in Regulation 401 KAR 50:015 shall be conducted as required by the Division.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

B. B-LINE:

12 (B-08, 09) B-Line Baker Heater

4. Specific Monitoring Requirements:

The permittee shall monitor the fuel consumption of natural gas at the B-Line Baker Heater.

5. Specific Recordkeeping Requirements:

The permittee shall maintain records of the fuel consumption of natural gas at the B-Line Baker Heater.

6. Specific Reporting Requirements: None.

7. Specific Control Equipment Operating Conditions: Not applicable.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**B. B-LINE:**

- 14 (B-04)
1. B-Line Activator Furnace #3
Rating: 24.0 mmBTU/hr each (24 burners)
Fuel: Natural Gas
 2. Feed Bin to B-Line Activator Transfer Elevator (2)
Controls: Afterburner (VOC)
Scrubber (PM/PM₁₀, SO₂)

APPLICABLE REGULATIONS:

- a. 401 KAR 61:020, *Existing Process Operations*, applies to the emissions of particulate matter from the B-Line Activator.
- b. 401 KAR 50:012, *General Application*, applies to the emissions of volatile organic compounds from the B-Line Activator.
- c. 401 KAR 53:005, *General provisions* was applied to this emission point in order to meet NAAQS for sulfur dioxide.

1. Operating Limitations:

The total weight of carbon processed through the B-Line Activator shall not exceed 1.5 tons per hour and 13,140 tons during any consecutive 12 months [Permit O-94-020 (Revision 1)].

Compliance Demonstration Method:

The permittee shall maintain monthly records of the following information:

- a. Total weight of carbon processed through the B-Line Activator each month.
- b. Total weight of carbon processed through the B-Line Activator during the previous 12 months.
- c. Total hours of operation of the B-Line Activator during the month.
- d. Hourly carbon throughput = $\frac{\text{[Total weight of carbon processed through the B-Line Activator each month]}}{\text{[Total hours of operation of the B-Line Activator during the month]}}$

2. Emission Limitations:

- a. Emissions of particulate matter from the B-Line Activator shall not exceed the allowable rate

limit as calculated by the following equation [401 KAR 61:020, Section 3 (2)]:

$$\text{For process rates up to 60,000 lb/hr: } E = 4.10P^{0.67}$$

Where E = rate of emissions in lb/hr, and

P = process weight rate in tons/hr of carbon processed through the B-Line Activator (i.e.: The hourly carbon throughput rate determined in 1.d., above.).

- b. The opacity of visible emissions from the B-Line Activator shall not equal or exceed 40 percent [401 KAR 61:020, Section 3 (1)].
- c. Emissions of SO₂ from the B-Line Activator shall not exceed 2.88 lbs/hr and 12.6 tons during any consecutive 12 months [401 KAR 53:005, and Permit V-00-015 (Revision 2)].

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

B. B-LINE:

- 14 (B-04) B-Line Activator Furnace #3
Feed Bin to B-Line Activator Transfer Elevator (2)

2. Emission Limitations: (continued)

- d. The afterburner shall control emissions of volatile organic compounds and be operated properly in accordance with manufacturer's specifications and/or standard operating procedures at all times the B-Line Activator is in operation [401 KAR 50:012, Section 1 (1)]. The B-Line Activator is considered in operation any time carbon is being conveyed to the Activator.
- e. The wet scrubber associated with the B-Line Activator shall control emissions of particulate matter and sulfur dioxide and be operated properly in accordance with manufacturer's specifications and/or standard operating procedures at all times the B-Line Activator is in operation. The permittee is required to use the wet scrubber associated with the B-Line Activator in order to maintain NAAQS emission standards for sulfur dioxide.

Compliance Demonstration Method:

a. Mass Emission Standard:

Actual PM / SO₂ Emission Rate = [Emission factor observed during last stack test (in pounds PM / SO₂ per ton carbon)] ? [The hourly carbon throughput rate determined in 1.d., above]

b. Opacity Limit:

- i. During periods of normal operation of the wet scrubber, no compliance demonstration is necessary other than the weekly visual inspection required by paragraph 4.d. below.
- ii. If the B-Line Activator is in operation during any period of malfunction of the associated wet scrubber, the permittee shall determine compliance through maintenance of the records required by paragraph 5.d. below.

c. Use of Afterburner:

The permittee shall record the occurrence, duration, cause, and any corrective action taken for each incident when the B-Line Activator is in operation but the corresponding afterburner is not.

d. Use of Scrubber:

The permittee shall record the occurrence, duration, cause, and any corrective action taken for each incident when the B-Line Activator is in operation but the corresponding scrubber is not.

3. Testing Requirements:

Pursuant to Regulations 401 KAR 59:005, Section 2(2) and 401 KAR 50:045, Section 1, performance testing using the Reference Methods specified in Regulation 401 KAR 50:015 shall be conducted as required by the Division.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

B. B-LINE:

- 14 (B-04) B-Line Activator Furnace #3
Feed Bin to B-Line Activator Transfer Elevator (2)

4. Specific Monitoring Requirements:

The permittee shall monitor the following parameters:

- a. Amount of carbon processed through the B-Line Activator per month.
- b. Hours of operation of the B-Line Activator per month.
- c. The permittee shall maintain, calibrate and operate according to manufacturer's specification, monitoring devices for the continuous measurement of:
 - i. The temperature in the combustion chamber of each afterburner.
 - ii. The pressure loss of waste gas stream through each wet scrubber.
 - iii. The scrubbing liquid pressure or flowrate to each wet scrubber.
- d. The permittee shall visually inspect the B-Line Activator scrubber once per week during operation of the B-Line Activator. The weekly inspection shall consist of the corresponding visual emissions observation as outlined in paragraph 5.d. below.

5. Specific Recordkeeping Requirements:

The permittee shall maintain records of the following information:

- a. Amount of carbon processed through the B-Line Activator per month.
- b. Hours of operation of the B-Line Activator per month.
- c. Continuous records of the following information:
 - i. The temperature in the combustion chamber of each afterburner.
 - ii. The pressure loss of waste gas stream through each wet scrubber.
 - iii. The scrubbing liquid pressure or flowrate to each wet scrubber.
- d. During all periods of malfunction of the wet scrubber, if the B-Line Activator is in operation, a daily (calendar day) log of the following information shall be kept:
 - i. Whether any air emissions were visible from the wet scrubber stack;
 - ii. Whether the visible emissions were normal for the wet scrubber stack;
 - iii. The cause of any abnormal emissions and any corrective action taken.If visible emissions are observed, the permittee shall perform a Method 9 reading as outlined in Appendix M to 40 CFR Part 51 for the B-Line Activator wet scrubber stack. The opacity observed shall be recorded in the daily log. The reading shall be performed by a representative of the permittee certified in Visible Emissions Evaluations. The permittee shall maintain a list of all individuals that are certified Visible Emissions Evaluators and the date of certification.
- e. All maintenance activities performed at the wet scrubber and afterburner.

6. Specific Reporting Requirements:

The permittee shall submit a report of the following information to the Division for Air Quality's Ashland office in accordance with section F. 7. and F. 8:

- a. Any exceedance of the particulate matter and opacity emission limitations within thirty days of when the exceedance is determined.
- b. The occurrence, duration, cause, and any corrective action taken for each incident when the B-Line

Activator is in operation but the associated scrubber is not in operation.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

B. B-LINE:

- 14 (B-04) B-Line Activator Furnace #3
Feed Bin to B-Line Activator Transfer Elevator (2)

7. Specific Control Equipment Operating Conditions:

For the B-Line Activator afterburner:

The afterburner shall operate at a minimum temperature of 1400°F (3-hour average). An **excursion** from the operating range specified is any 3-hour period during which the average temperature in the afterburner was below the minimum specified.

For the B-Line Activator wet scrubber:

- a. The wet scrubber shall be operated at a minimum total flow rate of 750 gpm of liquid to the scrubber (3-hour average). An **excursion** from the operating range specified is any 3-hour period during which the average flow rate of scrubbing liquid to the scrubber was below the minimum specified.
- b. The wet scrubber shall be operated at a minimum total differential pressure drop of 8.0 inches of water (3-hour average). An **excursion** from the operating range specified is any 3-hour period during which the average pressure drop across the wet scrubber was below the minimum specified.

8. Compliance Schedule: See Section I.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

B. B-LINE:

- 15 (B-06) B-Line Packaging operations
 B-Line Packaging Recycle Elevator
 Controls: Baghouse (PM/PM₁₀)

APPLICABLE REGULATIONS:

401 KAR 61:020, *Existing Process Operations*, applies to the emissions of particulate matter from the B-Line Packaging operations.

1. Operating Limitations:

The total weight of activated carbon processed at the B-Line Packaging operations shall not exceed 2.0 tons per hour and 17,520 tons during any consecutive 12 months [Permit O-94-020 (Revision 1)].

Compliance Demonstration Method:

The permittee shall maintain monthly records of the following information:

- a. Total weight of activated carbon processed at the B-Line Packaging operations each month.
- b. Total weight of activated carbon processed at the B-Line Packaging operations during the previous 12 months.
- c. Total hours of activated carbon processing during the month.
- d. Hourly activated carbon throughput = $\frac{\text{[Total weight of activated carbon processed at the B-Line Packaging operations each month]}}{\text{[Total hours of activated carbon processing during the month]}}$

2. Emission Limitations:

- a. Emissions of particulate matter from the B-Line Packaging operations shall not exceed the allowable rate limit as calculated by the following equation [401 KAR 61:020, Section 3 (2)]:
 For process rates up to 60,000 lb/hr: $E = 4.10P^{0.67}$
 Where E = rate of emissions in lb/hr, and
 P = process weight rate in tons/hr of activated carbon processed at the B-Line Packaging operations (i.e.: The hourly activated carbon throughput rate determined in 1.d., above.).
- b. The opacity of visible emissions from the B-Line Packaging operations shall not equal or exceed 40 percent [401 KAR 61:020, Section 3 (1)].
- c. The baghouse associated with the B-Line Packaging operations shall control emissions of particulate matter and be operated properly in accordance with manufacturer's specifications and/or standard operating procedures at all times the B-Line Packaging is in operation. The permittee is required to use the baghouse associated with the B-Line Packaging operations in order meet the particulate matter emission standard for the B-Line Packaging operations.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

B. B-LINE:

- 15 (B-06) B-Line Packaging operations
B-Line Packaging Recycle Elevator

2. Emission Limitations: (continued)

Compliance Demonstration Method:

a. Mass Emission Standard:

Actual PM Emission Rate = [Emission factor* observed during last stack test (in pounds PM/per ton activated carbon)] ? [The hourly activated carbon throughput rate determined in 1.d., above]

*Alternate emission factor may be established based on demonstration of similarity to other tested sources and/or estimated using credible engineering judgement based on conservative assumptions.

b. Opacity Limit:

- i. During periods of normal operation of the baghouse, no compliance demonstration is necessary other than the weekly visual inspection required by paragraph 4.d. below.
- ii. If the B-Line Packaging unit is in operation during any period of malfunction of its associated baghouse, the permittee shall determine compliance through maintenance of the records required by paragraph 5.c. below.

c. Use of Baghouse:

The permittee shall record the occurrence, duration, cause, and any corrective action taken for each incident when the B-Line Packaging unit is in operation but the corresponding baghouse is not in operation.

3. Testing Requirements:

Pursuant to Regulations 401 KAR 59:005, Section 2(2) and 401 KAR 50:045, Section 1, performance testing using the Reference Methods specified in Regulation 401 KAR 50:015 shall be conducted as required by the Division.

4. Specific Monitoring Requirements:

The permittee shall monitor the following parameters:

- a. Total weight of activated carbon processed at the B-Line Packaging operations each month.
- b. Total hours of activated carbon processing during the month.
- c. The permittee shall install, calibrate, maintain, and operate according to manufacturer's specification a monitoring device for the continuous measurement of the pressure loss of the gas stream through the B-Line Packaging baghouse.
- d. The permittee shall visually inspect the B-Line Packaging baghouse once per week during B-Line Packaging operations. The weekly inspection shall consist of a visual inspection of the physical condition of the external unit, combined with the corresponding visual emissions observation as outlined in paragraph 5.c. below.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

B. B-LINE:

- 15 (B-06) B-Line Packaging operations
 B-Line Packaging Recycle Elevator

5. Specific Recordkeeping Requirements:

The permittee shall maintain records of the following information:

- a. Total weight of activated carbon processed at the B-Line Packaging operations each month.
- b. Total hours of activated carbon processing during the month.
- c. During all periods of malfunction of the baghouse, if the B-Line Packaging operations are in progress, a daily (calendar day) log of the following information shall be kept:
 - i. Whether any air emissions were visible from the baghouse stack;
 - ii. Whether the visible emissions were normal for the baghouse stack;
 - iii. The cause of any abnormal emissions and any corrective action taken.If visible emissions are observed, the permittee shall perform a Method 9 reading as outlined in Appendix M to 40 CFR Part 51 for B-Line Packaging operations baghouse stack. The opacity observed shall be recorded in the daily log. The reading shall be performed by a representative of the permittee certified in Visible Emissions Evaluations. The permittee shall maintain a list of all individuals that are certified Visible Emissions Evaluators and the date of certification
- d. For the B-Line Packaging operations, a record of the following information:
 - i. A record of the weekly reading of the pressure loss of the gas stream through the baghouse as indicated by the continuous monitor.
 - ii. Findings of the weekly visual inspection and any corrective actions taken as a result.
- e. All maintenance activities performed at the baghouse.
- f. If an emission factor from other than testing is used, the emission factor and its supporting assumptions from Compliance Demonstration Method 2.a., above.

6. Specific Reporting Requirements:

The permittee shall submit a report of the following information to the Division for Air Quality's Ashland office in accordance with section F. 7. and F. 8:

- a. Any exceedance of the particulate matter and opacity emission limitations within thirty days of when the exceedance is determined.
- b. The occurrence, duration, cause, and any corrective action taken for each incident when the B-Line Packaging operations are in progress but the associated baghouse is not in operation.

7. Specific Control Equipment Operating Conditions: None.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**C. C-LINE:**

- 21 (C-04, 05)
1. C-Line Activator Furnaces #5 & #6
Rating: 24.0 mmBTU/hr each (24 burners)
Fuel: Natural Gas
Controls: Afterburner (VOC)
Scrubber (PM/PM₁₀, SO₂)
 2. Feed Bin to C-Line Activator Transfer Elevators (4)

APPLICABLE REGULATIONS:

- a. 401 KAR 61:020, *Existing Process Operations*, applies to the emissions of particulate matter from the C-Line Activators.
- b. 401 KAR 50:012, *General Application*, applies to the emissions of volatile organic compounds from the C-Line Activators.
- c. 401 KAR 53:005, *General provisions*, was applied to this emission point in order to meet NAAQS for sulfur dioxide.

1. Operating Limitations:

The total weight of carbon processed through *each* individual C-Line Activator shall not exceed 2.0 tons per hour and 17,520 tons during any consecutive 12 months [Permit O-94-020 (Revision 1)].

Compliance Demonstration Method:

The permittee shall maintain monthly records of the following information:

- a. Total weight of carbon processed through the C-Line Activators each month.
- b. Total weight of carbon processed through the C-Line Activators during the previous 12 months.
- c. Total hours of operation of the C-Line Activators during the month.
- d. Hourly carbon throughput = [Total weight of carbon processed through the C-Line Activators each month] ? [Total hours of operation of the C-Line Activators during the month]

2. Emission Limitations:

- a. Emissions of particulate matter from *each* individual C-Line Activator shall not exceed the allowable rate limit as calculated by the following equation [401 KAR 61:020, Section 3 (2)]:

$$\text{For process rates up to 60,000 lb/hr: } E = 4.10P^{0.67}$$

Where E = rate of emissions in lb/hr, and

P = process weight rate in tons/hr of carbon processed through *each* individual C-Line Activator (i.e.: The hourly carbon throughput rate determined in 1.d., above).

- b. The opacity of visible emissions from *each* C-Line Activator shall not equal or exceed 40 percent [401 KAR 61:020, Section 3 (1)].
- c. Emissions of sulfur dioxide from *both* C-Line Activators combined shall not exceed 7.72 lbs/hr and 33.8 tons during any consecutive 12 months [401 KAR 53:005, and Permit V-00-015 (Revision 2)].

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

C. C-LINE:

21 (C-04, 05) C-Line Activators Furnaces #5 & #6
Feed Bin to C-Line Activator Transfer Elevators (4)

2. Emission Limitations: (continued)

- d. The afterburner shall control emissions of volatile organic compounds and be operated properly in accordance with manufacturer's specifications and/or standard operating procedures at all times the C-Line Activators are in operation [401 KAR 50:012, Section 1 (1)]. The C-Line Activators are considered in operation any time carbon is being conveyed to the Activators.
- e. The wet scrubber associated with the C-Line Activators shall control emissions of particulate matter and sulfur dioxide and be operated properly in accordance with manufacturer's specifications and/or standard operating procedures at all times the C-Line Activators are in operation. The permittee is required to use the wet scrubber associated with the C-Line Activators in order to maintain NAAQS emission standards for sulfur dioxide.

Compliance Demonstration Method:

a. Mass Emission Standard:

Actual PM / SO₂ Emission Rate = [Emission factor observed during last stack test (in pounds PM / SO₂ per ton carbon)] ? [The hourly carbon throughput rate determined in 1.d., above]

b. Opacity Limit:

- i. During periods of normal operation of the wet scrubber, no compliance demonstration is necessary other than the weekly visual inspection required by paragraph 4.d. below.
- ii. If the C-Line Activator is in operation during any period of malfunction of the associated wet scrubber, the permittee shall determine compliance through maintenance of the records required by paragraph 5.d. below.

c. Use of Afterburner:

The permittee shall record the occurrence, duration, cause, and any corrective action taken for each incident when the C-Line Activators are in operation but the corresponding afterburner is not.

d. Use of Scrubber:

The permittee shall record the occurrence, duration, cause, and any corrective action taken for each incident when the C-Line Activator is in operation but the corresponding scrubber is not.

3. Testing Requirements:

Pursuant to Regulations 401 KAR 59:005, Section 2(2) and 401 KAR 50:045, Section 1, performance testing using the Reference Methods specified in Regulation 401 KAR 50:015 shall be conducted as required by the Division.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

C. C-LINE:

21 (C-04, 05) C-Line Activators Furnaces #5 & #6
Feed Bin to C-Line Activator Transfer Elevators (4)

4. Specific Monitoring Requirements:

The permittee shall monitor the following parameters:

- a. Amount of carbon processed through the C-Line Activators per month.
- b. Hours of operation of the C-Line Activators per month.
- c. The permittee shall maintain, calibrate and operate according to manufacturer's specification, monitoring devices for the continuous measurement of:
 - i. The temperature in the combustion chamber of each afterburner.
 - ii. The pressure loss of waste gas stream through each wet scrubber.
 - iii. The scrubbing liquid pressure or flowrate to each wet scrubber.
- d. The permittee shall visually inspect the C-Line Activator scrubber once per week during operation of the C-Line Activators. The weekly inspection shall consist of the visual emissions observation as outlined in paragraph 5.d. below.

5. Specific Recordkeeping Requirements:

The permittee shall maintain records of the following information:

- a. Amount of carbon processed through the C-Line Activators per month.
- b. Hours of operation of the C-Line Activators per month.
- c. Continuous records of the following information:
 - i. The temperature in the combustion chamber of each afterburner.
 - ii. The pressure loss of waste gas stream through each wet scrubber.
 - iii. The scrubbing liquid pressure or flowrate to each wet scrubber.
- d. During all periods of malfunction of the wet scrubber, if the C-Line Activators are in operation, a daily (calendar day) log of the following information shall be kept:
 - i. Whether any air emissions were visible from the wet scrubber stack;
 - ii. Whether the visible emissions were normal for the wet scrubber stack;
 - iii. The cause of any abnormal emissions and any corrective action taken.If visible emissions are observed, the permittee shall perform a Method 9 reading as outlined in Appendix M to 40 CFR Part 51 for the C-Line Activator wet scrubber stack. The opacity observed shall be recorded in the daily log. The reading shall be performed by a representative of the permittee certified in Visible Emissions Evaluations. The permittee shall maintain a list of all individuals that are certified Visible Emissions Evaluators and the date of certification.
- e. All maintenance activities performed at the wet scrubber and afterburner.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

C. C-LINE:

- 21 (C-04, 05) C-Line Activators Furnaces #5 & #6
Feed Bin to C-Line Activator Transfer Elevators (4)

6. Specific Reporting Requirements:

The permittee shall submit a report of the following information to the Division for Air Quality's Ashland office in accordance with section F. 7. and F. 8:

- a. Any exceedance of the particulate matter and opacity emission limitations within thirty days of when the exceedance is determined.
- b. The occurrence, duration, cause, and any corrective action taken for each incident when the C-Line Activators are in operation but the associated scrubber is not in operation.

7. Specific Control Equipment Operating Conditions:

For the C-Line Activators afterburner:

The afterburner shall operate at a minimum temperature of 1400°F (3-hour average). An **excursion** from the operating range specified is any 3-hour period during which the average temperature in the afterburner was below the minimum specified.

For the C-Line Activator wet scrubber:

- a. The wet scrubber shall be operated at a minimum total flow rate of 1200 gpm of liquid to the scrubber (3-hour average). An **excursion** from the operating range specified is any 3-hour period during which the average flow rate of scrubbing liquid to the scrubber was below the minimum specified.
- b. The wet scrubber shall be operated at a minimum total differential pressure drop of 8.0 inches of water (3-hour average). An **excursion** from the operating range specified is any 3-hour period during which the average pressure drop across the wet scrubber was below the minimum specified.

8. Compliance Schedule: See Section I.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

C. C-LINE:

22 (C-06)

1. C-Line Packaging operations
2. Baker to Activator Discharge Elevator (*formerly from Baker #6, retained as dump-back elevator for totes*)

Controls: Baghouse (PM/PM₁₀)

APPLICABLE REGULATIONS:

401 KAR 61:020, *Existing Process Operations*, applies to the emissions of particulate matter from the C-Line Packaging operations.

1. Operating Limitations:

The total weight of activated carbon processed at the C-Line Packaging operations shall not exceed 4.0 tons per hour and 35,040 tons during any consecutive 12 months [Permit O-94-020 (Revision 1)].

Compliance Demonstration Method:

The permittee shall maintain monthly records of the following information:

- a. Total weight of activated carbon processed at the C-Line Packaging operations each month.
- b. Total weight of activated carbon processed at the C-Line Packaging operations during the previous 12 months.
- c. Total hours of activated carbon processing during the month.
- d. Hourly activated carbon throughput = [Total weight of activated carbon processed at the C-Line Packaging operations each month] ? [Total hours of activated carbon processing during the month]

2. Emission Limitations:

a. Emissions of particulate matter from the C-Line Packaging operations shall not exceed the allowable rate limit as calculated by the following equation [401 KAR 61:020, Section 3 (2)]:

$$\text{For process rates up to 60,000 lb/hr: } E = 4.10P^{0.67}$$

Where E = rate of emissions in lb/hr, and

P = process weight rate in tons/hr of activated carbon processed at the C-Line Packaging operations (i.e.: The hourly activated carbon throughput rate determined in 1.d., above).

- b. The opacity of visible emissions from the C-Line Packaging operations shall not equal or exceed 40 percent [401 KAR 61:020, Section 3 (1)].
- c. The baghouse associated with the C-Line Packaging operations shall control emissions of particulate matter and be operated properly in accordance with manufacturer's specifications and/or standard operating procedures at all times the C-Line Packaging is in operation. The permittee is required to use the baghouse associated with the C-Line Packaging operations in order meet the particulate matter emission standard for the C-Line Packaging operations.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

C. C-LINE:

- 22 (C-06)
1. C-Line Packaging operations
 2. Baker to Activator Discharge Elevator

2. Emission Limitations: (continued)

Compliance Demonstration Method:

a. Mass Emission Standard:

Actual PM Emission Rate = [Emission factor* observed during last stack test (in pounds PM/per ton activated carbon)] ? [The hourly activated carbon throughput rate determined in 1.d., above]

*Alternate emission factor may be established based on demonstration of similarity to other tested sources and/or estimated using credible engineering judgement based on conservative assumptions.

b. Opacity Limit:

- i. During periods of normal operation of the baghouse, no compliance demonstration is necessary other than the weekly visual inspection required by paragraph 4.d. below.
- ii. If the C-Line Packaging unit is in operation during any period of malfunction of its associated baghouse, the permittee shall determine compliance through maintenance of the records required by paragraph 5.c. below.

c. Use of Baghouse:

The permittee shall record the occurrence, duration, cause, and any corrective action taken for each incident when the C-Line Packaging unit is in operation but the corresponding baghouse is not in operation.

3. Testing Requirements:

Pursuant to Regulations 401 KAR 59:005, Section 2(2) and 401 KAR 50:045, Section 1, performance testing using the Reference Methods specified in Regulation 401 KAR 50:015 shall be conducted as required by the Division.

4. Specific Monitoring Requirements:

The permittee shall monitor the following parameters:

- a. Total weight of activated carbon processed at the C-Line Packaging operations each month.
- b. Total hours of activated carbon processing during the month.
- c. The permittee shall install, calibrate, maintain, and operate according to manufacturer's specification a monitoring device for the continuous measurement of the pressure loss of the gas stream through the C-Line Packaging baghouse.
- d. The permittee shall visually inspect the C-Line Packaging baghouse once per week during C-Line Packaging operations. The weekly inspection shall consist of a visual inspection of the physical condition of the external unit, combined with the corresponding visual emissions observation as outlined in paragraph 5.c. below.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

C. C-LINE:

- 22 (C-06)
1. C-Line Packaging operations
 2. Baker to Activator Discharge Elevator

5. Specific Recordkeeping Requirements:

The permittee shall maintain records of the following information:

- a. Total weight of activated carbon processed at the C-Line Packaging operations each month.
- b. Total hours of activated carbon processing during the month.
- c. During all periods of malfunction of the baghouse, if the C-Line Packaging operations are in progress, a daily (calendar day) log of the following information shall be kept:
 - i. Whether any air emissions were visible from the baghouse stack;
 - ii. Whether the visible emissions were normal for the baghouse stack;
 - iii. The cause of any abnormal emissions and any corrective action taken.

If visible emissions are observed, the permittee shall perform a Method 9 reading as outlined in Appendix M to 40 CFR Part 51 for C-Line Packaging operations baghouse stack. The opacity observed shall be recorded in the daily log. The reading shall be performed by a representative of the permittee certified in Visible Emissions Evaluations. The permittee shall maintain a list of all individuals that are certified Visible Emissions Evaluators and the date of certification

- d. For the C-Line Packaging operations baghouse, a record of the following information:
 - i. A record of the weekly reading of the pressure loss of the gas stream through the baghouse as indicated by the continuous monitor.
 - ii. Findings of the weekly visual inspection and any corrective actions taken as a result.
- e. All maintenance activities performed at the baghouse.
- f. If an emission factor from other than testing is used, the emission factor and its supporting assumptions from Compliance Demonstration Method 2.a., above.

6. Specific Reporting Requirements:

The permittee shall submit a report of the following information to the Division for Air Quality's Ashland office in accordance with section F. 7. and F. 8:

- a. Any exceedance of the particulate matter and opacity emission limitations within thirty days of when the exceedance is determined.
- b. The occurrence, duration, cause, and any corrective action taken for each incident when the C-Line Packaging operations are in progress but the associated baghouse is not in operation.

7. Specific Control Equipment Operating Conditions: None.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

25 (M-03) Acid Wash Transfer and Packaging System
Controls: Baghouse (PM/PM₁₀)

The Acid Wash Transfer and Packaging System consists of the following equipment that is vented to the baghouse:

- Acid Wash Product Cooler Elevator
- Screener
- On-size Elevator
- Eight Product Bins
- Two Packaging Machines
- Two Dedusters
- Vibratory Conveyor
- Three Charge Bins

APPLICABLE REGULATIONS:

401 KAR 59:010, *New Process Operations*, applies to the emissions of particulate matter from the Acid Wash Transfer and Packaging System.

1. **Operating Limitations:** None.

2. **Emission Limitations:**

- a. Emissions of particulate matter from the Acid Wash Transfer and Packaging System shall not exceed the allowable rate limit as calculated by the following equation [401 KAR 59:010, Section 3 (2)]:

$$\text{For process rates up to 60,000 lb/hr: } E = 3.59P^{0.62}$$

Where E = rate of emissions in lb/hr, and

P = process weight rate in tons/hr of activated carbon processed at the Acid Wash Transfer and Packaging System (i.e.: [Amount of activated carbon processed at the Acid Wash Transfer and Packaging System per month] ÷ [Total hours of activated carbon processing during the month]).

- b. Emissions of particulate matter from the Acid Wash Transfer and Packaging System shall not exceed 5.26 tons during any consecutive 12 months [*Synthetic Minor Limit*, Permit O-94-020 (Revision 1)].
- c. The opacity of visible emissions from the Acid Wash Transfer and Packaging System shall not equal or exceed 20 percent [401 KAR 59:010, Section 3 (1)].
- d. The baghouse associated with the Acid Wash Transfer and Packaging System shall control emissions of particulate matter and be operated properly in accordance with manufacturer's specifications and/or standard operating procedures at all times the Acid Wash Transfer and Packaging System is in operation. The permittee is required to use the baghouse associated with the Acid Wash Transfer and Packaging System in order meet the particulate matter emission standard for the Acid Wash Transfer and Packaging System.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

25 (M-03) Acid Wash Transfer and Packaging System

2. Emission Limitations: (continued)

Compliance Demonstration Method:

a. Mass Emission Standard:

Actual PM Emission Rate = [Emission factor observed during last stack test (in pounds PM/per ton activated carbon)] * [The process weight rate determined in 2.a., above]

b. Opacity Limit:

- i. During periods of normal operation of the baghouse, no compliance demonstration is necessary other than the weekly visual inspection required by paragraph 4.d. below.
- ii. If the Acid Wash Transfer and Packaging System is in operation during any period of malfunction of its associated baghouse, the permittee shall determine compliance through maintenance of the records required by paragraph 5.c. below.

c. Use of Baghouse:

The permittee shall record the occurrence, duration, cause, and any corrective action taken for each incident when the Acid Wash Transfer and Packaging System is in operation but the corresponding baghouse is not in operation.

3. Testing Requirements:

Pursuant to Regulations 401 KAR 59:005, Section 2(2) and 401 KAR 50:045, Section 1, performance testing using the Reference Methods specified in Regulation 401 KAR 50:015 shall be conducted as required by the Division.

4. Specific Monitoring Requirements:

The permittee shall monitor the following parameters:

- a. Total weight of activated carbon processed at the Acid Wash Transfer and Packaging System each month.
- b. Total hours of activated carbon processing during the month.
- c. The permittee shall install, calibrate, maintain, and operate according to manufacturer's specification a monitoring device for the continuous measurement of the pressure loss of the gas stream through the Acid Wash Transfer and Packaging System baghouse.
- d. The permittee shall visually inspect the Acid Wash Transfer and Packaging System baghouse once per week during operation of the Acid Wash Transfer and Packaging System. The weekly inspection shall consist of a visual inspection of the physical condition of the external unit, combined with the corresponding visual emissions observation as outlined in paragraph 5.c. below.

5. Specific Recordkeeping Requirements:

The permittee shall maintain records of the following information:

- a. Total weight of activated carbon processed at the Acid Wash Transfer and Packaging System each month.

- b. Total hours of activated carbon processing during the month.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

25 (M-03) Acid Wash Transfer and Packaging System

5. Specific Recordkeeping Requirements: (continued)

- c. During all periods of malfunction of the baghouse, if Acid Wash Transfer and Packaging System operations are in progress, a daily (calendar day) log of the following information shall be kept:
 - i. Whether any air emissions were visible from the baghouse stack;
 - ii. Whether the visible emissions were normal for the baghouse stack;
 - iii. The cause of any abnormal emissions and any corrective action taken.If visible emissions are observed, the permittee shall perform a Method 9 reading as outlined in Appendix M to 40 CFR Part 51 for the Acid Wash Transfer and Packaging System operations baghouse stack. The opacity observed shall be recorded in the daily log. The reading shall be performed by a representative of the permittee certified in Visible Emissions Evaluations. The permittee shall maintain a list of all individuals that are certified Visible Emissions Evaluators and the date of certification.
- d. For the Acid Wash Transfer and Packaging System, a record of the following information:
 - i. A record of the weekly reading of the pressure loss of the gas stream through the baghouse as indicated by the continuous monitor.
 - ii. Findings of the weekly visual inspection and any corrective actions taken as a result.
- e. All maintenance activities performed at the baghouse.

6. Specific Reporting Requirements:

The permittee shall submit a report of the following information to the Division for Air Quality's Ashland office in accordance with section F. 7. and F. 8:

- a. Any exceedance of the particulate matter and opacity emission limitations within thirty days of when the exceedance is determined.
- b. The occurrence, duration, cause, and any corrective action taken for each incident when Acid Wash Transfer and Packaging System operations are in progress but the associated baghouse is not in operation.

7. Specific Control Equipment Operating Conditions: None.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- 26 (M-04)
1. Acid Wash Process
 2. E-Line to Acid Wash Process Transfer Conveyor
- Controls: Baghouse (PM/PM₁₀)

The Acid Wash Process consists of the following equipment that is vented to the baghouse:

- Natural gas fired Rotary Dryer (15.0 mmBTU/hr)
- Five (5) Acid Wash Reactors
- Two (2) Batch Dewatering Bins
- Two (2) Dryer Feed Bins

APPLICABLE REGULATIONS:

- a. 401 KAR 59:010, *New Process Operations*, applies to the emissions of particulate matter from the Acid Wash Process.
- b. 401 KAR 53:005, *General provisions*, was applied to this emission point in order to meet NAAQS.

1. Operating Limitations:

The total weight of activated carbon processed at the Acid Wash Process shall not exceed 4.0 tons per hour and 35,040 tons during any consecutive 12 months [Permit O-94-020 (Revision 1)].

Compliance Demonstration Method:

The permittee shall maintain monthly records of the following information:

- a. Total weight of activated carbon processed at the Acid Wash Process each month.
- b. Total weight of activated carbon processed at the Acid Wash Process during the previous 12 months.
- c. Total hours of activated carbon processing during the month.
- d. Hourly activated carbon throughput = [Total weight of activated carbon processed at the Acid Wash Process each month]? [Total hours of activated carbon processing during the month]

2. Emission Limitations:

- a. Emissions of particulate matter from the Acid Wash Process shall not exceed the allowable rate limit as calculated by the following equation [401 KAR 59:010, Section 3 (2)]:
 For process rates up to 60,000 lb/hr: $E = 3.59P^{0.62}$
 Where E = rate of emissions in lb/hr, and
 P = process weight rate in tons/hr of activated carbon processed at the Acid Wash Process (i.e.: The hourly activated carbon throughput rate determined in 1.d., above).
- b. Emissions of SO₂ from the Acid Wash Process shall not exceed 1.278 lb/hr and 5.598 tons during any consecutive 12 months [401 KAR 53:005, and Permit V-00-015 (Revision 2)].
- c. Emissions of particulate matter from the Acid Wash Process shall not exceed 7.88 tons during any consecutive 12 months [*Synthetic Minor Limit*, Permit O-94-020 (Revision 1)].

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- 26 (M-04) 1. Acid Wash Process
2. E-Line to Acid Wash Process Transfer Conveyor

2. Emission Limitations: (continued)

- d. The opacity of visible emissions from the Acid Wash Process shall not equal or exceed 20 percent [401 KAR 59:010, Section 3 (1)].
- e. The baghouse associated with the Acid Wash Process shall control emissions of particulate matter and be operated properly in accordance with manufacturer's specifications and/or standard operating procedures at all times the Acid Wash Process is in operation. The permittee is required to use the baghouse associated with the Acid Wash Process in order meet the particulate matter emission standard for the Acid Wash Process.

Compliance Demonstration Method:**a. Mass Emission Standard:**

Actual PM/SO₂ Emission Rate = [Emission factor observed during last stack test (in pounds PM/SO₂ per ton activated carbon)] ? [The hourly activated carbon throughput rate determined in 1.d., above]

b. Opacity Limit:

- i. During periods of normal operation of the baghouse, no compliance demonstration is necessary other than the weekly visual inspection required by paragraph 4.d. below.
- ii. If the Acid Wash Process is in operation during any period of malfunction of its associated baghouse, the permittee shall determine compliance through maintenance of the records required by paragraph 5.c. below.

c. Use of Baghouse:

The permittee shall record the occurrence, duration, cause, and any corrective action taken for each incident when the Acid Wash Process is in operation but the corresponding baghouse is not in operation.

3. Testing Requirements:

Pursuant to Regulations 401 KAR 59:005, Section 2(2) and 401 KAR 50:045, Section 1, performance testing using the Reference Methods specified in Regulation 401 KAR 50:015 shall be conducted as required by the Division.

4. Specific Monitoring Requirements:

The permittee shall monitor the following parameters:

- a. Total weight of activated carbon processed at the Acid Wash Process each month.
- b. Total hours of activated carbon processing during the month.
- c. The permittee shall install, calibrate, maintain, and operate according to manufacturer's specification a monitoring device for the continuous measurement of the pressure loss of the gas stream through the Acid Wash Process baghouse.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- 26 (M-04)
1. Acid Wash Process
 2. E-Line to Acid Wash Process Transfer Conveyor

4. Specific Monitoring Requirements: (continued)

- d. The permittee shall visually inspect the Acid Wash Process baghouse once per week during Acid Wash Process operations. The weekly inspection shall consist of a visual inspection of the physical condition of the external unit, combined with the corresponding visual emissions observation as outlined in paragraph 5.c. below.

5. Specific Recordkeeping Requirements:

The permittee shall maintain records of the following information:

- a. Total weight of activated carbon processed at the Acid Wash Process each month.
- b. Total hours of activated carbon processing during the month.
- c. During all periods of malfunction of the baghouse, if Acid Wash Process operations are in progress, a daily (calendar day) log of the following information shall be kept:
 - i. Whether any air emissions were visible from the baghouse stack;
 - ii. Whether the visible emissions were normal for the baghouse stack;
 - iii. The cause of any abnormal emissions and any corrective action taken.If visible emissions are observed, the permittee shall perform a Method 9 reading as outlined in Appendix M to 40 CFR Part 51 for the Acid Wash Process operations baghouse stack. The opacity observed shall be recorded in the daily log. The reading shall be performed by a representative of the permittee certified in Visible Emissions Evaluations. The permittee shall maintain a list of all individuals that are certified Visible Emissions Evaluators and the date of certification.
- d. For the Acid Wash Process, a record of the following information:
 - i. A record of the weekly reading of the pressure loss of the gas stream through the baghouse as indicated by the continuous monitor.
 - ii. Findings of the weekly visual inspection and any corrective actions taken as a result.
- e. All maintenance activities performed at the baghouse.

6. Specific Reporting Requirements:

The permittee shall submit a report of the following information to the Division for Air Quality's Ashland office in accordance with section F. 7. and F. 8:

- a. Any exceedance of the particulate matter and opacity emission limitations within thirty days of when the exceedance is determined.
- b. The occurrence, duration, cause, and any corrective action taken for each incident when Acid Wash Process operations are in progress but the associated baghouse is not in operation.

7. Specific Control Equipment Operating Conditions: None.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

27 (--) Lime Storage Silo - equipped with bin vent

APPLICABLE REGULATIONS:

401 KAR 59:010, *New Process Operations*, applies to the emissions of particulate matter from the Lime Storage Silo.

1. **Operating Limitations:** None.

2. **Emission Limitations:**

a. Emissions of particulate matter from the Lime Storage Silo shall not exceed the allowable rate limit as calculated by the following equation [401 KAR 59:010, Section 3 (2)]:

$$\text{For process rates up to 60,000 lb/hr: } E = 3.59P^{0.62}$$

Where E = rate of emissions in lb/hr, and

P = process weight rate in tons/hr of lime loaded into the Lime Storage Silo (i.e.: [Amount of lime loaded into the Lime Storage Silo per month] / [Total hours of lime loading during the month]).

b. Emissions of particulate matter from the Lime Storage Silo shall not exceed 1.86 tons during any consecutive 12 months [*Synthetic Minor Limit*, Permit O-94-020 (Revision 1)].

c. The opacity of visible emissions from the Lime Storage Silo shall not equal or exceed 20 percent [401 KAR 59:010, Section 3 (1)].

Compliance Demonstration Method:

a. **Mass Emission Standard:**

Actual PM Emission Rate = [Emission factor estimated using credible engineering judgement based on conservative assumptions (in pounds PM/per ton lime)] * [The process weight rate determined in 2.a., above]

b. **Opacity Limit:**

Compliance with the opacity limit will be determined by paragraphs 4.c. and 5.c. below.

3. **Testing Requirements:**

Pursuant to Regulations 401 KAR 59:005, Section 2(2) and 401 KAR 50:045, Section 1, performance testing using the Reference Methods specified in Regulation 401 KAR 50:015 shall be conducted as required by the Division.

4. **Specific Monitoring Requirements:**

The permittee shall monitor the following parameters:

- a. Amount of lime loaded into the Lime Storage Silo per month.
- b. Hours of loading at the Lime Storage Silo per month.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

27 (--) Lime Storage Silo - equipped with bin vent

4. Specific Monitoring Requirements: (continued)

- c. The permittee shall visually inspect the Lime Storage Silo once per week. The weekly inspection shall consist of:
 - i. A visual inspection of the physical condition of the Lime Storage Silo;
 - ii. Whether any air emissions were visible from the Lime Storage Silo;
 - iii. Whether the visible emissions were normal for the Lime Storage Silo;
 - iv. The cause of any abnormal emissions and any corrective action taken.If visible emissions are observed, the permittee shall perform a Method 9 reading as outlined in Appendix M to 40 CFR Part 51 for the Lime Storage Silo. The opacity observed shall be recorded in a log. The reading shall be performed by a representative of the permittee certified in Visible Emissions Evaluations. The permittee shall maintain a list of all individuals that are certified Visible Emissions Evaluators and the date of certification.

5. Specific Recordkeeping Requirements:

The permittee shall maintain records of the following information:

- a. Amount of lime loaded into the Lime Storage Silo per month.
- b. Hours of loading for the Lime Storage Silo per month.
- c. Findings of the weekly visual inspection and any corrective actions taken as a result.
- d. The emission factor and its supporting assumptions from Compliance Demonstration Method 2.a., above.

6. Specific Reporting Requirements:

The permittee shall submit a report to the Division for Air Quality's Ashland office in accordance with section F. 7. and F. 8 for any exceedance of the particulate matter and opacity emission limitations within thirty days of when the exceedance is determined.

7. Specific Control Equipment Operating Conditions: None.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**D. D-LINE:**

- 29 (D-04)
1. D-Line Coal and Pitch Preparation Area
 2. D-Line Preparation Area to Baker Elevator
 3. D-Line and E-Line Preparation Area Transfer Elevator
- Controls: Baghouse (PM/PM₁₀)

APPLICABLE REGULATIONS:

401 KAR 61:020, *Existing Process Operations*, applies to the emissions of particulate matter from the D-Line Coal and Pitch Preparation operations.

1. Operating Limitations:

The total weight of coal processed at the D-Line Coal and Pitch Preparation operations shall not exceed 9.0 tons per hour and 61,500 tons during any consecutive 12 months [Permit O-94-020 (Revision 1)].

Compliance Demonstration Method:

The permittee shall maintain monthly records of the following information:

- a. Total weight of coal processed at the D-Line Coal and Pitch Preparation Area each month.
- b. Total weight of coal processed at the D-Line Coal and Pitch Preparation Area during the previous 12 months.
- c. Total hours of coal processing during the month.
- d. Hourly coal throughput = $\frac{\text{[Total weight of coal processed at the D-Line Coal and Pitch Preparation Area each month]}}{\text{[Total hours of coal processing during the month]}}$

2. Emission Limitations:

- a. Emissions of particulate matter from the D-Line Coal and Pitch Preparation operations shall not exceed the allowable rate limit as calculated by the following equation [401 KAR 61:020, Section 3 (2)]:

$$\text{For process rates up to 60,000 lb/hr: } E = 4.10P^{0.67}$$

Where E = rate of emissions in lb/hr, and

P = process weight rate in tons/hr of coal processed at the D-Line Coal and Pitch Preparation operations (i.e.: The hourly coal throughput rate determined in 1.d., above).

- b. Emissions of particulate matter from the D-Line Coal and Pitch Preparation operations shall not exceed 61.06 tons during any consecutive 12 months [*Synthetic Minor Limit*, Permit O-94-020 (Revision 1)].
- c. The opacity of visible emissions from the D-Line Coal and Pitch Preparation operations shall not equal or exceed 40 percent [401 KAR 61:020, Section 3 (1)].
- d. The baghouse associated with the D-Line Coal and Pitch Preparation operations shall control emissions of particulate matter and be operated properly in accordance with manufacturer's specifications and/or standard operating procedures at all times the D-Line Coal and Pitch Preparation are in operation. The permittee is required to use the baghouse associated with the D-

Line Coal and Pitch Preparation operations in order meet the particulate matter emission standard for the D-Line Coal and Pitch Preparation operations.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

D. D-LINE:

- 29 (D-04)
 - 1. D-Line Coal and Pitch Preparation Area
 - 2. D-Line Preparation Area to Baker Elevator
 - 3. D-Line and E-Line Preparation Area Transfer Elevator

2. Emission Limitations: (continued)

Compliance Demonstration Method:

a. Mass Emission Standard:

Actual PM Emission Rate = [Emission factor observed during last stack test (in pounds PM/per ton coal)] ? [The hourly coal throughput rate determined in 1.d., above]

b. Opacity Limit:

- i. During periods of normal operation of the baghouse, no compliance demonstration is necessary other than the weekly visual inspection required by paragraph 4.d. below.
- ii. If the D-Line Coal and Pitch Preparation Area is in operation during any period of malfunction of its associated baghouse, the permittee shall determine compliance through maintenance of the records required by paragraph 5.c. below.

c. Use of Baghouse:

The permittee shall record the occurrence, duration, cause, and any corrective action taken for each incident when the D-Line Coal and Pitch Preparation Area is in operation but the corresponding baghouse is not in operation.

3. Testing Requirements:

Pursuant to Regulations 401 KAR 59:005, Section 2(2) and 401 KAR 50:045, Section 1, performance testing using the Reference Methods specified in Regulation 401 KAR 50:015 shall be conducted as required by the Division.

4. Specific Monitoring Requirements:

The permittee shall monitor the following parameters:

- a. Total weight of coal processed at the D-Line Coal and Pitch Preparation Area each month.
- b. Total hours of coal processing during the month.
- c. The permittee shall install, calibrate, maintain, and operate according to manufacturer's specification a monitoring device for the continuous measurement of the pressure loss of the gas stream through the D-Line Coal and Pitch Preparation Area baghouse.
- d. The permittee shall visually inspect the D-Line Coal and Pitch Preparation Area baghouse once per week during D-Line Coal and Pitch Preparation Area operations. The weekly inspection shall consist of a visual inspection of the physical condition of the external unit, combined with the corresponding visual emissions observation as outlined in paragraph 5.c. below.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

D. D-LINE:

- 29 (D-04)
1. D-Line Coal and Pitch Preparation Area
 2. D-Line Preparation Area to Baker Elevator
 3. D-Line and E-Line Preparation Area Transfer Elevator

5. Specific Recordkeeping Requirements:

The permittee shall maintain records of the following information:

- a. Total weight of coal processed at the D-Line Coal and Pitch Preparation Area each month.
- b. Total hours of coal processing during the month.
- c. During all periods of malfunction of the baghouse, if the D-Line Coal and Pitch Preparation Area operations are in progress, a daily (calendar day) log of the following information shall be kept:
 - i. Whether any air emissions were visible from the baghouse stack;
 - ii. Whether the visible emissions were normal for the baghouse stack;
 - iii. The cause of any abnormal emissions and any corrective action taken.If visible emissions are observed, the permittee shall perform a Method 9 reading as outlined in Appendix M to 40 CFR Part 51 for the D-Line Coal and Pitch Preparation Area operations baghouse stack. The opacity observed shall be recorded in the daily log. The reading shall be performed by a representative of the permittee certified in Visible Emissions Evaluations. The permittee shall maintain a list of all individuals that are certified Visible Emissions Evaluators and the date of certification.
- d. For the D-Line Coal and Pitch Preparation Area baghouse, a record of the following information:
 - i. A record of the weekly reading of the pressure loss of the gas stream through the baghouse as indicated by the continuous monitor.
 - ii. Findings of the weekly visual inspection and any corrective actions taken as a result.
- e. All maintenance activities performed at the baghouse.

6. Specific Reporting Requirements:

The permittee shall submit a report of the following information to the Division for Air Quality's Ashland office in accordance with section F. 7. and F. 8 of this permit:

- a. Any exceedance of the particulate matter and opacity emission limitations within thirty days of when the exceedance is determined.
- b. The occurrence, duration, cause, and any corrective action taken for each incident when the D-Line Coal and Pitch Preparation Area operations are in progress but the associated baghouse is not in operation.

7. Specific Control Equipment Operating Conditions: None.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**D. D-LINE:**

- 31 (D-05)
1. Two (2) D-Line Bakers
Controls: Afterburner (VOC), natural gas fired (40 mmBTU/hr)
Scrubber (PM/PM₁₀, SO₂)
 2. D-Line 1st Pass Baker to D-Line 2nd Pass Baker Drag Conveyor
 3. D-Line Baker to Activators Elevator
 4. Urea Injection Provision for Custom Product

APPLICABLE REGULATIONS:

- a. 401 KAR 61:020, *Existing Process Operations*, applies to the emissions of particulate matter from the D-Line Bakers.
- b. 401 KAR 50:012, *General Application*, applies to the emissions of volatile organic compounds from the D-Line Bakers.

1. Operating Limitations:

The total weight of coal processed through the D-Line Bakers shall not exceed 9.24 tons per hour and 68,328 tons during any consecutive 12 months [Hourly limit: 502(b)(10) Change, V-00-015 (Revision 2). Annual limit: Permit O-94-020 (Revision 1)].

Compliance Demonstration Method:

The permittee shall maintain monthly records of the following information:

- a. Total weight of coal processed through the D-Line Bakers each month.
- b. Total weight of coal processed through the D-Line Bakers during the previous 12 months.
- c. Total hours of operation of the D-Line Bakers during the month.
- d. Hourly coal throughput =
$$\frac{\text{[Total weight of coal processed through the D-Line Bakers each month]}}{\text{[Total hours of operation of the D-Line Bakers during the month]}}$$

2. Emission Limitations:

- a. Emissions of particulate matter from the D-Line Bakers shall not exceed the allowable rate limit as calculated by the following equation [401 KAR 61:020, Section 3 (2)]:
For process rates up to 60,000 lb/hr: $E = 4.10P^{0.67}$
Where E = rate of emissions in lb/hr, and
P = process weight rate in tons/hr of coal processed through the D-Line Bakers (i.e.: The hourly coal throughput rate determined in 1.d., above).
- b. The opacity of visible emissions from the D-Line Preparation Area to Baker Elevator shall not equal or exceed 40 percent [401 KAR 61:020, Section 3 (1)].
- c. Emissions of sulfur dioxide from the D-Line Bakers shall not exceed 15.0 lb/hr and 65.7 tons during any consecutive 12 months [*Synthetic Minor Limit*, Permit O-94-020 (Revision 1)].

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

D. D-LINE:

31 (D-05) Two (2) D-Line Bakers

2. Emission Limitations: (continued)

- d. The wet scrubber associated with the D-Line Bakers shall control emissions of particulate matter and sulfur dioxide and be operated properly in accordance with manufacturer's specifications and/or standard operating procedures at all times the D-Line Bakers are in operation. The permittee is required to use the wet scrubber associated with the D-Line Bakers in order meet the applicable emission standards for particulate matter and sulfur dioxide.
- e. The afterburner associated with the D-Line Bakers shall control emissions of volatile organic compounds (VOC) and be operated properly in accordance with manufacturer's specifications and/or standard operating procedures at all times the D-Line Bakers are in operation [401 KAR 50:012, Section 1 (1)].

Compliance Demonstration Method:

a. Mass Emission Standard:

Actual PM/SO₂ Emission Rate = [Emission factor observed during last stack test (in pounds PM/SO₂ per ton coal)] ? [The hourly coal throughput rate determined in 1.d., above]

b. Opacity Limit:

- i. During periods of normal operation of the wet scrubber, no compliance demonstration is necessary.
- ii. If the D-Line Bakers are in operation during any period of malfunction of the associated wet scrubber, the permittee shall determine compliance through maintenance of the records required by paragraph 5.d. below.

c. Use of Wet Scrubber:

The permittee shall record the occurrence, duration, cause, and any corrective action taken for each incident when the D-Line Bakers are in operation but the corresponding wet scrubber is not in operation.

d. Use of Afterburner:

The permittee shall record the occurrence, duration, cause, and any corrective action taken for each incident when the D-Line Bakers are in operation but the corresponding afterburner is not in operation.

3. Testing Requirements:

Pursuant to Regulations 401 KAR 59:005, Section 2(2) and 401 KAR 50:045, Section 1, performance testing using the Reference Methods specified in Regulation 401 KAR 50:015 shall be conducted as required by the Division.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

D. D-LINE:

31 (D-05) Two (2) D-Line Bakers

4. Specific Monitoring Requirements:

The permittee shall monitor the following parameters:

- a. Total weight of coal processed at the D-Line Bakers each month.
- b. Total hours of operation of the D-Line Bakers during the month.
- c. The permittee shall maintain, calibrate and operate according to manufacturer's specification, monitoring devices for the continuous measurement of:
 - i. The temperature in the combustion chamber of each afterburner.
 - ii. The scrubbing liquid pressure or flowrate to each wet scrubber.
- d. The permittee shall visually inspect the D-Line Baker scrubber once per week during operation of the D-Line Bakers. The weekly inspection shall consist of the visual emissions observation as outlined in paragraph 5.d. below.

5. Specific Recordkeeping Requirements:

The permittee shall maintain records of the following information:

- a. Total weight of coal processed at the D-Line Bakers each month.
- b. Total hours of operation of the D-Line Bakers during the month.
- c. Continuous records of the following information:
 - i. The temperature in the combustion chamber of each afterburner.
 - ii. The scrubbing liquid pressure or flowrate to each wet scrubber.
- d. During all periods of malfunction of the wet scrubber, if the D-Line Bakers are in operation, a daily (calendar day) log of the following information shall be kept:
 - i. Whether any air emissions were visible from the wet scrubber stack;
 - ii. Whether the visible emissions were normal for the wet scrubber stack;
 - iii. The cause of any abnormal emissions and any corrective action taken.If visible emissions are observed, the permittee shall perform a Method 9 reading as outlined in Appendix M to 40 CFR Part 51 for the D-Line Baker wet scrubber stack. The opacity observed shall be recorded in the daily log. The reading shall be performed by a representative of the permittee certified in Visible Emissions Evaluations. The permittee shall maintain a list of all individuals that are certified Visible Emissions Evaluators and the date of certification.
- e. All maintenance activities performed at the wet scrubber and afterburner.
- f. Quantity of urea utilized during the manufacture of custom product, and the manufacturing schedule for custom product runs.

6. Specific Reporting Requirements:

The permittee shall submit a report of the following information to the Division for Air Quality's Ashland office in accordance with section F. 7. and F. 8:

- a. Any exceedance of the particulate matter and opacity emission limitations within thirty days of when the exceedance is determined.
- b. The occurrence, duration, cause, and any corrective action taken for each incident when the D-Line

Bakers are in operation but the associated scrubber is not in operation.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

D. D-LINE:

31 (D-05) Two (2) D-Line Bakers

7. Specific Control Equipment Operating Conditions:

For each D-Line Baker afterburner:

The afterburner shall operate at a minimum temperature of 1400°F (3-hour average). An **excursion** from the operating range specified is any 3-hour period during which the average temperature in the afterburner was below the minimum specified.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

D. D-LINE:

32 (D-12, 13) D-Line Baker Heaters
Rating: 20.0 mmBTU/hr, natural gas fired
Date of construction:1990

APPLICABLE REGULATIONS:

- a. 401 KAR 59:015, *New indirect heat exchangers*, applies to the emissions of particulate matter and sulfur dioxide from the D-Line Baker Heater.
- b. 401 KAR 53:005, *General provisions*, was applied to this emission point in order to meet NAAQS.

1. **Operating Limitations:** None.

2. **Emission Limitations:**

- a. Emissions of particulate matter from the D-Line Baker Heater shall not exceed 0.35 lb/mmBTU [401 KAR 59:015, Section 4 (1)].
- b. Emissions of sulfur dioxide from the D-Line Baker Heater shall not exceed 0.0853 lb/mmBTU [401 KAR 53:005, and Permit V-00-015 (Revision 2)].
- c. The opacity of visible emissions from the D-Line Baker Heater shall not exceed 20 percent [401 KAR 59:015, Section 4 (2)] except as provided below:
 - i. Pursuant to 401 KAR 59:015, Section 4(2)(b), a maximum of 40% opacity is permissible for not more than 6 consecutive minutes in any 60 consecutive minute period during cleaning the fire box or blowing soot.
 - ii. Pursuant to 401 KAR 59:015, Section 4(2)(c), the opacity standard does not apply during building a new fire for the period required to bring the boiler up to operating conditions, provided the method used is that recommended by the manufacturer and the time does not exceed the manufacturer's recommendations.
 - iii. Pursuant to 401 KAR 50:055, Section 2(4), the opacity standard does not apply during periods of startup and shutdown.

Compliance Demonstration Method:

Mass Emission Limits:

For particulate matter and sulfur dioxide, no compliance demonstration is necessary for the applicable emission standards (lb/mmBTU) while natural gas is the only fuel used.

Opacity Limits:

No compliance demonstration is necessary for the applicable opacity standard while natural gas is the only fuel used.

3. **Testing Requirements:**

Pursuant to Regulations 401 KAR 59:005, Section 2(2) and 401 KAR 50:045, Section 1, performance testing using the Reference Methods specified in Regulation 401 KAR 50:015 shall be conducted as required by the Division.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

D. D-LINE:

32 (D-12, 13) D-Line Baker Heaters

4. Specific Monitoring Requirements:

The permittee shall monitor the fuel consumption of natural gas at the D-Line Baker Heater.

5. Specific Recordkeeping Requirements:

The permittee shall maintain records of the fuel consumption of natural gas at the D-Line Baker Heater.

6. Specific Reporting Requirements: None.

7. Specific Control Equipment Operating Conditions: Not applicable.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**D. D-LINE:**

- 34 (D-08, 09)
1. D-Line Activator Furnaces #7 & #8
Rating: 30.0 mmBTU/hr each (14 burners)
Fuel: Natural Gas
Controls: Afterburner (VOC), natural gas fired (40 mmBTU/hr)
Scrubber + Spray Tower (PM/PM₁₀, SO₂)
 2. Feed Bin to D-Line Activator Transfer Elevators (2)

APPLICABLE REGULATIONS:

- a. 401 KAR 61:020, *Existing Process Operations*, applies to the emissions of particulate matter from the D-Line Activators.
- b. 401 KAR 50:012, *General Application*, applies to the emissions of volatile organic compounds from the D-Line Activators.

1. Operating Limitations:

The total weight of carbon processed through *each* D-Line Activator shall not exceed 4.05 tons per hour and 35,478 tons during any consecutive 12 months [Permit O-94-020 (Revision 1)].

Compliance Demonstration Method:

The permittee shall maintain monthly records of the following information:

- a. Total weight of carbon processed through the D-Line Activators each month.
- b. Total weight of carbon processed through the D-Line Activators during the previous 12 months.
- c. Total hours of operation of the D-Line Activators during the month.
- d. Hourly carbon throughput = [Total weight of carbon processed through the D-Line Activators each month] ? [Total hours of operation of the D-Line Activators during the month]

2. Emission Limitations:

- a. Emissions of particulate matter from *each* individual D-Line Activator shall not exceed the allowable rate limit as calculated by the following equation [401 KAR 61:020, Section 3 (2)]:
For process rates up to 60,000 lb/hr: $E = 4.10P^{0.67}$
Where E = rate of emissions in lb/hr, and
P = process weight rate in tons/hr of carbon processed through *each* individual D-Line Activator (i.e.: The hourly carbon throughput rate determined in 1.d., above).
- b. Emissions of particulate matter from *each* D-Line Activator shall not exceed 32.85 tons during any consecutive 12 months [*Synthetic Minor Limit*, Permit O-94-020 (Revision 1)].
- c. The opacity of visible emissions from *each* D-Line Activator shall not equal or exceed 40 percent [401 KAR 61:020, Section 3 (1)].
- d. Emissions of sulfur dioxide from both D-Line Activators combined shall not exceed 15 lbs/hr and 65.7 tons during any consecutive 12 months [*Synthetic Minor Limit*, Permit O-94-020 (Revision 1)].

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

D. D-LINE:

- 34 (D-08, 09) 1. D-Line Activator Furnaces #7 & #8
2. Feed Bin to D-Line Activator Transfer Elevators (2)

2. Emission Limitations: (continued)

- e. The afterburner shall control emissions of volatile organic compounds and be operated properly in accordance with manufacturer's specifications and/or standard operating procedures at all times the D-Line Activators is in operation [401 KAR 50:012, Section 1 (1)]. The D-Line Activators is considered in operation any time carbon is being conveyed to the Activators.
- f. The wet scrubber associated with the D-Line Activators shall control emissions of particulate matter and sulfur dioxide and be operated properly in accordance with manufacturer's specifications and/or standard operating procedures at all times the D-Line Activators are in operation. The permittee is required to use the wet scrubber associated with the D-Line Activators in order meet the applicable emission standards for particulate matter and sulfur dioxide.

Compliance Demonstration Method:

a. Mass Emission Standard:

Actual PM/SO₂ Emission Rate = [Emission factor observed during last stack test (in pounds PM/SO₂ per ton carbon)] ? [The hourly carbon throughput rate determined in 1.d., above]

b. Opacity Limit:

- i. During periods of normal operation of the wet scrubber, no compliance demonstration is necessary other than the weekly visual inspection required by paragraph 4.d. below.
- ii. If the D-Line Activators are in operation during any period of malfunction of the associated wet scrubber, the permittee shall determine compliance through maintenance of the records required by paragraph 5.d. below.

c. Use of Afterburner:

The permittee shall record the occurrence, duration, cause, and any corrective action taken for each incident when the D-Line Activators is in operation but the corresponding afterburner is not.

d. Use of Scrubber:

The permittee shall record the occurrence, duration, cause, and any corrective action taken for each incident when the D-Line Activators are in operation but the corresponding scrubber is not.

3. Testing Requirements:

Pursuant to Regulations 401 KAR 59:005, Section 2(2) and 401 KAR 50:045, Section 1, performance testing using the Reference Methods specified in Regulation 401 KAR 50:015 shall be conducted as required by the Division.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

D. D-LINE:

- 34 (D-08, 09)
1. D-Line Activator Furnaces #7 & #8
 2. Feed Bin to D-Line Activator Transfer Elevators (2)

4. Specific Monitoring Requirements:

The permittee shall monitor the following parameters:

- a. Amount of carbon processed through the D-Line Activators per month.
- b. Hours of operation of the D-Line Activators per month.
- c. The permittee shall maintain, calibrate and operate according to manufacturer's specification, monitoring devices for the continuous measurement of:
 - i. The temperature in the combustion chamber of each afterburner.
 - ii. The pressure loss of waste gas stream through each wet scrubber.
 - iv. The scrubbing liquid pressure or flowrate to each wet scrubber.
- d. The permittee shall visually inspect the D-Line Activator scrubber once per week during operation of the D-Line Activators. The weekly inspection shall consist of the corresponding visual emissions observation as outlined in paragraph 5.d. below.

5. Specific Recordkeeping Requirements:

The permittee shall maintain records of the following information:

- a. Amount of carbon processed through the D-Line Activators per month.
- b. Hours of operation of the D-Line Activators per month.
- c. Continuous records of the following information:
 - i. The temperature in the combustion chamber of each afterburner.
 - ii. The pressure loss of waste gas stream through each wet scrubber.
 - iii. The scrubbing liquid pressure or flowrate to each wet scrubber.
- d. During all periods of malfunction of the wet scrubber, if the D-Line Activators are in operation, a daily (calendar day) log of the following information shall be kept:
 - i. Whether any air emissions were visible from the wet scrubber stack;
 - ii. Whether the visible emissions were normal for the wet scrubber stack;
 - iii. The cause of any abnormal emissions and any corrective action taken.

If visible emissions are observed, the permittee shall perform a Method 9 reading as outlined in Appendix M to 40 CFR Part 51 for the D-Line Activator wet scrubber stack. The opacity observed shall be recorded in the daily log. The reading shall be performed by a representative of the permittee certified in Visible Emissions Evaluations. The permittee shall maintain a list of all individuals that are certified Visible Emissions Evaluators and the date of certification.

- d. All maintenance activities performed at the wet scrubber and afterburner.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

D. D-LINE:

- 34 (D-08, 09)
1. D-Line Activator Furnaces #7 & #8
 2. Feed Bin to D-Line Activator Transfer Elevators (2)

6. Specific Reporting Requirements:

The permittee shall submit a report of the following information to the Division for Air Quality's Ashland office in accordance with section F. 7. and F. 8:

- a. Any exceedance of the particulate matter and opacity emission limitations within thirty days of when the exceedance is determined.
- b. The occurrence, duration, cause, and any corrective action taken for each incident when the D-Line Activators are in operation but the associated scrubber is not in operation.

7. Specific Control Equipment Operating Conditions:

For each D-Line Activators afterburner:

The afterburner shall operate at a minimum temperature of 1400°F (3-hour average). An **excursion** from the operating range specified is any 3-hour period during which the average temperature in the afterburner was below the minimum specified.

For each D-Line Activators wet scrubber:

- a. The wet scrubber shall be operated at a minimum total flow rate of 350 gpm of liquid to the scrubber (3-hour average). An **excursion** from the operating range specified is any 3-hour period during which the average flow rate of scrubbing liquid to the scrubber was below the minimum specified.
- b. The wet scrubber shall be operated at a minimum total differential pressure drop of 6.0 inches of water (3-hour average). An **excursion** from the operating range specified is any 3-hour period during which the average pressure drop across the wet scrubber was below the minimum specified.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

D. D-LINE:

35 (D-10) D-Line Packaging operations
 Controls: Baghouse (PM/PM₁₀)

APPLICABLE REGULATIONS:

401 KAR 61:020, *Existing Process Operations*, applies to the emissions of particulate matter from the D-Line Packaging operations.

1. Operating Limitations:

The total weight of activated carbon processed at the D-Line Packaging operations shall not exceed 5.0 tons per hour and 43,800 tons during any consecutive 12 months [Permit O-94-020 (Revision 1)].

Compliance Demonstration Method:

The permittee shall maintain monthly records of the following information:

- a. Total weight of activated carbon processed at the D-Line Packaging operations each month.
- b. Total weight of activated carbon processed at the D-Line Packaging operations during the previous 12 months.
- c. Total hours of activated carbon processing during the month.
- d. Hourly activated carbon throughput = [Total weight of activated carbon processed at the D-Line Packaging operations each month] / [Total hours of activated carbon processing during the month]

2. Emission Limitations:

a. Emissions of particulate matter from the D-Line Packaging operations shall not exceed the allowable rate limit as calculated by the following equation [401 KAR 61:020, Section 3 (2)]:

$$\text{For process rates up to 60,000 lb/hr: } E = 4.10P^{0.67}$$

Where E = rate of emissions in lb/hr, and

P = process weight rate in tons/hr of activated carbon processed at the D-Line Packaging operations (i.e.: The hourly activated carbon throughput rate determined in 1.d., above).

- b. The opacity of visible emissions from the D-Line Packaging operations shall not equal or exceed 40 percent [401 KAR 61:020, Section 3 (1)].
- c. The baghouse associated with the D-Line Packaging operations shall control emissions of particulate matter and be operated properly in accordance with manufacturer's specifications and/or standard operating procedures at all times the D-Line Packaging is in operation. The permittee is required to use the baghouse associated with the D-Line Packaging operations in order to meet the particulate matter emission standard for the D-Line Packaging operations.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

D. D-LINE:

35 (D-10) D-Line Packaging operations

2. Emission Limitations: (continued)

Compliance Demonstration Method:

a. Mass Emission Standard:

Actual PM Emission Rate = [Emission factor* observed during last stack test (in pounds PM/per ton activated carbon)] ? [The hourly activated carbon throughput rate determined in 1.d., above]

*Alternate emission factor may be established based on demonstration of similarity to other tested sources and/or estimated using credible engineering judgement based on conservative assumptions.

b. Opacity Limit:

- i. During periods of normal operation of the baghouse, no compliance demonstration is necessary other than the weekly visual inspection required by paragraph 4.d. below.
- ii. If the D-Line Packaging is in operation during any period of malfunction of its associated baghouse, the permittee shall determine compliance through maintenance of the records required by paragraph 5.c. below.

c. Use of Baghouse:

The permittee shall record the occurrence, duration, cause, and any corrective action taken for each incident when the D-Line Packaging is in operation but the corresponding baghouse is not in operation.

3. Testing Requirements:

Pursuant to Regulations 401 KAR 59:005, Section 2(2) and 401 KAR 50:045, Section 1, performance testing using the Reference Methods specified in Regulation 401 KAR 50:015 shall be conducted as required by the Division.

4. Specific Monitoring Requirements:

The permittee shall monitor the following parameters:

- a. Total weight of activated carbon processed at the D-Line Packaging operations each month.
- b. Total hours of activated carbon processing during the month.
- c. The permittee shall install, calibrate, maintain, and operate according to manufacturer's specification a monitoring device for the continuous measurement of the pressure loss of the gas stream through the D-Line Packaging baghouse.
- d. The permittee shall visually inspect the D-Line Packaging baghouse once per week during D-Line Packaging operations. The weekly inspection shall consist of a visual inspection of the physical condition of the external unit, combined with the corresponding visual emissions observation as outlined in paragraph 5.c. below.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

D. D-LINE:

35 (D-10)

D-Line Packaging operations

5. Specific Recordkeeping Requirements:

The permittee shall maintain records of the following information:

- a. Total weight of activated carbon processed at the D-Line Packaging operations each month.
- b. Total hours of activated carbon processing during the month.
- c. During all periods of malfunction of the baghouse, if the D-Line Packaging operations are in progress, a daily (calendar day) log of the following information shall be kept:
 - i. Whether any air emissions were visible from the baghouse stack;
 - ii. Whether the visible emissions were normal for the baghouse stack;
 - iii. The cause of any abnormal emissions and any corrective action taken.

If visible emissions are observed, the permittee shall perform a Method 9 reading as outlined in Appendix M to 40 CFR Part 51 for the D-Line Packaging operations baghouse stack. The opacity observed shall be recorded in the daily log. The reading shall be performed by a representative of the permittee certified in Visible Emissions Evaluations. The permittee shall maintain a list of all individuals that are certified Visible Emissions Evaluators and the date of certification.

- d. For the D-Line Packaging operations, a record of the following information:
 - i. A record of the weekly reading of the pressure loss of the gas stream through the baghouse as indicated by the continuous monitor.
 - ii. Findings of the weekly visual inspection and any corrective actions taken as a result.
- e. All maintenance activities performed at the baghouse.
- f. If an emission factor from other than testing is used, the emission factor and its supporting assumptions from Compliance Demonstration Method 2.a., above.

6. Specific Reporting Requirements:

The permittee shall submit a report of the following information to the Division for Air Quality's Ashland office in accordance with section F. 7. and F. 8:

- a. Any exceedance of the particulate matter and opacity emission limitations within thirty days of when the exceedance is determined.
- b. The occurrence, duration, cause, and any corrective action taken for each incident when the D-Line Packaging operations are in progress but the associated baghouse is not in operation.

7. Specific Control Equipment Operating Conditions: None.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**E. E-LINE:**

- 37 (E-01) 1. E-Line Coal and Pitch Preparation Area
 2. E-Line Preparation Area to Baker Elevator
 Controls: Baghouse (PM/PM₁₀)

APPLICABLE REGULATIONS:

401 KAR 61:020, *Existing Process Operations*, applies to the emissions of particulate matter from the E-Line Coal and Pitch Preparation operations.

1. Operating Limitations:

The total weight of coal processed at the E-Line Coal and Pitch Preparation operations shall not exceed 9.0 tons per hour and 61,500 tons during any consecutive 12 months [Permit O-94-020 (Revision 1)].

Compliance Demonstration Method:

The permittee shall maintain monthly records of the following information:

- a. Total weight of coal processed at the E-Line Coal and Pitch Preparation Area each month.
- b. Total weight of coal processed at the E-Line Coal and Pitch Preparation Area during the previous 12 months.
- c. Total hours of coal processing during the month.
- d. Hourly coal throughput = $\frac{\text{[Total weight of coal processed at the E-Line Coal and Pitch Preparation Area each month]}}{\text{[Total hours of coal processing during the month]}}$

2. Emission Limitations:

- a. Emissions of particulate matter from the E-Line Coal and Pitch Preparation operations shall not exceed the allowable rate limit as calculated by the following equation [401 KAR 61:020, Section 3 (2)]:

$$\text{For process rates up to 60,000 lb/hr: } E = 4.10P^{0.67}$$

Where E = rate of emissions in lb/hr, and

P = process weight rate in tons/hr of coal processed at the E-Line Coal and Pitch Preparation operations (i.e.: The hourly coal throughput rate determined in 1.d., above).

- b. Emissions of particulate matter from the E-Line Coal and Pitch Preparation operations shall not exceed 61.06 tons during any consecutive 12 months [*Synthetic Minor Limit*, Permit O-94-020 (Revision 1)].
- c. The opacity of visible emissions from the E-Line Coal and Pitch Preparation operations shall not equal or exceed 40 percent [401 KAR 61:020, Section 3 (1)].
- d. The baghouse associated with the E-Line Coal and Pitch Preparation operations shall control emissions of particulate matter and be operated properly in accordance with manufacturer's specifications and/or standard operating procedures at all times the E-Line Coal and Pitch Preparation are in operation. The permittee is required to use the baghouse associated with the E-Line Coal and Pitch Preparation operations in order meet the particulate matter emission standard for the E-Line Coal and Pitch Preparation operations.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

E. E-LINE:

- 37 (E-01)
1. E-Line Coal and Pitch Preparation Area
 2. E-Line Preparation Area to Baker Elevator

2. Emission Limitations: (continued)

Compliance Demonstration Method:

a. Mass Emission Standard:

Actual PM Emission Rate = [Emission factor observed during last stack test (in pounds PM/per ton coal)] ? [The hourly coal throughput rate determined in 1.d., above]

b. Opacity Limit:

- i. During periods of normal operation of the baghouse, no compliance demonstration is necessary other than the weekly visual inspection required by paragraph 4.d. below.
- ii. If the E-Line Coal and Pitch Preparation Area is in operation during any period of malfunction of its associated baghouse, the permittee shall determine compliance through maintenance of the records required by paragraph 5.c. below.

c. Use of Baghouse:

The permittee shall record the occurrence, duration, cause, and any corrective action taken for each incident when the E-Line Coal and Pitch Preparation Area is in operation but the corresponding baghouse is not in operation.

3. Testing Requirements:

Pursuant to Regulations 401 KAR 59:005, Section 2(2) and 401 KAR 50:045, Section 1, performance testing using the Reference Methods specified in Regulation 401 KAR 50:015 shall be conducted as required by the Division.

4. Specific Monitoring Requirements:

The permittee shall monitor the following parameters:

- a. Total weight of coal processed at the E-Line Coal and Pitch Preparation Area each month.
- b. Total hours of coal processing during the month.
- c. The permittee shall install, calibrate, maintain, and operate according to manufacturer's specification a monitoring device for the continuous measurement of the pressure loss of the gas stream through the E-Line Coal and Pitch Preparation Area baghouse.
- d. The permittee shall visually inspect the E-Line Coal and Pitch Preparation Area baghouse once per week during E-Line Coal and Pitch Preparation Area operations. The weekly inspection shall consist of a visual inspection of the physical condition of the external unit, combined with the corresponding visual emissions observation as outlined in paragraph 5.c. below.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

E. E-LINE:

- 37 (E-01) 1. E-Line Coal and Pitch Preparation Area
 2. E-Line Preparation Area to Baker Elevator

5. Specific Recordkeeping Requirements:

The permittee shall maintain records of the following information:

- a. Total weight of coal processed at the E-Line Coal and Pitch Preparation Area each month.
- b. Total hours of coal processing during the month.
- c. During all periods of malfunction of the baghouse, if the E-Line Coal and Pitch Preparation Area operations are in progress, a daily (calendar day) log of the following information shall be kept:
 - i. Whether any air emissions were visible from the baghouse stack;
 - ii. Whether the visible emissions were normal for the baghouse stack;
 - iii. The cause of any abnormal emissions and any corrective action taken.

If visible emissions are observed, the permittee shall perform a Method 9 reading as outlined in Appendix M to 40 CFR Part 51 for E-Line Coal and Pitch Preparation Area operations baghouse stack. The opacity observed shall be recorded in the daily log. The reading shall be performed by a representative of the permittee certified in Visible Emissions Evaluations. The permittee shall maintain a list of all individuals that are certified Visible Emissions Evaluators and the date of certification.

- d. For the E-Line Coal and Pitch Preparation Area baghouse, a record of the following information:
 - i. A record of the weekly reading of the pressure loss of the gas stream through the baghouse as indicated by the continuous monitor.
 - ii. Findings of the weekly visual inspection and any corrective actions taken as a result.
- e. All maintenance activities performed at the baghouse.

6. Specific Reporting Requirements:

The permittee shall submit a report of the following information to the Division for Air Quality's Ashland office in accordance with section F. 7. and F. 8:

- a. Any exceedance of the particulate matter and opacity emission limitations within thirty days of when the exceedance is determined.
- b. The occurrence, duration, cause, and any corrective action taken for each incident when the E-Line Coal and Pitch Preparation Area operations are in progress but the associated baghouse is not in operation.

7. Specific Control Equipment Operating Conditions: None.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**E. E-LINE:**

- 39 (E-02)
1. Two (2) E-Line Bakers
Controls: Afterburner (VOC), natural gas fired (40 mmBTU/hr)
Scrubber (PM/PM₁₀, SO₂)
 2. E-Line 1st Pass Baker to E-Line 2nd Pass Baker Transfer Elevator
 3. E-Line Baker to Activators Elevators
 4. Urea Injection Provision for Custom Product

APPLICABLE REGULATIONS:

- a. 401 KAR 59:010, *New Process Operations*, applies to the emissions of particulate matter from the E-Line Bakers.
- b. 401 KAR 50:012, *General Application*, applies to the emissions of volatile organic compounds from the E-Line Bakers.
- c. 401 KAR 53:005, *General provisions* was, applied to this emission point in order to meet NAAQS for sulfur dioxide.

1. Operating Limitations:

The total weight of coal processed through the E-Line Bakers shall not exceed 7.8 tons per hour and 68,328 tons during any consecutive 12 months [Permit O-94-020 (Revision 1)].

Compliance Demonstration Method:

The permittee shall maintain monthly records of the following information:

- a. Total weight of coal processed through the E-Line Bakers each month.
- b. Total weight of coal processed through the E-Line Bakers during the previous 12 months.
- c. Total hours of operation of the E-Line Bakers during the month.
- d. Hourly coal throughput =
$$\frac{[\text{Total weight of coal processed through the E-Line Bakers each month}]}{[\text{Total hours of operation of the E-Line Bakers during the month}]}$$

2. Emission Limitations:

- a. Emissions of particulate matter from the E-Line Bakers shall not exceed the allowable rate limit as calculated by the following equation [401 KAR 59:010, Section 3 (2)]:
For process rates up to 60,000 lb/hr: $E = 3.59P^{0.62}$
Where E = rate of emissions in lb/hr, and
P = process weight rate in tons/hr of coal processed through the E-Line Bakers (i.e.: The hourly coal throughput rate determined in 1.d., above).
- b. The opacity of visible emissions from the E-Line Preparation Area to Baker Elevator shall not equal or exceed 20 percent [401 KAR 59:010, Section 3 (1)].
- c. Emissions of sulfur dioxide from the E-Line Bakers shall not exceed 15.0 lb/hr and 65.7 tons during any consecutive 12 months [401 KAR 53:005, and Permit V-00-015 (Revision 2)].

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

E. E-LINE:

- 39 (E-02)
1. Two (2) E-Line Bakers
 2. E-Line 1st Pass Baker to E-Line 2nd Pass Baker Transfer Elevator
 3. E-Line Baker to Activators Elevators
 4. Urea Injection Provision for Custom Product

2. Emission Limitations: (continued)

- d. The wet scrubber associated with the E-Line Bakers shall control emissions of particulate matter and sulfur dioxide and be operated properly in accordance with manufacturer's specifications and/or standard operating procedures at all times the E-Line Bakers are in operation. The permittee is required to use the wet scrubber associated with the E-Line Bakers in order meet the applicable emission standards for particulate matter and sulfur dioxide.
- e. The afterburner associated with the E-Line Bakers shall control emissions of volatile organic compounds (VOC) and be operated properly in accordance with manufacturer's specifications and/or standard operating procedures at all times the E-Line Bakers are in operation [401 KAR 50:012, Section 1 (1)].

Compliance Demonstration Method:

a. Mass Emission Standard:

Actual PM/SO₂ Emission Rate = [Emission factor observed during last stack test (in pounds PM/SO₂ per ton coal)] ? [The hourly coal throughput rate determined in 1.d., above]

b. Opacity Limit:

- i. During periods of normal operation of the wet scrubber, no compliance demonstration is necessary.
- ii. If the E-Line Bakers are in operation during any period of malfunction of the associated wet scrubber, the permittee shall determine compliance through maintenance of the records required by paragraph 5.d. below.

c. Use of Wet Scrubber:

The permittee shall record the occurrence, duration, cause, and any corrective action taken for each incident when the E-Line Bakers are in operation but the corresponding wet scrubber is not in operation.

d. Use of Afterburner:

The permittee shall record the occurrence, duration, cause, and any corrective action taken for each incident when the E-Line Bakers are in operation but the corresponding afterburner are not in operation.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

E. E-LINE:

- 39 (E-02)
1. Two (2) E-Line Bakers
 2. E-Line 1st Pass Baker to E-Line 2nd Pass Baker Transfer Elevator
 3. E-Line Baker to Activators Elevators
 4. Urea Injection Provision for Custom Product

3. Testing Requirements:

Pursuant to Regulations 401 KAR 59:005, Section 2(2) and 401 KAR 50:045, Section 1, performance testing using the Reference Methods specified in Regulation 401 KAR 50:015 shall be conducted as required by the Division.

4. Specific Monitoring Requirements:

The permittee shall monitor the following parameters:

- a. Total weight of coal processed at the E-Line Bakers each month.
- b. Total hours of operation of the E-Line Bakers during the month.
- c. The permittee shall maintain, calibrate and operate according to manufacturer's specification, monitoring devices for the continuous measurement of:
 - i. The temperature in the combustion chamber of each afterburner.
 - ii. The scrubbing liquid pressure or flowrate to each wet scrubber.
- d. The permittee shall visually inspect the E-Line Baker scrubber once per week during operation of the E-Line Bakers. The weekly inspection shall consist of the corresponding visual emissions observation as outlined in paragraph 5.d. below.

5. Specific Recordkeeping Requirements:

The permittee shall maintain records of the following information:

- a. Total weight of coal processed at the E-Line Bakers each month.
- b. Total hours of operation of the E-Line Bakers during the month.
- c. Continuous records of the following information:
 - i. The temperature in the combustion chamber of each afterburner.
 - ii. The scrubbing liquid pressure or flowrate to each wet scrubber.
- d. During all periods of malfunction of the wet scrubber, if the D-Line Bakers are in operation, a daily (calendar day) log of the following information shall be kept:
 - i. Whether any air emissions were visible from the wet scrubber stack;
 - ii. Whether the visible emissions were normal for the wet scrubber stack;
 - iii. The cause of any abnormal emissions and any corrective action taken.

If visible emissions are observed, the permittee shall perform a Method 9 reading as outlined in Appendix M to 40 CFR Part 51 for the D-Line Baker wet scrubber stack. The opacity observed shall be recorded in the daily log. The reading shall be performed by a representative of the permittee certified in Visible Emissions Evaluations. The permittee shall maintain a list of all individuals that are certified Visible Emissions Evaluators and the date of certification.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

E. E-LINE:

- 39 (E-02)
1. Two (2) E-Line Bakers
 2. E-Line 1st Pass Baker to E-Line 2nd Pass Baker Transfer Elevator
 3. E-Line Baker to Activators Elevators
 4. Urea Injection Provision for Custom Product

5. Specific Recordkeeping Requirements: (continued)

- e. All maintenance activities performed at the wet scrubber and afterburner.
- f. Quantity of urea utilized during the manufacture of custom product, and the manufacturing schedule of custom product runs.

6. Specific Reporting Requirements:

The permittee shall submit a report of the following information to the Division for Air Quality's Ashland office in accordance with section F. 7. and F. 8:

- a. Any exceedance of the particulate matter and opacity emission limitations within thirty days of when the exceedance is determined.
- b. The occurrence, duration, cause, and any corrective action taken for each incident when the E-Line Bakers are in operation but the associated scrubber is not in operation.

7. Specific Control Equipment Operating Conditions:

For each E-Line Baker afterburner:

The afterburner shall operate at a minimum temperature of 1400°F (3-hour average). An **excursion** from the operating range specified is any 3-hour period during which the average temperature in the afterburner was below the minimum specified.

For each wet scrubber:

The wet scrubber shall be operated at a minimum total flow rate of 100 gpm of liquid to the fan (3-hour average). An **excursion** from the operating range specified is any 3-hour period during which the average flow rate of scrubbing liquid to the scrubber was below the minimum specified.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

E. E-LINE:

40 (E-09, 10) E-Line Baker Heaters
Rating: 16.7 mmBTU/hr
Fuels: Natural gas, fuel oil #2
Date of construction: 1990

APPLICABLE REGULATIONS:

- a. 401 KAR 59:015, *New indirect heat exchangers*, applies to the emissions of particulate matter and sulfur dioxide from the E-Line Baker Heater.
- b. 401 KAR 53:005, *General provisions* was, applied to this emission point in order to meet NAAQS for sulfur dioxide.

1. Operating Limitations: The heat-input rating will be accomplished through the removal of five (5) #2 fuel oil fired burners. This results in the permitted operation of twenty-one (21) oil fired burners and four (4) natural gas fired burners for the E-Line Baker Heaters [Revision Application Log # 55679, & 401 KAR 53:005].

2. Emission Limitations:

- a. Emissions of particulate matter from the E-Line Baker Heater shall not exceed 0.35 lb/mmBTU [401 KAR 59:015, Section 4 (1)].
- b. Emissions of sulfur dioxide from the E-Line Baker Heater shall not exceed 0.477 lb/mmBTU [401 KAR 53:005, and Permit V-00-015 (Revision 2)].
- c. The opacity of visible emissions from the E-Line Baker Heater shall not exceed 20 percent [401 KAR 59:015, Section 4 (2)] except as provided below:
 - i. Pursuant to 401 KAR 59:015, Section 4(2)(b), a maximum of 40% opacity is permissible for not more than 6 consecutive minutes in any 60 consecutive minute period during cleaning the fire box or blowing soot.
 - ii. Pursuant to 401 KAR 59:015, Section 4(2)(c), the opacity standard does not apply during building a new fire for the period required to bring the boiler up to operating conditions, provided the method used is that recommended by the manufacturer and the time does not exceed the manufacturer's recommendations.
 - iii. Pursuant to 401 KAR 50:055, Section 2(4), the opacity standard does not apply during periods of startup and shutdown.

Compliance Demonstration Method:

Mass Emission Limits:

For particulate matter and sulfur dioxide, no compliance demonstration is necessary for the applicable emission standards (lb/mmBTU) while natural gas and fuel oil #2 are the only fuels used.

Opacity Limits:

No compliance demonstration is necessary for the applicable opacity standard while natural gas and fuel oil #2 are the only fuels used.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

E. E-LINE:

40 (E-09, 10) E-Line Baker Heaters

3. Testing Requirements:

Pursuant to Regulations 401 KAR 59:005, Section 2(2) and 401 KAR 50:045, Section 1, performance testing using the Reference Methods specified in Regulation 401 KAR 50:015 shall be conducted as required by the Division.

4. Specific Monitoring Requirements:

The permittee shall monitor the fuel consumption at the E-Line Baker Heaters.

5. Specific Recordkeeping Requirements:

The permittee shall maintain records of the fuel consumption of natural gas at the E-Line Baker Heaters.

6. Specific Reporting Requirements: None.

7. Specific Control Equipment Operating Conditions: Not applicable.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

E. E-LINE:

- 42 (E-05, 06)
1. Two (2) E-Line Activator Furnaces #9 & #10
Rating: 38.0 mmBTU/hr each (18 burners)
Fuel: Natural Gas
Controls: Afterburner (VOC), natural gas fired (40 mmBTU/hr)
Scrubber + Spray Tower (PM/PM₁₀, SO₂)
 2. Feed Bin to E-Line Activator Transfer Elevators (2)

APPLICABLE REGULATIONS:

- a. 401 KAR 59:010, *New Process Operations*, applies to the emissions of particulate matter from the E-Line Activators.
- b. 401 KAR 50:012, *General Application*, applies to the emissions of volatile organic compounds from the E-Line Activators.
- c. 401 KAR 53:005, *General provisions*, was applied to this emission point in order to meet NAAQS.

1. Operating Limitations:

The total weight of carbon processed through *each* E-Line Activator shall not exceed 4.05 tons per hour and 35,478 tons during any consecutive 12 months [Permit O-94-020 (Revision 1)].

Compliance Demonstration Method:

The permittee shall maintain monthly records of the following information:

- a. Total weight of carbon processed through the E-Line Activators each month.
- b. Total weight of carbon processed through the E-Line Activators during the previous 12 months.
- c. Total hours of operation of the E-Line Activators during the month.
- d. Hourly carbon throughput = [Total weight of carbon processed through the E-Line Activators each month] ? [Total hours of operation of the E-Line Activators during the month]

2. Emission Limitations:

- a. Emissions of particulate matter from *each* E-Line Activator shall not exceed the allowable rate limit as calculated by the following equation [401 KAR 59:010, Section 3 (2)]:
For process rates up to 60,000 lb/hr: $E = 3.59P^{0.62}$
Where E = rate of emissions in lb/hr, and
P = process weight rate in tons/hr of carbon processed through *each* E-Line Activator (i.e.: The hourly carbon throughput rate determined in 1.d., above).
- b. Emissions of particulate matter from *each* E-Line Activator shall not exceed 30.44 tons during any consecutive 12 months [*Synthetic Minor Limit*, Permit O-94-020 (Revision 1)].
- c. Emissions of SO₂ from *each* E-Line Activator shall not exceed 7.5 lb/hr and 32.85 tons during any consecutive 12 months [401 KAR 53:005, and Permit V-00-015 (Revision 2)].
- d. The opacity of visible emissions from *each* E-Line Activator shall not equal or exceed 20 percent [401 KAR 59:010, Section 3 (1)].

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

E. E-LINE:

42 (E-05, 06) Two (2) E-Line Activator Furnaces

2. Emission Limitations: (continued)

- e. The afterburner shall control emissions of volatile organic compounds and be operated properly in accordance with manufacturer's specifications and/or standard operating procedures at all times the E-Line Activators is in operation [401 KAR 50:012, Section 1 (1)]. The E-Line Activators is considered in operation any time carbon is being conveyed to the Activators.
- f. The wet scrubber associated with the E-Line Activators shall control emissions of particulate matter and sulfur dioxide and be operated properly in accordance with manufacturer's specifications and/or standard operating procedures at all times the E-Line Activators are in operation. The permittee is required to use the wet scrubber associated with the E-Line Activators in order meet the applicable emission standards for particulate matter and sulfur dioxide.

Compliance Demonstration Method:

a. Mass Emission Standard:

Actual PM / SO₂ Emission Rate = [Emission factor observed during last stack test (in pounds PM / SO₂ per ton carbon)] * [The hourly carbon throughput rate determined in 1.d., above]

b. Opacity Limit:

- i. During periods of normal operation of the wet scrubber, no compliance demonstration is necessary other than the weekly visual inspection required by paragraph 4.d. below.
- ii. If the E-Line Activators are in operation during any period of malfunction of the associated wet scrubber, the permittee shall determine compliance through maintenance of the records required by paragraph 5.d. below.

c. Use of Afterburner:

The permittee shall record the occurrence, duration, cause, and any corrective action taken for each incident when the E-Line Activators are in operation but the corresponding afterburner is not.

d. Use of Scrubber:

The permittee shall record the occurrence, duration, cause, and any corrective action taken for each incident when the E-Line Activators is in operation but the corresponding scrubber is not.

3. Testing Requirements:

Pursuant to Regulations 401 KAR 59:005, Section 2(2) and 401 KAR 50:045, Section 1, performance testing using the Reference Methods specified in Regulation 401 KAR 50:015 shall be conducted as required by the Division.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

E. E-LINE:

42 (E-05, 06)

Two (2) E-Line Activator Furnaces

4. Specific Monitoring Requirements:

The permittee shall monitor the following parameters:

- a. Amount of carbon processed through the E-Line Activators per month.
- b. Hours of operation of the E-Line Activators per month.
- c. The permittee shall maintain, calibrate and operate according to manufacturer's specification, monitoring devices for the continuous measurement of:
 - i. The temperature in the combustion chamber of each afterburner.
 - ii. The pressure loss of waste gas stream through each wet scrubber.
 - iv. The scrubbing liquid pressure or flowrate to each wet scrubber.
- d. The permittee shall visually inspect the E-Line Activator scrubber once per week during operation of the E-Line Activators. The weekly inspection shall consist of the corresponding visual emissions observation as outlined in paragraph 5.d. below.

5. Specific Recordkeeping Requirements:

The permittee shall maintain records of the following information:

- a. Amount of carbon processed through the E-Line Activators per month.
- b. Hours of operation of the E-Line Activators per month.
- c. Continuous records of the following information:
 - i. The temperature in the combustion chamber of each afterburner.
 - ii. The pressure loss of waste gas stream through each wet scrubber.
 - iii. The scrubbing liquid pressure or flowrate to each wet scrubber.
- d. During all periods of malfunction of the wet scrubber, if the E-Line Activators are in operation, a daily (calendar day) log of the following information shall be kept:
 - i. Whether any air emissions were visible from the wet scrubber stack;
 - ii. Whether the visible emissions were normal for the wet scrubber stack;
 - iii. The cause of any abnormal emissions and any corrective action taken.If visible emissions are observed, the permittee shall perform a Method 9 reading as outlined in Appendix M to 40 CFR Part 51 for the E-Line Activator wet scrubber stack. The opacity observed shall be recorded in the daily log. The reading shall be performed by a representative of the permittee certified in Visible Emissions Evaluations. The permittee shall maintain a list of all individuals that are certified Visible Emissions Evaluators and the date of certification.
- d. All maintenance activities performed at the wet scrubber and afterburner.

6. Specific Reporting Requirements:

The permittee shall submit a report of the following information to the Division for Air Quality's Ashland office in accordance with section F. 7. and F. 8:

- a. Any exceedance of the particulate matter and opacity emission limitations within thirty days of when the exceedance is determined.
- b. The occurrence, duration, cause, and any corrective action taken for each incident when the E-Line Activators are in operation but the associated scrubber is not in operation.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

E. E-LINE:

42 (E-05, 06) Two (2) E-Line Activator Furnaces

7. Specific Control Equipment Operating Conditions:

For each E-Line Activators afterburner:

The afterburner shall operate at a minimum temperature of 1400°F (3-hour average). An **excursion** from the operating range specified is any 3-hour period during which the average temperature in the afterburner was below the minimum specified.

For each E-Line Activator wet scrubber:

- a. The wet scrubber shall be operated at a minimum total flow rate of 350 gpm of liquid to the scrubber (3-hour average). An **excursion** from the operating range specified is any 3-hour period during which the average flow rate of scrubbing liquid to the scrubber was below the minimum specified.
- b. The wet scrubber shall be operated at a minimum total differential pressure drop of 6.0 inches of water (3-hour average). An **excursion** from the operating range specified is any 3-hour period during which the average pressure drop across the wet scrubber was below the minimum specified.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

E. E-LINE:

- 43 (E-07)
1. E-Line Packaging operations
 2. D & E Activator to Packaging Conveyor
- Controls: Baghouse (PM/PM₁₀)

APPLICABLE REGULATIONS:

401 KAR 61:020, *Existing Process Operations*, applies to the emissions of particulate matter from the E-Line Packaging operations.

1. Operating Limitations:

The total weight of activated carbon processed at the E-Line Packaging operations shall not exceed 5.0 tons per hour and 41,160 tons during any consecutive 12 months [Permit O-94-020 (Revision 1)].

Compliance Demonstration Method:

The permittee shall maintain monthly records of the following information:

- a. Total weight of activated carbon processed at the E-Line Packaging operations each month.
- b. Total weight of activated carbon processed at the E-Line Packaging operations during the previous 12 months.
- c. Total hours of activated carbon processing during the month.
- d. Hourly activated carbon throughput = $\frac{\text{[Total weight of activated carbon processed at the E-Line Packaging operations each month]}}{\text{[Total hours of activated carbon processing during the month]}}$

2. Emission Limitations:

- a. Emissions of particulate matter from the E-Line Packaging operations shall not exceed the allowable rate limit as calculated by the following equation [401 KAR 61:020, Section 3 (2)]:
 For process rates up to 60,000 lb/hr: $E = 4.10P^{0.67}$
 Where E = rate of emissions in lb/hr, and
 P = process weight rate in tons/hr of activated carbon processed at the E-Line Packaging operations (i.e.: The hourly activated carbon throughput rate determined in 1.d., above).
- b. Emissions of particulate matter from the E-Line Packaging operations shall not exceed 49.39 tons during any consecutive 12 months [*Synthetic Minor Limit*, Permit O-94-020 (Revision 1)].
- c. The opacity of visible emissions from the E-Line Packaging operations shall not equal or exceed 40 percent [401 KAR 61:020, Section 3 (1)].
- d. The baghouse associated with the E-Line Packaging operations shall control emissions of particulate matter and be operated properly in accordance with manufacturer's specifications and/or standard operating procedures at all times the E-Line Packaging is in operation. The permittee is required to use the baghouse associated with the E-Line Packaging operations in order meet the particulate matter emission standard for the E-Line Packaging operations.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

E. E-LINE:

- 43 (E-07) 1. E-Line Packaging operations
 2. D & E Activator to Packaging Conveyor

2. Emission Limitations: (continued)

Compliance Demonstration Method:

a. Mass Emission Standard:

Actual PM Emission Rate = [Emission factor* observed during last stack test (in pounds PM/per ton activated carbon)] ? [The hourly activated carbon throughput rate determined in 1.d., above]

*Alternate emission factor may be established based on demonstration of similarity to other tested sources and/or estimated using credible engineering judgement based on conservative assumptions.

b. Opacity Limit:

- i. During periods of normal operation of the baghouse, no compliance demonstration is necessary other than the weekly visual inspection required by paragraph 4.d. below.
- ii. If the E-Line Packaging is in operation during any period of malfunction of its associated baghouse, the permittee shall determine compliance through maintenance of the records required by paragraph 5.c. below.

c. Use of Baghouse:

The permittee shall record the occurrence, duration, cause, and any corrective action taken for each incident when the E-Line Packaging is in operation but the corresponding baghouse is not in operation.

3. Testing Requirements:

Pursuant to Regulations 401 KAR 59:005, Section 2(2) and 401 KAR 50:045, Section 1, performance testing using the Reference Methods specified in Regulation 401 KAR 50:015 shall be conducted as required by the Division.

4. Specific Monitoring Requirements:

The permittee shall monitor the following parameters:

- a. Total weight of activated carbon processed at the E-Line Packaging operations each month.
- b. Total hours of activated carbon processing during the month.
- c. The permittee shall install, calibrate, maintain, and operate according to manufacturer's specification a monitoring device for the continuous measurement of the pressure loss of the gas stream through the E-Line Packaging baghouse.
- d. The permittee shall visually inspect the E-Line Packaging baghouse once per week during E-Line Packaging operations. The weekly inspection shall consist of a visual inspection of the physical condition of the external unit, combined with the corresponding visual emissions observation as outlined in paragraph 5.c. below.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

E. E-LINE:

- 43 (E-07)
1. E-Line Packaging operations
 2. D & E Activator to Packaging Conveyor

5. Specific Recordkeeping Requirements:

The permittee shall maintain records of the following information:

- a. Total weight of activated carbon processed at the E-Line Packaging operations each month.
- b. Total hours of activated carbon processing during the month.
- c. During all periods of malfunction of the baghouse, if the E-Line Packaging operations are in progress, a daily (calendar day) log of the following information shall be kept:
 - i. Whether any air emissions were visible from the baghouse stack;
 - ii. Whether the visible emissions were normal for the baghouse stack;
 - iii. The cause of any abnormal emissions and any corrective action taken.

If visible emissions are observed, the permittee shall perform a Method 9 reading as outlined in Appendix M to 40 CFR Part 51 for the E-Line Packaging operations baghouse stack. The opacity observed shall be recorded in the daily log. The reading shall be performed by a representative of the permittee certified in Visible Emissions Evaluations. The permittee shall maintain a list of all individuals that are certified Visible Emissions Evaluators and the date of certification.

- d. For the E-Line Packaging operations, a record of the following information:
 - i. A record of the weekly reading of the pressure loss of the gas stream through the baghouse as indicated by the continuous monitor.
 - ii. Findings of the weekly visual inspection and any corrective actions taken as a result.
- e. All maintenance activities performed at the baghouse.
- f. If an emission factor from other than testing is used, the emission factor and its supporting assumptions from Compliance Demonstration Method 2.a., above.

6. Specific Reporting Requirements:

The permittee shall submit a report of the following information to the Division for Air Quality's Ashland office in accordance with section F. 7. and F. 8:

- a. Any exceedance of the particulate matter and opacity emission limitations within thirty days of when the exceedance is determined.
- b. The occurrence, duration, cause, and any corrective action taken for each incident when the E-Line Packaging operations are in progress but the associated baghouse is not in operation.

7. Specific Control Equipment Operating Conditions: None.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

E. E-LINE:

44 (M-6) D & E Bulk Loadout System
Controls: Baghouse (PM/PM₁₀)

APPLICABLE REGULATIONS:

401 KAR 61:020, *Existing Process Operations*, applies to the emissions of particulate matter from the D & E Bulk Loadout System.

1. Operating Limitations:

The total weight of activated carbon processed at the D & E Bulk Loadout System shall not exceed 1.23 tons per hour and 10,797 tons during any consecutive 12 months [Permit O-94-020 (Revision 1)].

Compliance Demonstration Method:

The permittee shall maintain monthly records of the following information:

- a. Total weight of activated carbon processed at the D & E Bulk Loadout System each month.
- b. Total weight of activated carbon processed at the D & E Bulk Loadout System during the previous 12 months.
- c. Total hours of activated carbon processing during the month.
- d. Hourly activated carbon throughput = [Total weight of activated carbon processed at the D & E Bulk Loadout System each month]
? [Total hours of activated carbon processing during the month]

2. Emission Limitations:

a. Emissions of particulate matter from the D & E Bulk Loadout System shall not exceed the allowable rate limit as calculated by the following equation [401 KAR 61:020, Section 3 (2)]:

$$\text{For process rates up to 60,000 lb/hr: } E = 4.10P^{0.67}$$

Where E = rate of emissions in lb/hr, and

P = process weight rate in tons/hr of activated carbon processed at the D & E Bulk Loadout System (i.e.: The hourly activated carbon throughput rate determined in 1.d., above).

- b. The opacity of visible emissions from the D & E Bulk Loadout System shall not equal or exceed 40 percent [401 KAR 61:020, Section 3 (1)].
- c. The baghouse associated with the D & E Bulk Loadout System shall control emissions of particulate matter and be operated properly in accordance with manufacturer's specifications and/or standard operating procedures at all times the D & E Bulk Loadout System is in operation. The permittee is required to use the baghouse associated with the D & E Bulk Loadout System in order meet the particulate matter emission standard for the D & E Bulk Loadout System.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

E. E-LINE:

44 (M-6) D & E Bulk Loadout System

2. Emission Limitations: (continued)

Compliance Demonstration Method:

a. Mass Emission Standard:

Actual PM Emission Rate = [Emission factor observed during last stack test (in pounds PM/per ton activated carbon)] ? [The hourly activated carbon throughput rate determined in 1.d., above]

b. Opacity Limit:

- i. During periods of normal operation of the baghouse, no compliance demonstration is necessary other than the weekly visual inspection required by paragraph 4.d. below.
- ii. If the D & E Bulk Loadout System is in operation during any period of malfunction of its associated baghouse, the permittee shall determine compliance through maintenance of the records required by paragraph 5.c. below.

c. Use of Baghouse:

The permittee shall record the occurrence, duration, cause, and any corrective action taken for each incident when the D & E Bulk Loadout System is in operation but the corresponding baghouse is not in operation.

3. Testing Requirements:

Pursuant to Regulations 401 KAR 59:005, Section 2(2) and 401 KAR 50:045, Section 1, performance testing using the Reference Methods specified in Regulation 401 KAR 50:015 shall be conducted as required by the Division.

4. Specific Monitoring Requirements:

The permittee shall monitor the following parameters:

- a. Total weight of activated carbon processed at the D & E Bulk Loadout System each month.
- b. Total hours of activated carbon processing during the month.
- c. The permittee shall install, calibrate, maintain, and operate according to manufacturer's specification a monitoring device for the continuous measurement of the pressure loss of the gas stream through the D & E Bulk Loadout System baghouse.
- d. The permittee shall visually inspect the D & E Bulk Loadout System baghouse once per week during D & E Bulk Loadout System operations. The weekly inspection shall consist of a visual inspection of the physical condition of the external unit, combined with the corresponding visual emissions observation as outlined in paragraph 5.c. below.

5. Specific Recordkeeping Requirements:

The permittee shall maintain records of the following information:

- a. Total weight of activated carbon processed at the D & E Bulk Loadout System each month.
- b. Total hours of activated carbon processing during the month.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

E. E-LINE:

44 (M-6) D & E Bulk Loadout System

5. Specific Recordkeeping Requirements: (continued)

- c. During all periods of malfunction of the baghouse, if the D & E Bulk Loadout System operations are in progress, a daily (calendar day) log of the following information shall be kept:
 - i. Whether any air emissions were visible from the baghouse stack;
 - ii. Whether the visible emissions were normal for the baghouse stack;
 - iii. The cause of any abnormal emissions and any corrective action taken.If visible emissions are observed, the permittee shall perform a Method 9 reading as outlined in Appendix M to 40 CFR Part 51 for the D & E Bulk Loadout System operations baghouse stack. The opacity observed shall be recorded in the daily log. The reading shall be performed by a representative of the permittee certified in Visible Emissions Evaluations. The permittee shall maintain a list of all individuals that are certified Visible Emissions Evaluators and the date of certification.
- d. For the D & E Bulk Loadout System, a record of the following information:
 - i. A record of the weekly reading of the pressure loss of the gas stream through the baghouse as indicated by the continuous monitor.
 - ii. Findings of the weekly visual inspection and any corrective actions taken as a result.
- e. All maintenance activities performed at the baghouse.

6. Specific Reporting Requirements:

- The permittee shall submit a report of the following information to the Division for Air Quality's Ashland office in accordance with section F. 7. and F. 8:
- a. Any exceedance of the particulate matter and opacity emission limitations within thirty days of when the exceedance is determined.
 - b. The occurrence, duration, cause, and any corrective action taken for each incident when the D & E Bulk Loadout System operations are in progress but the associated baghouse is not in operation.

7. Specific Control Equipment Operating Conditions: None.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

45 (CAS-01) Reactivation Furnace

1. Operating Limitations: (continued)

Compliance Demonstration Method:

The permittee shall maintain monthly records of the following information:

- a. Total weight of spent carbon processed through the Reactivation Furnace each month.
- b. Total weight of spent carbon processed through the Reactivation Furnace during the previous 12 months.
- c. Total hours of operation of the Reactivation Furnace during each month.
- d. Hourly spent carbon throughput = $\frac{\text{[Total weight of spent carbon processed through the Reactivation Furnace each month]}}{\text{[Total hours of operation of the Reactivation Furnace during each month]}}$

2. Emission Limitations:

a. Emissions of particulate matter from the Reactivation Furnace shall not exceed the allowable rate limit as calculated by the following equation [401 KAR 61:020, Section 3 (2)]:

$$\text{For process rates up to 60,000 lb/hr: } E = 4.10P^{0.67}$$

Where E = rate of emissions in lb/hr, and

P = process weight rate in tons/hr of carbon processed at the Reactivation Furnace (i.e.: The hourly spent carbon throughput rate determined in 1.d., above.).

However, at no time shall emissions of particulate matter from the Reactivation Furnace exceed 7.01 lb/hr [*Synthetic Minor Limit*, Permit O-94-020 (Revision 1)].

- b. Emissions of sulfur dioxide from the Reactivation Furnace shall not exceed 21.04 lb/hr [*Synthetic Minor Limit*, Permit O-94-020 (Revision 1)].
- c. Emissions of volatile organic compounds (VOC) from the Reactivation Furnace shall not exceed 1.80 lb/hr [Permit O-94-020 (Revision 1)].
- d. Emissions of nitrogen oxides from the Reactivation Furnace shall not exceed 26.90 lb/hr [Permit O-94-020 (Revision 1)].
- e. Emissions of hydrogen fluoride from the Reactivation Furnace shall not exceed 0.50 lb/hr [Permit O-94-020 (Revision 1)].
- f. Emissions of lead from the Reactivation Furnace shall not exceed 2.58 lb/hr [Permit O-94-020 (Revision 1)].
- g. The opacity of visible emissions from the Reactivation Furnace shall not equal or exceed 10 percent [401 KAR 61:020, Section 3 (1) and Permit O-94-020 (Revision 1)].
- h. There shall be no visible emissions from the transfer point baghouse to enclosed containers subsequently transferred to a landfill [Permit O-94-020 (Revision 1)].
- i. The dry scrubber associated with the Reactivation Furnace shall control emissions of sulfur dioxide and be operated properly in accordance with manufacturer's specifications and/or standard operating procedures at all times the Reactivation Furnace is in operation. The permittee is required to use the dry scrubber associated with the Reactivation Furnace in order meet the sulfur dioxide emission standard for the Reactivation Furnace.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

45 (CAS-01) Reactivation Furnace

2. Emission Limitations: (continued)

- j. The baghouse associated with the Reactivation Furnace shall control emissions of particulate matter and be operated properly in accordance with manufacturer’s specifications and/or standard operating procedures at all times the Reactivation Furnace is in operation. The permittee is required to use the baghouse associated with the Reactivation Furnace in order meet the particulate matter emission standard for the Reactivation Furnace.
 - k. The afterburner shall control emissions of volatile organic compounds and be operated properly in accordance with manufacturer’s specifications and/or standard operating procedures at all times the Reactivation Furnace is in operation [401 KAR 50:012, Section 1 (1)].
 - l. The closed vent system designed for control organic emissions from the Spent Carbon Storage Tanks shall meet the requirements of 40 CFR 61.349 (a)(1)(i)-(iv) *.
 - m. 40 CFR 61.349(2)(ii) - The carbon adsorption system shall recover or control the organic emissions vented to it with an efficiency of 95 weight percent or greater, or shall recover or control the benzene emission vented to it with an efficiency of 98 weight percent or greater*.
- * In accordance with the provisions of 40 CFR 61.342(a), compliance with Operating Limitations 2.l and 2.m. shall not be required when the permittee demonstrates that the total annual benzene quantity from facility waste is less than 10 megagrams per year (Mg/yr).

Compliance Demonstration Method:

a. Mass Emission Standard:

$$\text{Actual PM / VOC / NO}_x \text{ / SO}_2 \text{ / HF / Pb Emission Rate} = \frac{\text{[Emission factor observed during last stack test (in pounds PM / VOC / NO}_x \text{ / SO}_2 \text{ / HF / Pb per ton carbon)]} \times \text{[The hourly spent carbon throughput rate determined in Compliance Demonstration Method 1.d., above]}}{?}$$

b. Opacity Limit:

- i. During periods of normal operation of the baghouse, no compliance demonstration is necessary other than the weekly visual inspection required by paragraph 4.e. below.
- ii. If the Reactivation Furnace is in operation during any period of malfunction of its associated baghouse, the permittee shall determine compliance through maintenance of the records required by paragraph 5.e. below.

c. Use of dry scrubber:

The permittee shall record the occurrence, duration, cause, and any corrective action taken for each incident when the Reactivation Furnace is in operation but the corresponding dry scrubber is not in operation.

d. Use of Baghouse:

The permittee shall record the occurrence, duration, cause, and any corrective action taken for each incident when the Reactivation Furnace is in operation but the corresponding baghouse is not in operation.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

45 (CAS-01)

Reactivation Furnace

2. Emission Limitations: (continued)**Compliance Demonstration Method:**e. Use of Afterburner:

The permittee shall record the occurrence, duration, cause, and any corrective action taken for each incident when the Reactivation Furnace is in operation but the corresponding afterburner is not in operation.

f. Use of Carbon Adsorption System:

40 CFR 61.349(c) - The permittee shall demonstrate that the carbon adsorption system achieves the required control efficiency through one of the following methods:

- (i) Engineering calculations in accordance with the requirements specified in 40 CFR 61.356(f); or
- (ii) Performance tests conducted using the test methods and procedures that meet the requirements specified in 40 CFR 40 CFR 61.355.

3. Testing Requirements:

- a. Pursuant to Regulations 401 KAR 59:005, Section 2(2) and 401 KAR 50:045, Section 1, performance testing using the Reference Methods specified in Regulation 401 KAR 50:015 shall be conducted as required by the Division.
- b. Whenever necessary, the permittee shall determine the total annual benzene quantity from facility waste in accordance with 40 CFR 61.355 (a).

4. Specific Monitoring Requirements:

The permittee shall monitor the following parameters:

- a. Total weight of spent carbon processed at the Reactivation Furnace each month.
- b. Total hours of operation of the Reactivation Furnace.
- c. The permittee shall calibrate, maintain, and operate according to manufacturer's specification monitoring devices for the continuous measurement of the following parameters:
 - i. Pressure loss of the gas stream through the Reactivation Furnace baghouse.
 - ii. Outlet temperature of the gas stream through the Reactivation Furnace baghouse.
 - iii. Outlet temperature of the gas stream through the Reactivation Furnace dry scrubber.
 - iv. Temperature in the combustion chamber of the Reactivation Furnace afterburner.
- d. The permittee shall calibrate, maintain, and operate according to manufacturer's specification, a continuous emission monitor (CEM) for the measurement of the concentration of sulfur dioxide in the outlet gas stream from the Reactivation Furnace.
- e. The permittee shall visually inspect the Reactivation Furnace baghouse once per week during Reactivation Furnace operations. The weekly inspection shall consist of a visual inspection of the physical condition of the external unit, combined with the corresponding visual emissions observation as outlined in paragraph 5.e. below.
- f. The permittee shall visually inspect (and repair as necessary) the closed vent system for the Spent Carbon Tanks on a quarterly basis in accordance with 40 CFR 61.349 (f) and (g).

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

45 (CAS-01) Reactivation Furnace

4. Specific Monitoring Requirements: (continued)

- g. 40 CFR 61.354 (d) - For the carbon adsorbers, the permittee shall obtain samples of the carbon in the adsorption units on a quarterly basis and shall analyze the samples for determination of the Apparent Density. Replacement of the carbon shall be required when
 - i. the measured Apparent Density exceeds 0.7, **OR**
 - ii. on an annual basis, whichever occurs first.

5. Specific Recordkeeping Requirements:

The permittee shall maintain records of the following information:

- a. Total weight of spent carbon processed at the Reactivation Furnace each month.
- b. Total hours of operation of the Reactivation Furnace.
- c. Continuous records of the following information:
 - i. Outlet temperature of the gas stream through the Reactivation Furnace baghouse.
 - ii. Outlet temperature of the gas stream through the Reactivation Furnace dry scrubber.
 - iii. Temperature in the combustion chamber of the Reactivation Furnace afterburner.
- d. Continuous records of the concentration of sulfur dioxide in the outlet gas stream from the Reactivation Furnace.
- e. During all periods of malfunction of the baghouse, if the Reactivation Furnace operations are in progress, a daily (calendar day) log of the following information shall be kept:
 - i. Whether any air emissions were visible from the baghouse stack;
 - ii. Whether the visible emissions were normal for the baghouse stack;
 - iii. The cause of any abnormal emissions and any corrective action taken.If visible emissions are observed, the permittee shall perform a Method 9 reading as outlined in Appendix M to 40 CFR Part 51 for the Reactivation Furnace operations baghouse stack. The opacity observed shall be recorded in the daily log. The reading shall be performed by a representative of the permittee certified in Visible Emissions Evaluations. The permittee shall maintain a list of all individuals that are certified Visible Emissions Evaluators and the date of certification.
- f. For the Reactivation Furnace baghouse, a record of the following information:
 - i. A record of the weekly reading of the pressure loss of the gas stream through the baghouse as indicated by the continuous monitor.
 - ii. Findings of the weekly visual inspection and any corrective actions taken as a result.
- g. All maintenance activities performed at the baghouse, dry scrubber, afterburner and carbon adsorber.
- h. 40 CFR 61.356 (d) - The permittee shall maintain engineering design documentation for the carbon adsorption system that is installed on the Spent Carbon Storage Tanks. The documentation shall be retained for the life of the carbon adsorption system.
- i. 40 CFR 61.356 (f) - The permittee shall maintain records for the carbon adsorption system in accordance with 40 CFR 61.356 (f)(1) and 61.356 (2)(i)(G).
- j. 40 CFR 61.356(g) - The permittee shall maintain a record for each visual inspection required by 40 CFR 61.343.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

45 (CAS-01) Reactivation Furnace

5. Specific Recordkeeping Requirements: (continued)

- k. For the Spent Carbon Storage Tanks, the permittee shall maintain a record of each test of no detectable emissions required by 40 CFR 61.343. The record shall contain the information required by 40 CFR 61.356 (h).
- l. For the Carbon Adsorption System, the permittee shall maintain the records required by 40 CFR 61.356 (j).
- m. For the Carbon Adsorbers, the permittee shall maintain records of the quarterly Apparent Density analytical results and the associated carbon replacement events.
- n. The permittee shall maintain records of the following information for each approved customer application type of spent carbon that will be processed at the Reactivation Furnace:
 - i. A complete organic analysis of the spent carbon used at any RCRA site.
 - ii. A certification from all sources of spent carbon stating that no dioxin adsorption has occurred on the spent carbon and no PCB adsorption in excess of 50 mg/kg has occurred on the spent carbon.
 - iii. If the spent carbon has a chloride content of greater than 4.0% by weight, then the permittee shall submit a written notice to the division, with a copy to the division's Ashland Regional Office, of the intent to process such carbon at least 5 days prior to processing. The notice shall contain the following information:
 - (1) The source of the spent carbon;
 - (2) The chlorine and sulfur content;
 - (3) The maximum processing rate of the carbon, and calculations demonstrating that emissions of HCl do not exceed 2.55 lbs/hr.

6. Specific Reporting Requirements:

The permittee shall submit a report of the following information to the Division for Air Quality's Ashland office in accordance with section F. 7. and F. 8:

- a. Any exceedance of the emission limitations outlined in paragraphs 2.a., and 2.c. – h., above, within thirty days of when the exceedance is determined.
- b. [Permit O-94-020 (Revision 1)] - The permittee shall submit to the division, a written report of all exceedances of the sulfur dioxide emission limit outlined in paragraph 2.b., above (21.04 lbs/hr), on a 3-hour average basis, as measured by the SO₂ continuous emission monitor (CEM).
- c. The occurrence, duration, cause, and any corrective action taken for each incident when the Reactivation Furnace operations are in progress but the associated dry scrubber, baghouse, afterburner, and carbon adsorption system are not in operation.

7. Specific Control Equipment Operating Conditions:

- a. [Permit O-94-020 (Revision 1)] - The permittee shall operate and maintain furnace feed shutdown systems that are activated if:
 - i. The dry scrubber atomizer wheel stops.
 - ii. The spray dryer outlet temperature exceeds the maximum continuous service temperature rating of the dust collector bags.

- iii. The furnace afterburner system stack temperature fall below 1600°F (3-hour average).

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

45 (CAS-01) Reactivation Furnace

7. Specific Control Equipment Operating Conditions: (continued)

- b. [Permit O-94-020 (Revision 1)] - The permittee shall operate and maintain process alarms that are activated if:
 - i. The furnace afterburner system stack temperature fall below 1625°F (3-hour average).
 - ii. The baghouse outlet temperature falls below 200°F (3-hour average).
 - iii. The dry scrubber outlet temperature falls below 200°F (3-hour average).
 - iv. The dry scrubber and baghouse catch disposal silo fills to within 12 inches of its top.
- c. The Reactivation Furnace afterburner shall be operated at a minimum temperature of 1625°F (3-hour average). An **excursion** from the operating range specified is any 3-hour period during which the average temperature in the afterburner was below the minimum specified.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

48 (CAS-06) Waste Disposal Silo
 Controls: Baghouse (PM/PM₁₀)

APPLICABLE REGULATIONS:

401 KAR 61:020, *Existing Process Operations*, applies to the emissions of particulate matter from the Waste Disposal Silo.

1. Operating Limitations:

The total weight of waste processed at the Waste Disposal Silo shall not exceed 3.0 tons per hour and 26,208 tons during any consecutive 12 months [Permit O-94-020 (Revision 1)].

Compliance Demonstration Method:

The permittee shall maintain monthly records of the following information:

- a. Total weight of waste processed at the Waste Disposal Silo each month.
- b. Total weight of waste processed at the Waste Disposal Silo during the previous 12 months.
- c. Total hours of waste processing during the month.
- d. Hourly waste throughput = [Total weight of waste processed at the Waste Disposal Silo each month] ? [Total hours of waste processing during the month]

2. Emission Limitations:

a. Emissions of particulate matter from the Waste Disposal Silo shall not exceed the allowable rate limit as calculated by the following equation [401 KAR 61:020, Section 3 (2)]:

For process rates up to 60,000 lb/hr: $E = 4.10P^{0.67}$

Where E = rate of emissions in lb/hr, and

P = process weight rate in tons/hr of waste processed at the Waste Disposal Silo (i.e.: The hourly waste throughput rate determined in 1.d., above).

- b. The opacity of visible emissions from the Waste Disposal Silo shall not equal or exceed 40 percent [401 KAR 61:020, Section 3 (1)].
- c. The baghouse associated with the Waste Disposal Silo shall control emissions of particulate matter and be operated properly in accordance with manufacturer's specifications and/or standard operating procedures at all times the silo is loaded or unloading. The permittee is required to use the baghouse associated with each silo in order meet the respective particulate matter emission standard for the Waste Disposal Silo.

Compliance Demonstration Method:

a. Mass Emission Standard:

Actual PM Emission Rate = [Emission factor* observed during last stack test (in pounds PM/per ton waste)] ? [The hourly waste throughput rate determined in 1.d., above]

*Alternate emission factor may be established based on demonstration of similarity to other tested sources and/or estimated using credible engineering judgement based on conservative assumptions.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

48 (CAS-06)

Waste Disposal Silo

2. Emission Limitations: (continued)

Compliance Demonstration Method:

b. Opacity Limit:

- i. During periods of normal operation of the baghouse, no compliance demonstration is necessary other than the weekly visual inspection required by paragraph 4.d. below..
- ii. If the Waste Disposal Silo is loaded or unloaded during any period of malfunction of its associated baghouse, the permittee shall determine compliance through maintenance of the records required by paragraph 5.c. below.

c. Use of Baghouse:

The permittee shall record the occurrence, duration, cause, and any corrective action taken for each incident when the Waste Disposal Silo is loaded or unloaded but the corresponding baghouse is not in operation.

3. Testing Requirements:

Pursuant to Regulations 401 KAR 59:005, Section 2(2) and 401 KAR 50:045, Section 1, performance testing using the Reference Methods specified in Regulation 401 KAR 50:015 shall be conducted as required by the Division.

4. Specific Monitoring Requirements:

The permittee shall monitor the following parameters:

- a. Amount of waste loaded into the Waste Disposal Silo per month.
- b. Hours of waste handling at the Waste Disposal Silo per month.
- c. The permittee shall install, calibrate, maintain, and operate according to manufacturer's specification a monitoring device for the continuous measurement of the pressure loss of the gas stream through the Waste Disposal Silo baghouse.
- d. The permittee shall visually inspect the Waste Disposal Silo baghouse once per week. The weekly inspection shall consist of a visual inspection of the physical condition of the external unit, combined with the corresponding visual emissions observation as outlined in paragraph 5.c. below.

5. Specific Recordkeeping Requirements:

The permittee shall maintain records of the following information:

- a. Amount of waste loaded into the Waste Disposal Silo per month.
- b. Hours of loading for the Waste Disposal Silo per month.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

48 (CAS-06) Waste Disposal Silo

5. Specific Recordkeeping Requirements: (continued)

- c. During all periods of malfunction of the baghouse, if the Waste Disposal Silo operations are in progress, a daily (calendar day) log of the following information shall be kept:
 - i. Whether any air emissions were visible from the baghouse stack;
 - ii. Whether the visible emissions were normal for the baghouse stack;
 - iii. The cause of any abnormal emissions and any corrective action taken.If visible emissions are observed, the permittee shall perform a Method 9 reading as outlined in Appendix M to 40 CFR Part 51 for the Waste Disposal Silo operations baghouse stack. The opacity observed shall be recorded in the daily log. The reading shall be performed by a representative of the permittee certified in Visible Emissions Evaluations. The permittee shall maintain a list of all individuals that are certified Visible Emissions Evaluators and the date of certification.
- d. For the Waste Disposal Silo baghouse, a record of the following information:
 - i. A record of the weekly reading of the pressure loss of the gas stream through the baghouse as indicated by the continuous monitor.
 - ii. Findings of the weekly visual inspection and any corrective actions taken as a result.
- e. All maintenance activities performed at the baghouse.
- f. If an emission factor from other than testing is used, the emission factor and its supporting assumptions from Compliance Demonstration Method 2.a., above.

6. Specific Reporting Requirements:

- The permittee shall submit a report of the following information to the Division for Air Quality's Ashland office in accordance with section F. 7. and F. 8:
- a. Any exceedance of the particulate matter and opacity emission limitations within thirty days of when the exceedance is determined.
 - b. The occurrence, duration, cause, and any corrective action taken for each incident when the Waste Disposal Silo operations are in progress but the associated baghouse is not in operation.

7. Specific Control Equipment Operating Conditions: None.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

49 (CAS-07) Soda Ash Storage Silo
Controls: Baghouse (PM/PM₁₀)

APPLICABLE REGULATIONS:

401 KAR 61:020, *Existing Process Operations*, applies to the emissions of particulate matter from the Soda Ash Storage Silo.

1. Operating Limitations:

The total weight of soda ash processed at the Soda Ash Storage Silo shall not exceed 3.0 tons per hour and 26,280 tons during any consecutive 12 months [Permit O-94-020 (Revision 1)].

Compliance Demonstration Method:

The permittee shall maintain monthly records of the following information:

- a. Total weight of soda ash processed at the Soda Ash Storage Silo each month.
- b. Total weight of soda ash processed at the Soda Ash Storage Silo during the previous 12 months.
- c. Total hours of soda ash processing during the month.
- d. Hourly soda ash throughput = [Total weight of soda ash processed at the Soda Ash Storage Silo each month] ? [Total hours of soda ash processing during the month]

2. Emission Limitations:

a. Emissions of particulate matter from the Soda Ash Storage Silo shall not exceed the allowable rate limit as calculated by the following equation [401 KAR 61:020, Section 3 (2)]:

$$\text{For process rates up to 60,000 lb/hr: } E = 4.10P^{0.67}$$

Where E = rate of emissions in lb/hr, and

P = process weight rate in tons/hr of soda ash processed at the Soda Ash Storage Silo (i.e.: The hourly soda ash throughput rate determined in 1.d., above).

- b. The opacity of visible emissions from the Soda Ash Storage Silo shall not equal or exceed 40 percent [401 KAR 61:020, Section 3 (1)].
- c. The baghouse associated with the Soda Ash Storage Silo shall control emissions of particulate matter and be operated properly in accordance with manufacturer's specifications and/or standard operating procedures at all times the silo is loaded or unloading. The permittee is required to use the baghouse associated with each silo in order meet the respective particulate matter emission standard for the Soda Ash Storage Silo.

Compliance Demonstration Method:**a. Mass Emission Standard:**

$$\text{Actual PM Emission Rate} = [\text{Emission factor* observed during last stack test (in pounds PM/per ton soda ash)}] ? [\text{The hourly soda ash throughput rate determined in 1.d., above}]$$

*Alternate emission factor may be established based on demonstration of similarity to other tested sources and/or estimated using credible engineering judgement based on conservative assumptions.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

49 (CAS-07) Soda Ash Storage Silo

2. Emission Limitations: (continued)

Compliance Demonstration Method:

b. Opacity Limit:

- i. During periods of normal operation of the baghouse, no compliance demonstration is necessary other than the weekly visual inspection required by paragraph 4.d. below..
- ii. If the Soda Ash Storage Silo is loaded or unloaded during any period of malfunction of its associated baghouse, the permittee shall determine compliance through maintenance of the records required by paragraph 5.c. below.

c. Use of Baghouse:

The permittee shall record the occurrence, duration, cause, and any corrective action taken for each incident when the Soda Ash Storage Silo is loaded or unloaded but the corresponding baghouse is not in operation.

3. Testing Requirements:

Pursuant to Regulations 401 KAR 59:005, Section 2(2) and 401 KAR 50:045, Section 1, performance testing using the Reference Methods specified in Regulation 401 KAR 50:015 shall be conducted as required by the Division.

4. Specific Monitoring Requirements:

The permittee shall monitor the following parameters:

- a. Amount of soda ash loaded into the Soda Ash Storage Silo per month.
- b. Hours of operation of the Soda Ash Storage Silo per month.
- c. The permittee shall install, calibrate, maintain, and operate according to manufacturer's specification a monitoring device for the continuous measurement of the pressure loss of the gas stream through the Soda Ash Storage Silo baghouse.
- d. The permittee shall visually inspect the Soda Ash Storage Silo baghouse once per week. The weekly inspection shall consist of a visual inspection of the physical condition of the external unit, combined with the corresponding visual emissions observation as outlined in paragraph 5.c. below.

5. Specific Recordkeeping Requirements:

The permittee shall maintain records of the following information:

- a. Amount of soda ash loaded into the Soda Ash Storage Silo per month.
- b. Hours of loading for the Soda Ash Storage Silo per month.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

49 (CAS-07) Soda Ash Storage Silo

5. Specific Recordkeeping Requirements: (continued)

- c. During all periods of malfunction of the baghouse, if the Soda Ash Storage Silo operations are in progress, a daily (calendar day) log of the following information shall be kept:
 - i. Whether any air emissions were visible from the baghouse stack;
 - ii. Whether the visible emissions were normal for the baghouse stack;
 - iii. The cause of any abnormal emissions and any corrective action taken.If visible emissions are observed, the permittee shall perform a Method 9 reading as outlined in Appendix M to 40 CFR Part 51 for the Soda Ash Storage Silo operations baghouse stack. The opacity observed shall be recorded in the daily log. The reading shall be performed by a representative of the permittee certified in Visible Emissions Evaluations. The permittee shall maintain a list of all individuals that are certified Visible Emissions Evaluators and the date of certification.
- d. For the Soda Ash Storage Silo baghouse, a record of the following information:
 - i. A record of the weekly reading of the pressure loss of the gas stream through the baghouse as indicated by the continuous monitor.
 - ii. Findings of the weekly visual inspection and any corrective actions taken as a result.
- e. All maintenance activities performed at the baghouse.
- f. If an emission factor from other than testing is used, the emission factor and its supporting assumptions from Compliance Demonstration Method 2.a., above.

6. Specific Reporting Requirements:

- The permittee shall submit a report of the following information to the Division for Air Quality's Ashland office in accordance with section F. 7. and F. 8:
- a. Any exceedance of the particulate matter and opacity emission limitations within thirty days of when the exceedance is determined.
 - b. The occurrence, duration, cause, and any corrective action taken for each incident when the Soda Ash Storage Silo operations are in progress but the associated baghouse is not in operation.

7. Specific Control Equipment Operating Conditions: None.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- 50 (A-15) Pulverizer Collection System
 Pulverizer Elevator
 Controls: Baghouse (PM/PM₁₀)

APPLICABLE REGULATIONS:

401 KAR 61:020, *Existing Process Operations*, applies to the emissions of particulate matter from the Pulverizer Collection System.

1. Operating Limitations:

The total weight of fines processed at the Pulverizer Collection System shall not exceed 3.0 tons per hour and 25,200 tons during any consecutive 12 months [Permit O-94-020 (Revision 1)].

Compliance Demonstration Method:

The permittee shall maintain monthly records of the following information:

- a. Total weight of fines processed at the Pulverizer Collection System each month.
- b. Total weight of fines processed at the Pulverizer Collection System during the previous 12 months.
- c. Total hours of fines processing during the month.
- d. Hourly fines throughput = $\frac{[\text{Total weight of fines processed at the Pulverizer Collection System each month}]}{[\text{Total hours of fines processing during the month}]}$

2. Emission Limitations:

- a. Emissions of particulate matter from the Pulverizer Collection System shall not exceed the allowable rate limit as calculated by the following equation [401 KAR 61:020, Section 3 (2)]:

$$\text{For process rates up to 60,000 lb/hr: } E = 4.10P^{0.67}$$

Where E = rate of emissions in lb/hr, and

P = process weight rate in tons/hr of fines processed at the Pulverizer Collection System (i.e.: The hourly fines throughput rate determined in 1.d., above).

- b. Emissions of particulate matter from the Pulverizer Collection System shall not exceed 35.95 tons during any consecutive 12 months [*Synthetic Minor Limit*, Permit O-94-020 (Revision 1)].
- c. The opacity of visible emissions from the Pulverizer Collection System shall not equal or exceed 40 percent [401 KAR 61:020, Section 3 (1)].
- d. The baghouse associated with the Pulverizer Collection System shall control emissions of particulate matter and be operated properly in accordance with manufacturer's specifications and/or standard operating procedures at all times the Pulverizer Collection System is in operation. The permittee is required to use the baghouse associated with the Pulverizer Collection System in order meet the particulate matter emission standard for the Pulverizer Collection System.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

50 (A-15) Pulverizer Collection System

2. Emission Limitations: (continued)

Compliance Demonstration Method:

a. Mass Emission Standard:

Actual PM Emission Rate = [Emission factor observed during last stack test (in pounds PM/per ton of fines)] ? [The hourly fines throughput rate determined in 1.d., above]

b. Opacity Limit:

- i. During periods of normal operation of the baghouse, no compliance demonstration is necessary other than the weekly visual inspection required by paragraph 4.d. below..
- ii. If the Pulverizer Collection System is in operation during any period of malfunction of its associated baghouse, the permittee shall determine compliance through maintenance of the records required by paragraph 5.c. below.

c. Use of Baghouse:

The permittee shall record the occurrence, duration, cause, and any corrective action taken for each incident when the Pulverizer Collection System is in operation but the corresponding baghouse is not in operation.

3. Testing Requirements:

Pursuant to Regulations 401 KAR 59:005, Section 2(2) and 401 KAR 50:045, Section 1, performance testing using the Reference Methods specified in Regulation 401 KAR 50:015 shall be conducted as required by the Division.

4. Specific Monitoring Requirements:

The permittee shall monitor the following parameters:

- a. Total weight of fines processed at the Pulverizer Collection System each month.
- b. Total hours of fines processing during the month.
- c. The permittee shall install, calibrate, maintain, and operate according to manufacturer's specification a monitoring device for the continuous measurement of the pressure loss of the gas stream through the Pulverizer Collection System baghouse.
- d. The permittee shall visually inspect the Pulverizer Collection System baghouse once per week during Pulverizer Collection System operations. The weekly inspection shall consist of a visual evaluation of the physical condition of the external unit, combined with the corresponding visual emissions observation as outlined in paragraph 5.c. below.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

50 (A-15) Pulverizer Collection System

5. Specific Recordkeeping Requirements:

The permittee shall maintain records of the following information:

- a. Total weight of fines processed at the Pulverizer Collection System each month.
- b. Total hours of fines processing during the month.
- c. During all periods of malfunction of the baghouse, if the Pulverizer Collection System operations are in progress, a daily (calendar day) log of the following information shall be kept:
 - i. Whether any air emissions were visible from the baghouse stack;
 - ii. Whether the visible emissions were normal for the baghouse stack;
 - iii. The cause of any abnormal emissions and any corrective action taken.

If visible emissions are observed, the permittee shall perform a Method 9 reading as outlined in Appendix M to 40 CFR Part 51 for the Pulverizer Collection System operations baghouse stack. The opacity observed shall be recorded in the daily log. The reading shall be performed by a representative of the permittee certified in Visible Emissions Evaluations. The permittee shall maintain a list of all individuals that are certified Visible Emissions Evaluators and the date of certification.

- d. For the Pulverizer Collection System baghouse, a record of the following information:
 - i. A record of the weekly reading of the pressure loss of the gas stream through the baghouse as indicated by the continuous monitor.
 - ii. Findings of the weekly visual inspection and any corrective actions taken as a result.
- e. All maintenance activities performed at the baghouse.

6. Specific Reporting Requirements:

The permittee shall submit a report of the following information to the Division for Air Quality's Ashland office in accordance with section F. 7. and F. 8:

- a. Any exceedance of the particulate matter and opacity emission limitations within thirty days of when the exceedance is determined.
- b. The occurrence, duration, cause, and any corrective action taken for each incident when the Pulverizer Collection System operations are in progress but the associated baghouse is not in operation.

7. Specific Control Equipment Operating Conditions: None.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

51 (C-09) A, B, C & Acid Wash Fines Packaging System
Controls: Baghouse (PM/PM₁₀)

APPLICABLE REGULATIONS:

401 KAR 61:020, *Existing Process Operations*, applies to the emissions of particulate matter from the A, B, C & Acid Wash Fines Packaging System.

1. Operating Limitations:

The total weight of fines processed at the A, B, C & Acid Wash Fines Packaging System shall not exceed 1.0 tons per hour and 8,760 tons during any consecutive 12 months [Permit O-94-020 (Revision 1)].

Compliance Demonstration Method:

The permittee shall maintain monthly records of the following information:

- a. Total weight of fines processed at the A, B, C & Acid Wash Fines Packaging System each month.
- b. Total weight of fines processed at the A, B, C & Acid Wash Fines Packaging System during the previous 12 months.
- c. Total hours of fines processing during the month.
- d. Hourly fines throughput = [Total weight of fines processed at the A, B, C & Acid Wash Fines Packaging System each month]? [Total hours of fines processing during the month]

2. Emission Limitations:

a. Emissions of particulate matter from the A, B, C & Acid Wash Fines Packaging System shall

not exceed the allowable rate limit as calculated by the following equation [401 KAR 61:020, Section 3 (2)]:

$$\text{For process rates up to 60,000 lb/hr: } E = 4.10P^{0.67}$$

Where E = rate of emissions in lb/hr, and

P = process weight rate in tons/hr of fines processed at the A, B, C & Acid Wash Fines Packaging System (i.e.: The hourly fines throughput rate determined in 1.d., above).

- b. The opacity of visible emissions from the A, B, C & Acid Wash Fines Packaging System shall not equal or exceed 40 percent [401 KAR 61:020, Section 3 (1)].
- c. The baghouse associated with the A, B, C & Acid Wash Fines Packaging System shall control emissions of particulate matter and be operated properly in accordance with manufacturer's specifications and/or standard operating procedures at all times the A, B, C & Acid Wash Fines Packaging System is in operation. The permittee is required to use the baghouse associated with the A, B, C & Acid Wash Fines Packaging System in order meet the particulate matter emission standard for the A, B, C & Acid Wash Fines Packaging System.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

51 (C-09) A, B, C & Acid Wash Fines Packaging System

2. Emission Limitations: (continued)

Compliance Demonstration Method:

a. Mass Emission Standard:

Actual PM Emission Rate = [Emission factor* observed during last stack test (in pounds PM/per ton of fines)] ? [The hourly fines throughput rate determined in 1.d., above]

*Alternate emission factor may be established based on demonstration of similarity to other tested sources and/or estimated using credible engineering judgement based on conservative assumptions.

b. Opacity Limit:

- i. During periods of normal operation of the baghouse, no compliance demonstration is necessary other than the weekly visual inspection required by paragraph 4.d. below.
- ii. If the A, B, C & Acid Wash Fines Packaging System is in operation during any period of malfunction of its associated baghouse, the permittee shall determine compliance through maintenance of the records required by paragraph 5.c. below.

c. Use of Baghouse:

The permittee shall record the occurrence, duration, cause, and any corrective action taken for each incident when the A, B, C & Acid Wash Fines Packaging System is in operation but the corresponding baghouse is not in operation.

3. Testing Requirements:

Pursuant to Regulations 401 KAR 59:005, Section 2(2) and 401 KAR 50:045, Section 1, performance testing using the Reference Methods specified in Regulation 401 KAR 50:015 shall be conducted as required by the Division.

4. Specific Monitoring Requirements:

The permittee shall monitor the following parameters:

- a. Total weight of fines processed at the A, B, C & Acid Wash Fines Packaging System each month.
- b. Total hours of fines processing during the month.
- c. The permittee shall install, calibrate, maintain, and operate according to manufacturer's specification a monitoring device for the continuous measurement of the pressure loss of the gas stream through the A, B, C & Acid Wash Fines Packaging System baghouse.
- d. The permittee shall visually inspect the A, B, C & Acid Wash Fines Packaging System baghouse once per week during A, B, C & Acid Wash Fines Packaging System operations. The weekly inspection shall consist of a visual inspection of the physical condition of the external unit, combined with the corresponding visual emissions observation as outlined in paragraph 5.c. below.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

51 (C-09) A, B, C & Acid Wash Fines Packaging System

5. Specific Recordkeeping Requirements:

The permittee shall maintain records of the following information:

- a. Total weight of fines processed at the A, B, C & Acid Wash Fines Packaging System each month.
- b. Total hours of fines processing during the month.
- c. During all periods of malfunction of the baghouse, if the A, B, C & Acid Wash Fines Packaging System operations are in progress, a daily (calendar day) log of the following information shall be kept:
 - i. Whether any air emissions were visible from the baghouse stack;
 - ii. Whether the visible emissions were normal for the baghouse stack;
 - iii. The cause of any abnormal emissions and any corrective action taken.

If visible emissions are observed, the permittee shall perform a Method 9 reading as outlined in Appendix M to 40 CFR Part 51 for the A, B, C & Acid Wash Fines Packaging System operations baghouse stack. The opacity observed shall be recorded in the daily log. The reading shall be performed by a representative of the permittee certified in Visible Emissions Evaluations. The permittee shall maintain a list of all individuals that are certified Visible Emissions Evaluators and the date of certification.

- d. For the A, B, C & Acid Wash Fines Packaging System, a record of the following information:
 - i. A record of the weekly reading of the pressure loss of the gas stream through the baghouse as indicated by the continuous monitor.
 - ii. Findings of the weekly visual inspection and any corrective actions taken as a result.
- e. All maintenance activities performed at the baghouse.
- f. If an emission factor from other than testing is used, the emission factor and its supporting assumptions from Compliance Demonstration Method 2.a., above.

6. Specific Reporting Requirements:

The permittee shall submit a report of the following information to the Division for Air Quality's Ashland office in accordance with section F. 7. and F. 8:

- a. Any exceedance of the particulate matter and opacity emission limitations within thirty days of when the exceedance is determined.
- b. The occurrence, duration, cause, and any corrective action taken for each incident when the A, B, C & Acid Wash Fines Packaging System operations are in progress but the associated baghouse is not in operation.

7. Specific Control Equipment Operating Conditions: None.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

52 (F-01) Activated Carbon Fine Mesh Production
Controls: Baghouse (PM/PM₁₀)

APPLICABLE REGULATIONS:

401 KAR 59:010, *New Process Operations*, applies to the emissions of particulate matter from the Activated Carbon Fine Mesh Production unit.

1. Operating Limitations:

The total weight of activated carbon fines produced at the Activated Carbon Fine Mesh Production unit shall not exceed 2.0 tons per hour and 17,520 tons during any consecutive 12 months [Permit O-94-020 (Revision 1)].

Compliance Demonstration Method:

The permittee shall maintain monthly records of the following information:

- a. Total weight of activated carbon fines produced at the Activated Carbon Fine Mesh Production unit each month.
- b. Total weight of activated carbon fines produced at the Activated Carbon Fine Mesh Production unit during the previous 12 months.
- c. Total hours of operation of the Activated Carbon Fine Mesh Production unit during the month.
- d. Hourly activated carbon fines production rate =

$$\frac{[\text{Total weight of activated carbon fines produced at the Activated Carbon Fine Mesh Production unit each month}]}{[\text{Total hours of operation of the Activated Carbon Fine Mesh Production unit during the month}]}$$

2. Emission Limitations:

- a. Emissions of particulate matter shall not exceed the allowable rate limit as calculated by the following equation [401 KAR 59:010, Section 3 (2)]:
 For process rates up to 60,000 lb/hr: $E = 3.59P^{0.62}$
 Where E = rate of emissions in lb/hr, and
 P = process weight rate in tons/hr of activated carbon fines produced (i.e.: The hourly activated carbon fines production rate determined in 1.d., above).
- b. Emissions of particulate matter from the Activated Carbon Fine Mesh Production unit shall not exceed 12.42 tons during any consecutive 12 months [*Synthetic Minor Limit*, Permit O-94-020 (Revision 1)].
- c. The opacity of visible emissions from the Activated Carbon Fine Mesh Production unit shall not equal or exceed 20 percent [401 KAR 59:010, Section 3 (1)].
- d. The baghouse associated with the Activated Carbon Fine Mesh Production unit shall control emissions of particulate matter and be operated properly in accordance with manufacturer's specifications and/or standard operating procedures at all times the Activated Carbon Fine Mesh Production unit is in operation. The permittee is required to use the baghouse associated with the Activated Carbon Fine Mesh Production unit in order meet the particulate matter emission standard for the Activated Carbon Fine Mesh Production unit.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

52 (F-01) Activated Carbon Fine Mesh Production

2. Emission Limitations: (continued)

Compliance Demonstration Method:

a. Mass Emission Standard:

Actual PM Emission Rate = [Emission factor observed during last stack test (in pounds PM/per ton of fines)] ? [The hourly activated carbon fines production rate determined in 1.d., above]

b. Opacity Limit:

- i. During periods of normal operation of the baghouse, no compliance demonstration is necessary other than the weekly visual inspection required by paragraph 4.d. below.
- ii. If the Activated Carbon Fine Mesh Production unit is in operation during any period of malfunction of its associated baghouse, the permittee shall determine compliance through maintenance of the records required by paragraph 5.c. below.

c. Use of Baghouse:

The permittee shall record the occurrence, duration, cause, and any corrective action taken for each incident when the Activated Carbon Fine Mesh Production unit is in operation but the corresponding baghouse is not in operation.

3. Testing Requirements:

Pursuant to Regulations 401 KAR 59:005, Section 2(2) and 401 KAR 50:045, Section 1, performance testing using the Reference Methods specified in Regulation 401 KAR 50:015 shall be conducted as required by the Division.

4. Specific Monitoring Requirements:

The permittee shall monitor the following parameters:

- a. Total weight of activated carbon fines produced at the Activated Carbon Fine Mesh Production unit each month.
- b. Total hours of operation of the Activated Carbon Fine Mesh Production unit during the month.
- c. The permittee shall install, calibrate, maintain, and operate according to manufacturer's specification a monitoring device for the continuous measurement of the pressure loss of the gas stream through the Activated Carbon Fine Mesh Production baghouse.
- d. The permittee shall visually inspect the Activated Carbon Fine Mesh Production baghouse once per week during Activated Carbon Fine Mesh Production operations. The weekly inspection shall consist of a visual inspection of the physical condition of the external unit, combined with the corresponding visual emissions observation as outlined in paragraph 5.c. below.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

52 (F-01) Activated Carbon Fine Mesh Production

5. Specific Recordkeeping Requirements:

The permittee shall maintain records of the following information:

- a. Total weight of activated carbon fines produced at the Activated Carbon Fine Mesh Production unit each month.
- b. Total hours of operation of the Activated Carbon Fine Mesh Production unit during the month.
- c. During all periods of malfunction of the baghouse, if the Activated Carbon Fine Mesh Production operations are in progress, a daily (calendar day) log of the following information shall be kept:
 - i. Whether any air emissions were visible from the baghouse stack;
 - ii. Whether the visible emissions were normal for the baghouse stack;
 - iii. The cause of any abnormal emissions and any corrective action taken.

If visible emissions are observed, the permittee shall perform a Method 9 reading as outlined in Appendix M to 40 CFR Part 51 for the Activated Carbon Fine Mesh Production operations baghouse stack. The opacity observed shall be recorded in the daily log. The reading shall be performed by a representative of the permittee certified in Visible Emissions Evaluations. The permittee shall maintain a list of all individuals that are certified Visible Emissions Evaluators and the date of certification.

- d. For the Activated Carbon Fine Mesh Production unit baghouse, a record of the following information:
 - i. A record of the weekly reading of the pressure loss of the gas stream through the baghouse as indicated by the continuous monitor.
 - ii. Findings of the weekly visual inspection and any corrective actions taken as a result.
- e. All maintenance activities performed at the baghouse.

6. Specific Reporting Requirements:

The permittee shall submit a report of the following information to the Division for Air Quality's Ashland office in accordance with section F. 7. and F. 8:

- a. Any exceedance of the particulate matter and opacity emission limitations within thirty days of when the exceedance is determined.
- b. The occurrence, duration, cause, and any corrective action taken for each incident when the Activated Carbon Fine Mesh Production operations are in progress but the associated baghouse is not in operation.

7. Specific Control Equipment Operating Conditions: None.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

53 (CAS-09) Reactivation Process for Custom Product
 Controls: Baghouse (PM/PM₁₀)

APPLICABLE REGULATIONS:

401 KAR 59:010, *New Process Operations*, applies to the emissions of particulate matter from the Reactivation Process for Custom Product unit.

1. Operating Limitations:

The total weight of custom product reactivated at the Reactivation Process for Custom Product unit shall not exceed 2.50 tons per hour and 21,840 tons during any consecutive 12 months.

Compliance Demonstration Method:

The permittee shall maintain monthly records of the following information:

- a. Total weight of custom product reactivated at the Reactivation Process for Custom Product unit each month.
- b. Total weight of custom product reactivated at the Reactivation Process for Custom Product unit during the previous 12 months.
- c. Total hours of operation of the Reactivation Process for Custom Product unit during the month.
- d. Hourly custom product reactivation rate =

$$\frac{[\text{Total weight of custom product reactivated at the Reactivation Process for Custom Product unit each month}]}{[\text{Total hours of operation of the Reactivation Process for Custom Product unit during the month}]}$$

2. Emission Limitations:

- a. Emissions of particulate matter shall not exceed the allowable rate limit as calculated by the following equation [401 KAR 59:010, Section 3 (2)]:
 For process rates up to 60,000 lb/hr: $E = 3.59P^{0.62}$
 Where E = rate of emissions in lb/hr, and
 P = process weight rate in tons/hr of custom product reactivated (i.e.: The hourly custom product reactivation rate determined in 1.d., above).
- b. Emissions of particulate matter from the Reactivation Process for Custom Product shall not exceed 2.48 tons during any consecutive 12 months [*Synthetic Minor Limit*, Permit O-94-020 (Revision 1)].
- c. The opacity of visible emissions from the Reactivation Process for Custom Product shall not equal or exceed 20 percent [401 KAR 59:010, Section 3 (1)].
- d. The baghouse associated with the Reactivation Process for Custom Product unit shall control emissions of particulate matter and be operated properly in accordance with manufacturer's specifications and/or standard operating procedures at all times the Reactivation Process for Custom Product unit is in operation. The permittee is required to use the baghouse associated with the Reactivation Process for Custom Product unit in order meet the particulate matter emission standard for the Reactivation Process for Custom Product unit.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

53 (CAS-09) Reactivation Process for Custom Product

2. Emission Limitations: (continued)

Compliance Demonstration Method:

a. Mass Emission Standard:

Actual PM Emission Rate = [Emission factor observed during last stack test (in pounds PM/per ton of custom product)] ? [The hourly custom product reactivation rate determined in 1.d., above]

b. Opacity Limit:

- i. During periods of normal operation of the baghouse, no compliance demonstration is necessary other than the weekly visual inspection required by paragraph 4.d. below.
- ii. If the Reactivation Process for Custom Product unit is in operation during any period of malfunction of its associated baghouse, the permittee shall determine compliance through maintenance of the records required by paragraph 5.c. below.

c. Use of Baghouse:

The permittee shall record the occurrence, duration, cause, and any corrective action taken for each incident when the Reactivation Process for Custom Product unit is in operation but the corresponding baghouse is not in operation.

3. Testing Requirements:

Pursuant to Regulations 401 KAR 59:005, Section 2(2) and 401 KAR 50:045, Section 1, performance testing using the Reference Methods specified in Regulation 401 KAR 50:015 shall be conducted as required by the Division.

4. Specific Monitoring Requirements:

The permittee shall monitor the following parameters:

- a. Total weight of custom product reactivated at the Reactivation Process for Custom Product unit each month.
- b. Total hours of operation of the Reactivation Process for Custom Product unit during the month.
- c. The permittee shall install, calibrate, maintain, and operate according to manufacturer's specification a monitoring device for the continuous measurement of the pressure loss of the gas stream through the Reactivation Process for Custom Product baghouse.
- d. The permittee shall visually inspect the Reactivation Process for Custom Product baghouse once per week during Reactivation Process for Custom Product operations. The weekly inspection shall consist of a visual inspection of the physical condition of the external unit, combined with the corresponding visual emissions observation as outlined in paragraph 5.c. below.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

53 (CAS-09) Reactivation Process for Custom Product

5. Specific Recordkeeping Requirements:

The permittee shall maintain records of the following information:

- a. Total weight of custom product reactivated at the Reactivation Process for Custom Product unit each month.
- b. Total hours of operation of the Reactivation Process for Custom Product unit during the month.
- c. During all periods of malfunction of the baghouse, if the Reactivation Process for Custom Product operations are in progress, a daily (calendar day) log of the following information shall be kept:
 - i. Whether any air emissions were visible from the baghouse stack;
 - ii. Whether the visible emissions were normal for the baghouse stack;
 - iii. The cause of any abnormal emissions and any corrective action taken.

If visible emissions are observed, the permittee shall perform a Method 9 reading as outlined in Appendix M to 40 CFR Part 51 for the Reactivation Process for Custom Product operations baghouse stack. The opacity observed shall be recorded in the daily log. The reading shall be performed by a representative of the permittee certified in Visible Emissions Evaluations. The permittee shall maintain a list of all individuals that are certified Visible Emissions Evaluators and the date of certification.

- d. For the Reactivation Process for Custom Product unit, a record of the following information:
 - i. A record of the weekly reading of the pressure loss of the gas stream through the baghouse as indicated by the continuous monitor.
 - ii. Findings of the weekly visual inspection and any corrective actions taken as a result.
- e. All maintenance activities performed at the baghouse.

6. Specific Reporting Requirements:

The permittee shall submit a report of the following information to the Division for Air Quality's Ashland office in accordance with section F. 7. and F. 8:

- a. Any exceedance of the particulate matter and opacity emission limitations within thirty days of when the exceedance is determined.
- b. The occurrence, duration, cause, and any corrective action taken for each incident when the Reactivation Process for Custom Product operations are in progress but the associated baghouse is not in operation.

7. Specific Control Equipment Operating Conditions: None.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

64 (M-07) Temporary Package Boiler
Rating: 27.0 mmBTU/hr
Fuel: Natural gas
Date of construction: 2002

APPLICABLE REGULATIONS:

- a. 401 KAR 59:015, *New indirect heat exchangers*, applies to the Temporary Package Boiler.
- b. 401 KAR 60:005, incorporating by reference 40 CFR 60, Subpart Dc, *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units*, applies to the Temporary Package Boiler.

1. Operating Limitations: Natural gas shall be the only type of fuel combusted in the package boiler.

2. Emission Limitations:

- a. Emissions of particulate matter shall not exceed 0.325 lb/mmBTU [401 KAR 59:015, Section 4(1)(c)].
- b. Emissions of sulfur dioxide shall not exceed 1.166 lb/mmBTU [401 KAR 59:015, Section 5(1)(c)].
- c. The opacity of visible emissions shall not exceed 20 percent [401 KAR 59:015, Section 4 (2)] except as provided below:
 - i. Pursuant to 401 KAR 59:015, Section 4(2)(b), a maximum of 40% opacity is permissible for not more than 6 consecutive minutes in any 60 consecutive minute period during cleaning the fire box or blowing soot.
 - ii. Pursuant to 401 KAR 59:015, Section 4(2)(c), the opacity standard does not apply during building a new fire for the period required to bring the boiler up to operating conditions, provided the method used is that recommended by the manufacturer and the time does not exceed the manufacturer's recommendations.
 - iii. Pursuant to 401 KAR 50:055, Section 2(4), the opacity standard does not apply during periods of startup and shutdown.

Compliance Demonstration Method:

Mass Emission Limits:

The Package Boiler shall be deemed to be in compliance with the applicable mass emission standards (lb/mmBTU) for particulate matter and sulfur dioxide while natural gas is the only fuel used.

Opacity Limit:

The Package Boiler shall be deemed to be in compliance with the applicable visible emission standard while natural gas is the only fuel used.

3. Testing Requirements:

Pursuant to Regulations 401 KAR 59:005, Section 2(2) and 401 KAR 50:045, Section 1, performance testing using the Reference Methods specified in Regulation 401 KAR 50:015 shall be conducted as required by the Division.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

64 (M-07) Temporary Package Boiler (Continued)

4. Specific Monitoring Requirements:

The permittee shall monitor the natural gas consumption of the Package boiler.

5. Specific Recordkeeping Requirements:

The permittee shall record and maintain records of the amount of natural gas combusted during each day [40 CFR 60.48c(g)].

6. Specific Reporting Requirements: None.

7. Specific Control Equipment Operating Conditions: Not applicable.

SECTION C - INSIGNIFICANT ACTIVITIES

The following listed activities have been determined to be insignificant activities for this source pursuant to 401 KAR 52:020, Section 6. While these activities are designated as insignificant the permittee must comply with the applicable regulation and some minimal level of periodic monitoring may be necessary.

| <u>Description</u> | <u>Generally Applicable Regulation</u> |
|--|--|
| 1. 46 (CAS-02) Furnace Feedtank and Dewatering Screw | None. |
| 2. 47 (CAS-03) Wastewater Storage Tank | None. |
| 3. 58 Six (6) Soda Ash Slurry Mix Tanks | None. |
| 4. 63 Two (2) Hydrochloric Acid Storage Tanks | None. |

SECTION D - SOURCE EMISSION LIMITATIONS AND TESTING REQUIREMENTS

1. As required by Section 1b of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26; compliance with annual emissions and processing limitations contained in this permit, shall be based on emissions and processing rates for any twelve (12) consecutive months.
2. Particulate matter, sulfur dioxide, and volatile organic compounds (VOC) emissions, as measured by methods referenced in 401 KAR 50:015, Section 1, shall not exceed the respective limitations specified herein.

SECTION E - SOURCE CONTROL EQUIPMENT REQUIREMENTS

Pursuant to 401 KAR 50:055, Section 2(5), at all times, including periods of startup, shutdown and malfunction, owners and operators shall, to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Division which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source.

SECTION F - MONITORING, RECORD KEEPING, AND REPORTING REQUIREMENTS

1. Pursuant to Section 1b (IV)1 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26, when continuing compliance is demonstrated by periodic testing or instrumental monitoring, the permittee shall compile records of required monitoring information that include:
 - a. Date, place as defined in this permit, and time of sampling or measurements;
 - b. Analyses performance dates;
 - c. Company or entity that performed analyses;
 - d. Analytical techniques or methods used;
 - e. Analyses results; and
 - f. Operating conditions during time of sampling or measurement.

2. Records of all required monitoring data and support information, including calibrations, maintenance records, and original strip chart recordings, and copies of all reports required by the Division for Air Quality, shall be retained by the permittee for a period of five years and shall be made available for inspection upon request by any duly authorized representative of the Division for Air Quality [Sections 1b(IV) 2 and 1a(8) of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26].

3. In accordance with the requirements of 401 KAR 52:020 Section 3(1)h the permittee shall allow authorized representatives of the Cabinet to perform the following during reasonable times:
 - a. Enter upon the premises to inspect any facility, equipment (including air pollution control equipment), practice, or operation;
 - b. To access and copy any records required by the permit;
 - c. Sample or monitor, at reasonable times, substances or parameters to assure compliance with the permit or any applicable requirements.Reasonable times are defined as during all hours of operation, during normal office hours; or during an emergency.

4. No person shall obstruct, hamper, or interfere with any Cabinet employee or authorized representative while in the process of carrying out official duties. Refusal of entry or access may constitute grounds for permit revocation and assessment of civil penalties.

5. Summary reports of any monitoring required by this permit, other than continuous emission or opacity monitors, shall be submitted to the Regional Office listed on the front of this permit at least every six (6) months during the life of this permit, unless otherwise stated in this permit. For emission units that were still under construction or which had not commenced operation at the end of the 6-month period covered by the report and are subject to monitoring requirements in this permit, the report shall indicate that no monitoring was performed during the previous six months because the emission unit was not in operation [Section 1b (V) 1 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26].

SECTION F - MONITORING, RECORD KEEPING, AND REPORTING REQUIREMENTS (CONTINUED)

6. The semi-annual reports are due by January 30th and July 30th of each year. Data from the continuous emission and opacity monitors shall be reported to the Technical Services Branch in accordance with the requirements of 401 KAR 59:005, General Provisions, Section 3(3). All reports shall be certified by a responsible official pursuant to 401 KAR 52:020 Section 23. All deviations from permit requirements shall be clearly identified in the reports.
7. In accordance with the provisions of 401 KAR 50:055, Section 1 the owner or operator shall notify the Regional Office listed on the front of this permit concerning startups, shutdowns, or malfunctions as follows:
 - a. When emissions during any planned shutdowns and ensuing startups will exceed the standards notification shall be made no later than three (3) days before the planned shutdown, or immediately following the decision to shut down, if the shutdown is due to events which could not have been foreseen three (3) days before the shutdown.
 - b. When emissions due to malfunctions, unplanned shutdowns and ensuing startups are or may be in excess of the standards, notification shall be made as promptly as possible by telephone (or other electronic media) and shall submit written notice upon request.
8. The owner or operator shall report emission related exceedances from permit requirements including those attributed to upset conditions (other than emission exceedances covered by Section F.7. above) to the Regional Office listed on the front of this permit within 30 days. Other deviations from permit requirements shall be included in the semiannual report required by Section F.6 [Section 1b (V) 3, 4. of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26].
9. Pursuant to 401 KAR 52:020, Permits, Section 21, the permittee shall annually certify compliance with the terms and conditions contained in this permit, by completing and returning a Compliance Certification Form (DEP 7007CC) (or an alternative approved by the regional office) to the Regional Office listed on the front of this permit and the U.S. EPA in accordance with the following requirements:
 - a. Identification of the term or condition;
 - b. Compliance status of each term or condition of the permit;
 - c. Whether compliance was continuous or intermittent;
 - d. The method used for determining the compliance status for the source, currently and over the reporting period.
 - e. For an emissions unit that was still under construction or which has not commenced operation at the end of the 12-month period covered by the annual compliance certification, the permittee shall indicate that the unit is under construction and that compliance with any applicable requirements will be demonstrated within the timeframes specified in the permit.

SECTION F - MONITORING, RECORD KEEPING, AND REPORTING REQUIREMENTS (CONTINUED)

- f. The certification shall be postmarked by January 30th of each year. Annual compliance certifications should be mailed to the following addresses:

Division for Air Quality
Ashland Regional Office
1550 Wolohan Dr., Suite 1
Ashland, KY 41102-8942

U.S. EPA Region IV
Air Enforcement Branch
Atlanta Federal Center
61 Forsyth St.
Atlanta, GA 30303-8960

Division for Air Quality
Central Files
803 Schenkel Lane
Frankfort, KY 40601

10. In accordance with 401 KAR 52:020, Section 22, the permittee shall provide the Division with all information necessary to determine its subject emissions within thirty (30) days of the date the KYEIS emission survey is mailed to the permittee.
11. Pursuant to Section VII (3) of the policy manual of the Division for Air Quality as referenced in 401 KAR 50:016, Section 1(1), results of performance test(s) required by the permit shall be submitted to the Division by the source or its representative within forty-five days after the completion of the fieldwork.
12. For the purposes of this permit, in accordance with the provisions of Regulation 40 CFR 63 Subpart A, a continuous recording device is defined as one that capable of recording a minimum of one data sample every 15 minutes. Data from continuous recording devices unless otherwise specified in the relevant standard, shall be reduced to 1-hour averages computed from four or more data points equally spaced over each 1-hour period, except during periods when calibration, quality assurance, or maintenance activities are being performed.

SECTION G - GENERAL PROVISIONS

(a) General Compliance Requirements

1. The permittee shall comply with all conditions of this permit. Noncompliance shall be a violation of 401 KAR 52:020 and of the Clean Air Act and is grounds for enforcement action including but not limited to termination, revocation and reissuance, revision or denial of a permit [Section 1a, 3 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020 Section 26].
2. The filing of a request by the permittee for any permit revision, revocation, reissuance, or termination, or of a notification of a planned change or anticipated noncompliance, shall not stay any permit condition [Section 1a, 6 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26].
3. This permit may be revised, revoked, reopened and reissued, or terminated for cause in accordance with 401 KAR 52:020, Section 19. The permit will be reopened for cause and revised accordingly under the following circumstances:
 - a. If additional applicable requirements become applicable to the source and the remaining permit term is three (3) years or longer. In this case, the reopening shall be completed no later than eighteen (18) months after promulgation of the applicable requirement. A reopening shall not be required if compliance with the applicable requirement is not required until after the date on which the permit is due to expire, unless this permit or any of its terms and conditions have been extended pursuant to 401 KAR 52:020, Section 12;
 - b. The Cabinet or the U. S. EPA determines that the permit must be revised or revoked to assure compliance with the applicable requirements;
 - c. The Cabinet or the U. S. EPA determines that the permit contains a material mistake or that inaccurate statements were made in establishing the emissions standards or other terms or conditions of the permit;

Proceedings to reopen and reissue a permit shall follow the same procedures as apply to initial permit issuance and shall affect only those parts of the permit for which cause to reopen exists. Reopenings shall be made as expeditiously as practicable. Reopenings shall not be initiated before a notice of intent to reopen is provided to the source by the Division, at least thirty (30) days in advance of the date the permit is to be reopened, except that the Division may provide a shorter time period in the case of an emergency.

4. The permittee shall furnish information upon request of the Cabinet to determine if cause exists for modifying, revoking and reissuing, or terminating the permit; or compliance with the conditions of this permit [Section 1a, 7,8 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26].
5. The permittee, upon becoming aware that any relevant facts were omitted or incorrect information was submitted in the permit application, shall promptly submit such facts or corrected information to the permitting authority [401 KAR 52:020, Section 7(1)].

SECTION G - GENERAL PROVISIONS (CONTINUED)

6. Any condition or portion of this permit which becomes suspended or is ruled invalid as a result of any legal or other action shall not invalidate any other portion or condition of this permit [Section 1a, 14 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26].
7. The permittee shall not use as a defense in an enforcement action the contention that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance [Section 1a, 4 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26].
8. Except for requirements identified in this permit as state-origin requirements, all terms and conditions shall be enforceable by the United States Environmental Protection Agency and citizens of the United States [Section 1a, 15 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26].
9. This permit shall be subject to suspension if the permittee fails to pay all emissions fees within 90 days after the date of notice as specified in 401 KAR 50:038, Section 3(6) [Section 1a, 10 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26].
10. Nothing in this permit shall alter or affect the liability of the permittee for any violation of applicable requirements prior to or at the time of permit issuance [401 KAR 52:020, Section 11(3)(b)].
11. This permit does not convey property rights or exclusive privileges [Section 1a, 9 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26].
12. Issuance of this permit does not relieve the permittee from the responsibility of obtaining any other permits, licenses, or approvals required by the Kentucky Cabinet for Natural Resources and Environmental Protection or any other federal, state, or local agency.
13. Nothing in this permit shall alter or affect the authority of U.S. EPA to obtain information pursuant to Federal Statute 42 USC 7414, Inspections, monitoring, and entry [401 KAR 52:020, Section 11(3)(d)].
14. Nothing in this permit shall alter or affect the authority of U.S. EPA to impose emergency orders pursuant to Federal Statute 42 USC 7603, Emergency orders [401 KAR 52:020, Section 11(3)(a)].
15. This permit consolidates the authority of any previously issued PSD, NSR, or Synthetic Minor source preconstruction permit terms and conditions for various emission units and incorporates all requirements of those existing permits into one single permit for this source.

SECTION G - GENERAL PROVISIONS (CONTINUED)

16. Pursuant to 401 KAR 52:020, Section 11, a permit shield shall not protect the owner or operator from enforcement actions for violating an applicable requirement prior to or at the time of issuance. Compliance with the conditions of a permit shall be considered compliance with:
 - (a) Applicable requirements that are included and specifically identified in the permit and
 - (b) Non-applicable requirements expressly identified in this permit.

- (b) Permit Expiration and Reapplication Requirements
 1. This permit shall remain in effect for a fixed term of five (5) years following the original date of issue. Permit expiration shall terminate the source's right to operate unless a timely and complete renewal application has been submitted to the Division at least six months prior to the expiration date of the permit. Upon a timely and complete submittal, the authorization to operate within the terms and conditions of this permit, including any permit shield, shall remain in effect beyond the expiration date, until the renewal permit is issued or denied by the Division [401 KAR 52:020, Section 12].
 2. The authority to operate granted shall cease to apply if the source fails to submit additional information requested by the Division after the completeness determination has been made on any application, by whatever deadline the Division sets [401 KAR 52:02+0 Section 8(2)].

- (c) Permit Revisions
 1. A minor permit revision procedure may be used for permit revisions involving the use of economic incentive, marketable permit, emission trading, and other similar approaches, to the extent that these minor permit revision procedures are explicitly provided for in the SIP or in applicable requirements and meet the relevant requirements of 401 KAR 52:020, Section 14(2).
 2. This permit is not transferable by the permittee. Future owners and operators shall obtain a new permit from the Division for Air Quality. The new permit may be processed as an administrative amendment if no other change in this permit is necessary, and provided that a written agreement containing a specific date for transfer of permit responsibility coverage and liability between the current and new permittee has been submitted to the permitting authority within ten (10) days following the transfer.

- (d) Construction, Start-Up, and Initial Compliance Demonstration Requirements

Pursuant to a duly submitted application the Kentucky Division for Air Quality hereby authorizes the construction of the equipment described herein in accordance with the terms and conditions of this permit.

V-00-015: (EP #11) *B-Line Bakers*

V-00-015, Revision 1: (EP #64) *Temporary Package Boiler*

SECTION G - GENERAL PROVISIONS (CONTINUED)

V-00-015, Revision 2: (EP #14) Scrubber for *B-Line Activator Furnace #3*
(EP #21) Scrubber for *C-Line Activator Furnaces #5 and #6*

1. Construction of any process and/or air pollution control equipment authorized by this permit shall be conducted and completed only in compliance with the conditions of this permit.
2. Within thirty (30) days following commencement of construction and within fifteen (15) days following start-up and attainment of the maximum production rate specified in the permit application, or within fifteen (15) days following the issuance date of this permit, whichever is later, the permittee shall furnish to the Regional Office listed on the front of this permit in writing, with a copy to the Division's Frankfort Central Office, notification of the following:
 - a. The date when construction commenced.
 - b. The date of start-up of the affected facilities listed in this permit.
 - c. The date when the maximum production rate specified in the permit application was achieved.
3. Pursuant to 401 KAR 52:020, Section 3(2), unless construction is commenced within eighteen (18) months after the permit is issued, or begins but is discontinued for a period of eighteen (18) months or is not completed within a reasonable timeframe then the construction and operating authority granted by this permit for those affected facilities for which construction was not completed shall immediately become invalid. Upon written request, the Cabinet may extend these time periods if the source shows good cause.
4. For those affected facilities for which construction is authorized by this permit, a source shall be allowed to construct with the proposed permit. Operational or final permit approval is not granted by this permit until compliance with the applicable standards specified herein has been demonstrated pursuant to 401 KAR 50:055. If compliance is not demonstrated within the prescribed timeframe provided in 401 KAR 50:055, the source shall operate thereafter only for the purpose of demonstrating compliance, unless otherwise authorized by Section I of this permit or order of the Cabinet.
5. This permit shall allow time for the initial start-up, operation, and compliance demonstration of the affected facilities listed herein. However, within sixty (60) days after achieving the maximum production rate at which the affected facilities will be operated but not later than 180 days after initial start-up of such facilities, the permittee shall conduct a performance demonstration on the affected facilities in accordance with 401 KAR 50:055, General compliance requirements. These performance tests must also be conducted in accordance with General Provisions G(d)7 of this permit and the permittee must furnish to the Division for Air Quality's Frankfort Central Office a written report of the results of such performance test
6. Terms and conditions in this permit established pursuant to the construction authority of 401KAR 51:017 or 401 KAR 51:052 shall not expire.

SECTION G - GENERAL PROVISIONS (CONTINUED)

7. Pursuant to Section VII 2.(1) of the policy manual of the Division for Air Quality as referenced by 401 KAR 50:016, Section 1.(1), at least one month prior to the date of the required performance test, the permittee shall complete and return a Compliance Test Protocol (Form DEP 6027) to the Division's Frankfort Central Office. Pursuant to 401 KAR 50:045, Section 5, the Division shall be notified of the actual test date at least ten (10) days prior to the test.
8. Pursuant to Section VII 1.(2 and 3) of the policy manual of the Division for Air Quality as referenced by 401 KAR 50:016, Section 1.(1), if a demonstration of compliance, through performance testing was made at a production rate less than the maximum specified in the application form, then the permittee is only authorized to operate at a rate that is not greater than 110% of the rate demonstrated during performance testing. If and when the facility is capable of operation at the rate specified in the application, compliance must be demonstrated at the new production rate if required by the Division.

(e) Acid Rain Program Requirements

If an applicable requirement of Federal Statute 42 USC 7401 through 7671q (the Clean Air Act) is more stringent than an applicable requirement promulgated pursuant to Federal Statute 42 USC 7651 through 7651o (Title IV of the Act), both provisions shall apply, and both shall be state and federally enforceable.

(f) Emergency Provisions

1. Pursuant to 401 KAR 52:020 Section 24(1), an emergency shall constitute an affirmative defense to an action brought for the noncompliance with the technology-based emission limitations if the permittee demonstrates through properly signed contemporaneous operating logs or relevant evidence that:
 - a. An emergency occurred and the permittee can identify the cause of the emergency;
 - b. The permitted facility was at the time being properly operated;
 - c. During an emergency, the permittee took all reasonable steps to minimize levels of emissions that exceeded the emissions standards or other requirements in the permit; and
 - d. Pursuant to 401 KAR 52:020, 401 KAR 50:055, and KRS 224.01-400, the permittee notified the Division as promptly as possible and submitted written notice of the emergency to the Division when emission limitations were exceeded due to an emergency. The notice shall include a description of the emergency, steps taken to mitigate emissions, and corrective actions taken.
 - e. This requirement does not relieve the source of other local, state or federal notification requirements.
2. Emergency conditions listed in General Condition (f)1 above are in addition to any emergency or upset provision(s) contained in an applicable requirement [401 KAR 52:020, Section 24(3)].
3. In an enforcement proceeding, the permittee seeking to establish the occurrence of an emergency shall have the burden of proof [401 KAR 52:020, Section 24(2)].

SECTION G - GENERAL PROVISIONS (CONTINUED)

(g) Risk Management Provisions

1. The permittee shall comply with all applicable requirements of 401 KAR Chapter 68, Chemical Accident Prevention, which incorporates by reference 40 CFR Part 68, Risk Management Plan provisions. If required, the permittee shall comply with the Risk Management Program and submit a Risk Management Plan to:

RMP Reporting Center
P.O. Box 3346
Merrifield, VA, 22116-3346

2. If requested, submit additional relevant information to the Division or the U.S. EPA.

(h) Ozone depleting substances

1. The permittee shall comply with the standards for recycling and emissions reduction pursuant to 40 CFR 82, Subpart F, except as provided for Motor Vehicle Air Conditioners (MVACs) in Subpart B:
 - a. Persons opening appliances for maintenance, service, repair, or disposal shall comply with the required practices contained in 40 CFR 82.156.
 - b. Equipment used during the maintenance, service, repair, or disposal of appliances shall comply with the standards for recycling and recovery equipment contained in 40 CFR 82.158.
 - c. Persons performing maintenance, service, repair, or disposal of appliances shall be certified by an approved technician certification program pursuant to 40 CFR 82.161.
 - d. Persons disposing of small appliances, MVACs, and MVAC-like appliances (as defined at 40 CFR 82.152) shall comply with the recordkeeping requirements pursuant to 40 CFR 82.166
 - e. Persons owning commercial or industrial process refrigeration equipment shall comply with the leak repair requirements pursuant to 40 CFR 82.156.
 - f. Owners/operators of appliances normally containing 50 or more pounds of refrigerant shall keep records of refrigerant purchased and added to such appliances pursuant to 40 CFR 82.166.
2. If the permittee performs service on motor (fleet) vehicle air conditioners containing ozone-depleting substances, the source shall comply with all applicable requirements as specified in 40 CFR 82, Subpart B, *Service of Motor Vehicle Air Conditioners*.

SECTION H - ALTERNATE OPERATING SCENARIOS

Not Applicable

SECTION I - COMPLIANCE SCHEDULE

This section contains compliance schedule requirements as specified by Section 1c of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26. Progress reports on this schedule must be submitted at least semiannually, or at more frequent intervals if required in the specific conditions outlined below. Reports shall include the following items: (a) Dates scheduled for achieving each milestone, and the actual date that compliance is achieved; and (b) An explanation of why dates in /the schedule of compliance were not or will not be met, and preventive or corrective measures adopted to ensure that compliance with future items will be brought back on schedule. Compliance certifications shall be mailed to the addresses listed in General Condition F.9

1. Within 30 days of issuance of the proposed permit, the permittee shall submit a compliance schedule for the implementation of any new monitoring, recordkeeping, and reporting requirements included herein for emission points already in operation. The compliance schedule shall provide justification for the planned implementation of any requirements that will exceed 60 days.
2. No later than 60 days after the installation of the wet scrubbers on the B-Line Activator (Furnace #3) and the C-Line Activators (Furnaces #5 & #6), the permittee shall schedule stack tests for sulfur dioxide and particulate matter on the B-Line Activator (Furnace #3) and the C-Line Activators (Furnaces #5 & #6). No later than 45 days after the tests are conducted, the permittee shall submit to the Division, an accurate and comprehensive report on the results of the stack tests conducted on the B-Line Activator (Furnace #3) and the C-Line Activators (Furnaces #5 & #6).

Appendix I

Calgon Carbon Corporation,
Catlettsburg, Kentucky,
Permit Statement of Basis,
February 23, 2004

Commonwealth of Kentucky
Division for Air Quality
PERMIT STATEMENT OF BASIS

Title V Proposed Permit V-00-015, Revision 2

CALGON CARBON CORPORATION

CATLETTSBURG, KENTUCKY 41129

February 23, 2004

REVIEWER: JOSHUA J. HIGGINS

Plant I.D. # 21-019-00014

Application Log # 55679 / 55758 / 56097

SOURCE DESCRIPTION:

Calgon Carbon Corporation operates a primary activated carbon and recycle carbon regeneration plant in Catlettsburg, Kentucky. Activated carbon is produced from high-grade bituminous coal. Coal is received and stored in silos, ground to fine powder, mixed with pitch, and pelletized to form a briquette. This briquette is crushed and screened and the carbon is baked to remove volatiles in kilns. After baking the carbon is 'activated' in furnaces. The activated carbon is then cooled and transferred to screening and packaging operations. The plant also produces several specialty products including acid washed carbon, fine carbon, and impregnated carbon products.

Fine carbon is produced using a roll mill and screens while the acid-washed carbon is produced by washing sized carbon with a hydrogen chloride solution. This process removes ash and iron making the carbon suitable for food-grade applications. Residual acid from the process is neutralized with soda ash and the carbon is dried in a direct-fired kiln.

The carbon regeneration plant received spent carbon from end-users of activated carbon and desorbs the adsorbed materials, thereby regenerating the carbon for reuse. This plant consists of spent carbon storage vessels, washers to remove sand, dewatering steps, and a nine-hearth reactivation furnace. The top two hearths of the furnace serve as an afterburner that discharges into a spray dryer scrubber. Sodium carbonate is used in the spray dryer to remove acidic gases, primarily hydrogen chloride and sulfur dioxide. Final particle collection is performed by a fabric filter.

CREDIBLE EVIDENCE:

This permit contains provisions which require that specific test methods, monitoring or recordkeeping be used as a demonstration of compliance with permit limits. On February 24, 1997, the U.S. EPA promulgated revisions to the following federal regulations: 40 CFR Part 51, Sec. 51.212; 40 CFR Part 52, Sec. 52.12; 40 CFR Part 52, Sec. 52.30; 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12, that allow the use of credible evidence to establish compliance with applicable requirements. At the issuance of this permit, Kentucky has not incorporated these provisions in its air quality regulations.

APPLICATION COMMENTS:

- I. Initial Issuance, V-00-015, Log # E983, F864, G494
- II. Minor Revision, V-00-015, Revision 1, Log # 55421
- III. Significant Revision & 502(b)10, V-00-015, Revision 2, Log # 55679 / 55758 / 56097

COMMENTS:

a. Types of control and efficiency:

There are numerous control devices at the Calgon facility. These can be broadly classified into the following categories:

- i. Cold sources - these are mainly material handling sources and are typically controlled by a baghouse with an efficiency of 99%.
- ii. Hot sources - this category includes the bakers and activators that are equipped with wet scrubbers for the control of particulate matter (85%) and sulfur dioxide (75%). Afterburners on each of the bakers reduce VOC emissions by 99% prior to discharge to the atmosphere.
- iii. Reactivation Furnace - the reactivation furnace is equipped with a dry scrubber for sulfur dioxide emissions (85%), a baghouse for particulate emissions (99%), an afterburner and carbon adsorber for VOC emissions (98%).

b. Emission factors and their source:

A combination of AP-42 emission factors, material balance, and stack test data was used to estimate emissions, see application for details.

c. Applicable regulations:

The following regulations apply to this facility:

- i. 401 KAR 61:020, *Existing Process Operations*, applies to each affected facility that emits emissions of particulate matter and was constructed prior to July 2, 1975.
- ii. 401 KAR 59:010, *New Process Operations*, applies to each affected facility that emits emissions of particulate matter and was constructed after July 2, 1975.
- iii. 401 KAR 50:012, General Application, applies to each affected facility that emits emissions of volatile organic compounds (VOC). Boyd County was previously designated as non-attainment for ozone and major VOC sources in the county were required to apply control technology which is 'reasonable and available' (RACT) to reduce emissions of VOC.
- iv. 401 KAR 57:002, which incorporates by reference federal regulation 40 CFR 61 Subpart FF, *National emission standard for benzene waste operations*, applies to the Carbon Reactivation Process.

d. Anything unusual about the:

Emission point number and description -

With this permit action, the permittee is authorized to increase the maximum processing rates at the B-Line Bakers (EP# 11) and the B-Line Baker to Activator Elevator (EP# 13) to 7.8 tons per hour and 68,328 tons per year. Emissions are not expected to increase beyond currently permitted levels as a result of this processing rate increase. The permittee is required to perform stack tests on the B-Line Bakers (EP# 11) for particulate matter and sulfur dioxide and the B-Line Baker to Activator Elevators (EP# 13) for particulate matter upon completion of the processing rate increase. Regulations 59:010 and 61:020 respectively continue to apply to these facilities.

EMISSION AND OPERATING CAPS DESCRIPTION:

The following emission points that were permitted in the past are subject to federally-enforceable synthetic minor limits:

| Emission Point | Description | Pollutant | Synthetic Minor Limit (tpy) |
|----------------|---|---------------------|-----------------------------|
| 09 | B-Line Coal & Pitch Preparation Area | PM/PM ₁₀ | 3.29 |
| 11 | B-Line Bakers | PM/PM ₁₀ | 21.46 |
| | | SO ₂ | 39.00 |
| 24 | Package Boiler | PM/PM ₁₀ | 0.3441 lb/mmBTU |
| 25 | Acid Wash Transfer & Packaging System | PM/PM ₁₀ | 5.26 |
| 26 | Acid Wash Process | PM/PM ₁₀ | 7.88 |
| 29 | D-Line Coal & Pitch Preparation Area | PM/PM ₁₀ | 61.06 |
| 31 | D-Line Bakers | SO ₂ | 65.7 |
| 34 | D-Line Activator Furnaces | PM/PM ₁₀ | 65.7 |
| | | SO ₂ | 65.7 |
| 37 | E-Line Coal & Pitch Preparation Area | PM/PM ₁₀ | 61.06 |
| 42 | E-Line Activator Furnaces | PM/PM ₁₀ | 60.88 |
| 43 | E-Line Packaging Operations | PM/PM ₁₀ | 49.39 |
| 45 | Reactivation Furnace | PM/PM ₁₀ | 7.01 |
| | | SO ₂ | 21.04 |
| | | VOC | 1.80 |
| | | NO _x | 26.90 |
| 50 | Pulverizer Collection System | PM/PM ₁₀ | 35.95 |
| 52 | Activated Carbon Fine Mesh Production | PM/PM ₁₀ | 12.42 |
| 53 | Reactivation Process for Custom Product | PM/PM ₁₀ | 2.48 |
| | | | |

Each of the emission points listed above that is a source of particulate emissions is also subject to particulate matter standards under state ‘*process operations*’ regulations (401 KAR 59:010 for sources constructed after July 2, 1975 and 61:020 for sources constructed prior to July 2, 1975). These regulations prescribe hourly particulate matter limits based on the ‘*process weight rate*’.

In some instances, when the emission points listed in the table above were permitted as synthetic minor sources, the annual synthetic minor limit was pro-rated to an hourly limit that supplanted the hourly limit prescribed by 59:010 or 61:020. In other instances, the synthetic minor limit was not pro-rated to an hourly standard.

With this permit action, all previous synthetic minor limits have been carried over as annual limits only. In those instances where the synthetic minor limit was pro-rated to an hourly standard, the synthetic minor hourly limit has been replaced with the particulate matter limit prescribed by 59:010 or 61:020. This was done to ensure consistency within the Title V permit.

PUBLIC AND U.S. EPA REVIEW:

On June 8, 2000 the public notice on availability of the draft/proposed permit and supporting material for comments by persons affected by the plant was published in *The Daily Independent* in Ashland, Kentucky. The public comment period expired 30 days from the date of publication. During this time no comments were received from the general public.

Comments were received from Calgon Carbon Corporation on June 22, 2000. Attachment A to this section lists the comments received and the Division's response to each comment. Minor changes were made to the permit as a result of the comments, however, in no case were any emission standards, or any monitoring, recordkeeping or reporting requirements relaxed. Please see Attachment A for a detailed explanation of the changes made to the permit.

Since comments were received from the facility during the public comment period, the permit now being issued is a proposed permit. U.S. EPA has 45 days from the date of issuance of the proposed permit to comment on it. If no comments are received from U.S. EPA during this period, the proposed permit shall become the final permit.

ATTACHMENT A TO SECTION I

Response to Comments

Comments and Suggested Revisions on the Draft Title V Permit submitted by Jeff McKinney, Calgon Carbon Corporation.

1. On the third page of the Permit Application Summary Form, the table included under the heading “Emission and Operating Caps Description” incorrectly shows the pound per hour synthetic minor limits as ton per year limits for Emission Point 45, Reactivation Furnace.

Division’s response: The Division concurs with the comment and has revised the application summary. In further review the Division determined that the Statement of Basis was also incorrect and revised it as well.

2. On page 2 of the Permit Statement of Basis, Comment d., EP #13, “b-Line Baker to Activator Elevator” is referenced as a separate emission point. EP #13 has been incorporated in to EP #11 as shown on Page 11 of the Draft Permit. Stack testing can not be performed separately for the elevator.

Division’s response: The Division concurs with the comment and has revised the Statement of Basis.

3. On Page 2 of the Draft Permit, “Index of Emission Points Listed in Section B”, EP #11 should include “D-Line Baker to Activator Elevator” as a referenced point.

Division’s response: The Division believes that the source was referring to EP #31 not EP #11 based on the following comment. The Division concurs with the comment and has revised the “Index of Emission Points Listed in Section B” in the permit.

4. On Page 40 of the Draft Permit, the source listing for EP #31 should include “D-Line Baker to Activator Elevator.”

Division’s response: The Division concurs with the comment and has revised the permit.

5. On Page 72, 1.d., and Page 74, 2.i. and 2.m., these requirements as contained in Subpart FF, National Emission Standard for Benzene Waste Operations, are conditionally-applicable only. As per 40 CFR 61.342(a), an operator is exempt from these requirements when it is demonstrated that the total annual benzene quantity from facility waste does not exceed 10 megagrams per year. Although Calgon Carbon does not anticipate difficulty in complying with these requirements on a full-time basis, the requirements should not be considered enforceable on a full-time basis in terms of recordkeeping and reporting demonstrations. The following additional language is suggested for clarification, as shown in the modified Draft:

“In accordance with the provisions of 40 CFR 61.342(a), compliance with the Operating Limitations (1.d., 2.1., 2.m.) shall not be required when the permittee demonstrates that the total annual benzene quantity from facility waste is less than 10 megagrams per year (10 Mg/yr).”

Division’s response: The Division concurs with the comment and has revised the permit as suggested by the source.

6. On Pages 105 and 106 of the Draft Permit, EP #13 is referenced as a separate emission point. EP #13 has been incorporated in to EP #11.

Division’s response: The Division concurs with the comment and has revised the permit.

II. Minor revision, V-00-015, Revision 1, Log # 55421

COMMENTS ON LOG # 55421:

Calgon Carbon Corporation is applying to install a 27-mmBTU/hr natural gas fired boiler with low NO_x burners and flue gas recirculation. The installation of this boiler is needed to supplement steam generation in the plant. The additional steam generation capacity was necessitated by a malfunction in the plant soft water production system that allowed hard water to be conveyed to the existing permitted boilers. Calgon is installing the temporary boiler in anticipation of possible loss of steam generation capacity with the impending failure and subsequent repair of the existing boilers.

Summary of changes to the permit:

- This permit is being revised using the new permit template in order to update the “boiler plate language” in sections A, C, D, E, F, and G. As a result, one reference to paragraph **F. 5** for EP 45 was updated to reference paragraph **F. 7**.
- **Section B, (64) (M-07) Temporary Package Boiler.**
All limitations, requirements, and conditions associated with the addition of the boiler were added to Section B of the permit as Emission Point 64.

Applicable Regulations:

401 KAR 59:015, *New Indirect Heat Exchangers* applies to the operation of the package boiler.

PUBLIC AND U.S. EPA REVIEW:

Public review is not required for a minor revision.

The proposed minor revision and all supporting material were made available to U.S. EPA, Region IV for review. The 45-day EPA review period began on January 29, 2003. The proposed permit shall become the final permit unless the U.S. EPA files an objection pursuant to Regulation 401 KAR 52:100, Section 10.

COMMENTS ON LOG # 55679 / 55758:

Calgon Carbon Corporation, Big Sandy Facility is located in a portion of Boyd County that has been designated SO₂ non-attainment, however the Division has been trying to re-designate that portion of the county as attainment. This facility was identified in an U.S. EPA, Region IV emissions modeling analysis as one of the most significant SO₂ emitters in the area. Calgon, through the use of Trinity Consultants, updated the American Meteorological Society (AMS) / U.S. EPA Regulatory Model (AERMOD) with Plume Rise Model Enhancements (PRIME) analysis in order to address proposed changes to their operations at the Big Sandy Facility and demonstrate an SO₂ attainment status for Boyd County. This revision incorporates the modeled parameters into the Title V permit.

Installing wet scrubbers on EP 14 and 21 was included among the modeled parameters, and new application forms to install the scrubbers were included as additional information to application Log # 55679. This scrubber information supercedes the original application for installing scrubbers on EP 14 and 21 received December 13, 2001 (Log # 54342). The old application was combined with Log # 55679.

This revision also incorporates two requested 502(b)10 changes to increase the permitted operating rates at emission point (EP) 31 (Log # 56097) and EP 53 (Log #55758). The applications contained calculations, based on stack sampling emission rates from September 2003 and January 2001, respectively, that indicated that the source would still be below the allowable emission rates at the increased operating rates. Since DAQ personnel witnessed both stack tests, and the source was operating at its maximum permitted capacity at the time of the test, the source's calculations were accepted.

Additionally, this revision includes changes to the particulate matter emission limits, the mass and opacity compliance demonstration methods, and the monitoring, recordkeeping, and reporting requirements for many emission points subject to either 401 KAR 59:010 or 401 KAR 61:020. These changes affected emission points 08, 09, 11, 14, 15, 21, 22, 25, 26, 27, 29, 31, 34, 35, 37, 39, 42, 43, 44, 45, 48, 49, 50, 51, 52, and 53. The actual changes at each point are listed below.

Also, due to recent typographical errors included with notices from the source to process spent carbon that contain chloride in concentrations greater than 4.0% by weight, Specific Recordkeeping Requirement 5.n.3.(iii) for EP 45 was revised. The revision will require the source to include calculations with their notice to process the carbon that will demonstrate that HCl emissions will not exceed 2.55 lb/hr. By doing the calculation, the source will be double-checking their own work before submitting the notice.

Lastly, any typographical or formatting errors found were corrected.

Summary of changes to the permit:

Section B, EP 08 (A-10) A-Line Packaging Operations.

- The particulate matter emission limit in paragraph 2.a. was changed from 6.52 lb/hr to $E = 4.10P^{0.67}$, which is the process weight-rate equation from 401 KAR 61:020. It appears as though the fixed pound-per-hour limits used in the previous versions of the permit were derived from entering the maximum ton-per-hour operating limit into the equation. However, use of the equation, instead of the fixed pound-per-hour limit, as the emission limit will provide a more accurate emission limit for periods of operation below the maximum ton-per-hour operating limit.

Section B, EP 08 (A-10) A-Line Packaging Operations. (continued)

- Compliance Demonstration Method 2.a. The Mass Emission Standard equation was revised to use the hourly throughput rate determined in operating limitation 1.d. This value is also the value of “P” in the process weight-rate equation.
- Monitoring requirement 4.d. was revised to specify that the weekly visual inspection of the control device shall occur during operation of the associated equipment.
- Recordkeeping requirement 5.c. was revised to require a daily Method 9 reading during packaging operations if there is a malfunction of the control device and visible emissions.
- The specific reporting requirements were added.

Section B, EP 09 (B-0) B-Line Coal & Pitch Preparation Area.

- The particulate matter emission limit in paragraph 2.a. was changed from 14.02 lb/hr to $E = 3.59P^{0.62}$, which is the process weight-rate equation from 401 KAR 59:010.
- Compliance Demonstration Method 2.a. The Mass Emission Standard equation was revised as mentioned above for EP 08.
- The monitoring, recordkeeping, and reporting requirements were revised as mentioned above for EP 08.

Section B, EP 11 (B-02) B-Line Bakers.

- **Modeled revision:** This point was included in the list of proposed changes to source operations, however the modeled source emission rate matches the current SO₂ emission limit (See Table 1 of the modeling portion of the application). No permit change required.
- The particulate matter emission limit in paragraph 2.a. was changed from 12.83 lb/hr to $E = 3.59P^{0.62}$, which is the process weight-rate equation from 401 KAR 59:010.
- Compliance Demonstration Method 2.a. The Mass Emission Standard equation was revised as mentioned above for EP 08.
- The monitoring, recordkeeping, and reporting requirements were revised as mentioned above for EP 08.

Section B, EP 12 (B-08, 09) B-Line Baker Heater.

- **Modeled revision:** Reference to 401 KAR 53:005 was added in order to enforce NAAQS.
- **Modeled revision:** The emission limitation in paragraph 2.b. was changed from 1.33 lb/mmBTU to 0.0853 lb/mmBTU.

Section B, EP 14 (B-04) B-Line Activator.

- **Modeled revision:** The scrubber for PM/SO₂ was added to the control description.
- **Modeled revision:** Reference to 401 KAR 53:005 was added in order to enforce NAAQS and the use of the scrubber.
- The divisor in the hourly throughput rate equation in Compliance Demonstration Method 1.d. was corrected from referencing hours of “loading” to hours of “operation.”
- The particulate matter emission limit in paragraph 2.a. was changed from 5.38 lb/hr to $E = 4.10P^{0.67}$, which is the process weight-rate equation from 401 KAR 61:020.
- **Modeled revision:** The following emission limitation in paragraph 2.c. was added: “Emissions of SO₂ from the B-Line Activator shall not exceed 2.88 lbs/hr and 12.6 tons during any consecutive 12 months [401 KAR 53:005, and Permit V-00-015 (Revision 2)].”
- **Modeled revision:** Compliance Demonstration Method 2.a. The Mass Emission Standard equation was revised to include SO₂.

Section B, EP 14 (B-04) B-Line Activator. (continued)

- Compliance Demonstration Method 2.a. The Mass Emission Standard equation was revised as mentioned above for EP 08.
- Compliance Demonstration Method 2.b. The opacity compliance demonstration was revised from “No compliance demonstration is necessary” to none being necessary during normal operation of the control device, but that during control device malfunctions compliance is determined through maintaining visual emissions records.
- **Modeled revision:** Monitoring, recordkeeping, reporting, and specific control equipment operating conditions were updated to reflect the requirements of adding the wet scrubber.

Section B, EP 15 (B-06) B-Line Packaging Operations.

- The particulate matter emission limit in paragraph 2.a. was changed from 6.52 lb/hr to $E = 4.10P^{0.67}$, which is the process weight-rate equation from 401 KAR 61:020.
- Compliance Demonstration Method 2.a. The Mass Emission Standard equation was revised as mentioned above for EP 08.
- The monitoring, recordkeeping, and reporting requirements were revised as mentioned above for EP 08.
- Specific recordkeeping requirement 5.f. was added.

Section B, EP 21 (C-04, 05) C-Line Activators.

- **Modeled revision:** The scrubber for PM/SO₂ was added to the control description.
- **Modeled revision:** Reference to 401 KAR 53:005 was added in order to enforce NAAQS and the use of the scrubber.
- The divisor in the hourly throughput rate equation in Compliance Demonstration Method 1.d. was corrected from referencing hours of “loading” to hours of “operation.”
- The particulate matter emission limit in paragraph 2.a. was changed from 6.52 lb/hr to $E = 4.10P^{0.67}$, which is the process weight-rate equation from 401 KAR 61:020.
- **Modeled revision:** The following emission limitation in paragraph 2.c. was added: “Emissions of sulfur dioxide from both C-Line Activators combined shall not exceed 7.72 lbs/hr and 33.8 tons during any consecutive 12 months [401 KAR 53:005, and Permit V-00-015 (Revision 2)].”
- **Modeled revision:** Compliance Demonstration Method 2.a. The Mass Emission Standard equation was revised to include SO₂.
- Compliance Demonstration Method 2.a. The Mass Emission Standard equation was revised as mentioned above for EP 08.
- Compliance Demonstration Method 2.b. The opacity compliance demonstration was revised as mentioned above for EP 14.
- **Modeled revision:** Monitoring, recordkeeping, and specific control equipment operating conditions were updated to reflect the requirements of adding the wet scrubber.

Section B, EP 22 (C-06) C-Line Packaging Operations.

- The particulate matter emission limit in paragraph 2.a. was changed from 10.38 lb/hr to $E = 4.10P^{0.67}$, which is the process weight-rate equation from 401 KAR 61:020.
- Compliance Demonstration Method 2.a. The Mass Emission Standard equation was revised as mentioned above for EP 08.
- The monitoring, recordkeeping, and reporting requirements were revised as mentioned above for EP 08.
- Specific recordkeeping requirement 5.f. was added.

Section B, EP 24 (M-02) Package Boiler.

- **Modeled revision:** Reference to 401 KAR 53:005 was added in order to enforce NAAQS.
- **Modeled revision:** The emission limitation in paragraph 2.b. was changed from 1.33 lb/mmBTU to 0.0861 lb/mmBTU.
- **Modeled revision:** The compliance demonstration method was updated to include periods of #2 fuel oil combustion.

Section B, EP 25 (M-03) Acid Wash Transfer & Packaging System.

- The particulate matter emission limit in paragraph 2.a. was changed from 2.34 lb/hr to $E = 3.59P^{0.62}$, which is the process weight-rate equation from 401 KAR 59:010.
- Compliance Demonstration Method 2.a. The Mass Emission Standard equation was revised to use the process weight rate in tons/hr of material processed at the emission point. This value is also the value of “P” in the process weight-rate equation.
- The monitoring, recordkeeping, and reporting requirements were revised as mentioned above for EP 08.

Section B, EP 26 (M-04) Acid Wash Process.

- **Modeled revision:** Reference to 401 KAR 53:005 was added in order to enforce NAAQS.
- The particulate matter emission limit in paragraph 2.a. was changed from 8.48 lb/hr to $E = 3.59P^{0.62}$, which is the process weight-rate equation from 401 KAR 59:010.
- **Modeled revision:** The following emission limitation in paragraph 2.b. was added: “Emissions of SO₂ from the Acid Wash Process shall not exceed 1.278 lb/hr and 5.598 tons during any consecutive 12 months [401 KAR 53:005, and Permit V-00-015 (Revision 2)].”
- **Modeled revision:** Compliance Demonstration Method 2.a. The Mass Emission Standard equation was revised to include SO₂.
- Compliance Demonstration Method 2.a. The Mass Emission Standard equation was revised as mentioned above for EP 08.
- The monitoring, recordkeeping, and reporting requirements were revised as mentioned above for EP 08.

Section B, EP 27 (--) Lime Storage Silo.

- The particulate matter emission limit in paragraph 2.a. was changed from 2.34 lb/hr to $E = 3.59P^{0.62}$, which is the process weight-rate equation from 401 KAR 59:010.
- Compliance Demonstration Method 2.a. The Mass Emission Standard equation was revised as mentioned above for EP 25.
- Compliance Demonstration Method 2.b. The opacity compliance demonstration was revised as mentioned above for EP 14.
- Monitoring requirement 4.c. was added.
- Recordkeeping requirements 5.c. and 5.f. were added.
- The specific reporting requirements were added.

Section B, EP 29 (D-0) D-Line Coal & Pitch Preparation Area.

- The particulate matter emission limit in paragraph 2.a. was changed from 17.87 lb/hr to $E = 4.10P^{0.67}$, which is the process weight-rate equation from 401 KAR 61:020.
- Compliance Demonstration Method 2.a. The Mass Emission Standard equation was revised as mentioned above for EP 08.
- The monitoring, recordkeeping, and reporting requirements were revised as mentioned above for EP 08.

Section B, EP 31 (D-05) D-Line Bakers.

- **Modeled revision:** This point was included in the list of proposed changes to source operations, however the modeled source emission rate matches the current SO₂ emission limit (See Table 1 of the modeling portion of the application). No permit change required.
- **502(B)10:** The operating limitation on the total weight of coal processed through the D-Line Bakers was revised from 7.8 tons per hour to 9.24 tons per hour. There was no change to the annual throughput limit.
- The particulate matter emission limit in paragraph 2.a. was changed from 16.24 lb/hr to $E = 4.10P^{0.67}$, which is the process weight-rate equation from 401 KAR 61:020.
- Compliance Demonstration Method 2.a. The Mass Emission Standard equation was revised as mentioned above for EP 08.
- Monitoring requirement 4.d. was added.
- Recordkeeping requirement 5.d. was revised as mentioned above for EP 08, paragraph 5.c. .
- The specific reporting requirements were added.

Section B, EP 32 (D-12, 13) D-Line Baker Heaters.

- **Modeled revision:** Reference to 401 KAR 53:005 was added in order to enforce NAAQS.
- **Modeled revision:** The emission limitation in paragraph 2.b. was changed from 1.33 lb/mmBTU to 0.0853 lb/mmBTU.

Section B, EP 34 (D-0, 09) D-Line Activators.

- **Modeled revision:** This point was included in the list of proposed changes to source operations, however the modeled source emission rate matches the current SO₂ emission limit (See Table 1 of the modeling portion of the application). No permit change required.
- The divisor in the hourly throughput rate equation in Compliance Demonstration Method 1.d. was corrected from referencing hours of “loading” to hours of “operation.”
- The particulate matter emission limit in paragraph 2.a. was changed from 16.24 lb/hr to $E = 4.10P^{0.67}$, which is the process weight-rate equation from 401 KAR 61:020.
- Compliance Demonstration Method 2.a. The Mass Emission Standard equation was revised as mentioned above for EP 08.
- Monitoring requirement 4.d. was added.
- Recordkeeping requirement 5.d. was revised as mentioned above for EP 08, paragraph 5.c.
- The specific reporting requirements were added.

Section B, EP 35 (D-10) D-Line Packaging Operations.

- The particulate matter emission limit in paragraph 2.a. was changed from 12.0 lb/hr to $E = 4.10P^{0.67}$, which is the process weight-rate equation from 401 KAR 61:020.
- Compliance Demonstration Method 2.a. The Mass Emission Standard equation was revised as mentioned above for EP 08.

Section B, EP 35 (D-10) D-Line Packaging Operations. (continued)

- The monitoring, recordkeeping, and reporting requirements were revised as mentioned above for EP 08.
- Specific recordkeeping requirement 5.f. was added.

Section B, EP 37 (E-01) E-Line Coal & Pitch Preparation Area.

- The particulate matter emission limit in paragraph 2.a. was changed from 17.87 lb/hr to $E = 4.10P^{0.67}$, which is the process weight-rate equation from 401 KAR 61:020.
- Compliance Demonstration Method 2.a. The Mass Emission Standard equation was revised as mentioned above for EP 08.
- The monitoring, recordkeeping, and reporting requirements were revised as mentioned above for EP 08.

Section B, EP 39 (E-02) E-Line Baker Heaters.

- **Modeled revision:** Reference to 401 KAR 53:005 was added in order to enforce NAAQS.
- The particulate matter emission limit in paragraph 2.a. was changed from 12.83 lb/hr to $E = 3.59P^{0.62}$, which is the process weight-rate equation from 401 KAR 59:010.
- **Modeled revision:** The emission limitation in paragraph 2.c. was changed from 4.62 lb/mmBTU to 15.0 lb/hr, and from 333.0 tons during any consecutive 12 months to 65.7 tons.
- Compliance Demonstration Method 2.a. The Mass Emission Standard equation was revised as mentioned above for EP 08.
- Monitoring requirement 4.d. was added.
- Recordkeeping requirement 5.d. was revised as mentioned above for EP 08, paragraph 5.c.
- The specific reporting requirements were added.

Section B, EP 40 (E-09, 10) E-Line Baker Heaters.

- **Modeled revision:** Reference to 401 KAR 53:005 was added in order to enforce NAAQS.
- **Modeled revision:** The description of the total heat input of this emission point was reduced from 20 mmBTU/hr to 16.7 mmBTU/hr as the result of removal of five #2 fuel oil fired burners.
- **Modeled revision:** In order to enforce the removal of the five oil fired burners, the following statement was added to paragraph 1., operating limitations:

The heat-input rating will be accomplished through the removal of five (5) #2 fuel oil fired burners. This results in the permitted operation of twenty-one (21) oil fired burners and four (4) natural gas fired burners for the E-Line Baker Heaters [401 KAR 53:005, and Permit V-00-015 (Revision 2)].

- **Modeled revision:** The emission limitation in paragraph 2.b. was changed from 1.33 lb/mmBTU to 0.477 lb/mmBTU.

Section B, EP 42 (E-05, 06) E-Line Activators.

- **Modeled revision:** Reference to 401 KAR 53:005 was added in order to enforce NAAQS.
- The divisor in the hourly throughput rate equation in Compliance Demonstration Method 1.d. was corrected from referencing hours of “loading” to hours of “operation.”
- The particulate matter emission limit in paragraph 2.a. was changed from 8.55 lb/hr to $E = 3.59P^{0.62}$, which is the process weight-rate equation from 401 KAR 59:010.

Section B, EP 42 (E-05, 06) E-Line Activators. (continued)

- **Modeled revision:** The following emission limitation in paragraph 2.c. was added: “Emissions of SO₂ from *each* E-Line Activator shall not exceed 7.5 lb/hr and 32.85 tons during any consecutive 12 months [401 KAR 53:005, and Permit V-00-015 (Revision 2)].”
- **Modeled revision:** Compliance Demonstration Method 2.a. The Mass Emission Standard equation was revised to include SO₂.

Section B, EP 42 (E-05, 06) E-Line Activators. (continued)

- Compliance Demonstration Method 2.a. The Mass Emission Standard equation was revised as mentioned above for EP 08.
- Compliance Demonstration Method 2.b. The opacity compliance demonstration was revised as mentioned above for EP 14.
- Monitoring requirement 4.d. was added.
- Recordkeeping requirement 5.d. was revised as mentioned above for EP 08 paragraph 5.c.
- The specific reporting requirements were added.

Section B, EP 43 (E-07) E-Line Packaging Operations.

- The particulate matter emission limit in paragraph 2.a. was changed from 12.05 lb/hr to $E = 4.10P^{0.67}$, which is the process weight-rate equation from 401 KAR 61:020.
- Compliance Demonstration Method 2.a. The Mass Emission Standard equation was revised as mentioned above for EP 08.
- The monitoring, recordkeeping, and reporting requirements were revised as mentioned above for EP 08.
- Specific recordkeeping requirement 5.f. was added.

Section B, EP 44 (M-06) D & E Bulk Loadout System.

- The particulate matter emission limit in paragraph 2.a. was changed from 4.72 lb/hr to $E = 4.10P^{0.67}$, which is the process weight-rate equation from 401 KAR 61:020.
- Compliance Demonstration Method 2.a. The Mass Emission Standard equation was revised as mentioned above for EP 08.
- The monitoring, recordkeeping, and reporting requirements were revised as mentioned above for EP 08.

Section B, EP 45 (CAS-01) Reactivation Furnace.

- **Modeled revision:** This point was included in the list of proposed changes to source operations, however the modeled source emission rate matches the current SO₂ emission limit (See Table 1 of the modeling portion of the application). No permit change to SO₂ emission limit required.
- The particulate matter emission limit in paragraph 2.a. was changed from 7.01 lb/hr to $E = 4.10P^{0.67}$, which is the process weight-rate equation from 401 KAR 61:020. However, in no case shall particulate emissions exceed 7.01 lb/hr because it is a Synthetic Minor Limit carried over from Permit O-94-020 (Revision 1).
- Compliance Demonstration Method 2.a. The Mass Emission Standard equation was revised as mentioned above for EP 08.
- Monitoring requirement 4.e. was revised as mentioned above for EP 08, paragraph 4.d.
- Recordkeeping requirement 5.e. was revised as mentioned above for EP 08, paragraph 5.c.

Section B, EP 45 (CAS-01) Reactivation Furnace. (continued)

- Specific Recordkeeping Requirement 5.n.3.(iii) was revised slightly to also include calculations demonstrating that the HCl emissions from processing spent carbon with a chloride content of greater than 4.0% by weight will not exceed 2.55 lb/hr.
- The specific reporting requirements were revised to include a report of an exceedance of any emission limit, not just the SO₂ limit, and to report the occurrence, duration, cause, and any corrective action taken for each incident when operations are in progress but the associated control device is not.

Section B, EP 48 (CAS-06) Waste Disposal Silo.

- The particulate matter emission limit in paragraph 2.a. was changed from 8.56 lb/hr to $E = 4.10P^{0.67}$, which is the process weight-rate equation from 401 KAR 61:020.
- Compliance Demonstration Method 2.a. The Mass Emission Standard equation was revised as mentioned above for EP 08.
- The monitoring, recordkeeping, and reporting requirements were revised as mentioned above for EP 08.
- Specific recordkeeping requirement 5.f. was added.

Section B, EP 49 (CAS-07) Soda Ash Storage Silo.

- The particulate matter emission limit in paragraph 2.a. was changed from 8.56 lb/hr to $E = 4.10P^{0.67}$, which is the process weight-rate equation from 401 KAR 61:020.
- Compliance Demonstration Method 2.a. The Mass Emission Standard equation was revised as mentioned above for EP 08.
- The monitoring, recordkeeping, and reporting requirements were revised as mentioned above for EP 08.
- Specific recordkeeping requirement 5.f. was added.

Section B, EP 50 (A-15) Pulverizer Collection System.

- The particulate matter emission limit in paragraph 2.a. was changed from 8.56 lb/hr to $E = 4.10P^{0.67}$, which is the process weight-rate equation from 401 KAR 61:020.
- Compliance Demonstration Method 2.a. The Mass Emission Standard equation was revised as mentioned above for EP 08.
- The monitoring, recordkeeping, and reporting requirements were revised as mentioned above for EP 08.

Section B, EP 51 (C-09) A, B, & C Acid Wash Fines Packaging System.

- The particulate matter emission limit in paragraph 2.a. was changed from 4.10 lb/hr to $E = 4.10P^{0.67}$, which is the process weight-rate equation from 401 KAR 61:020.
- Compliance Demonstration Method 2.a. The Mass Emission Standard equation was revised as mentioned above for EP 08.
- The monitoring, recordkeeping, and reporting requirements were revised as mentioned above for EP 08.
- Specific recordkeeping requirement 5.f. was added.

Section B, EP 52 (F-01) Activated Carbon Fine Mesh Production.

- The particulate matter emission limit in paragraph 2.a. was changed from 5.52 lb/hr to $E = 3.59P^{0.62}$, which is the process weight-rate equation from 401 KAR 59:010.
- Compliance Demonstration Method 2.a. The Mass Emission Standard equation was revised as mentioned above for EP 08.
- The monitoring, recordkeeping, and reporting requirements were revised as mentioned above for EP 08.

Section B, EP 53 (CAS-09) Reactivation Process for Custom Product.

- **502(B)10:** The operating limitation on the total weight of custom product reactivated was revised from 1.66 tons per hour to 2.50 tons per hour, and from 14,600 tons during any consecutive 12 months to 21,840 tons during any consecutive 12 months.
- The particulate matter emission limit in paragraph 2.a. was changed from 4.92 lb/hr to $E = 3.59P^{0.62}$, which is the process weight-rate equation from 401 KAR 59:010.

Section B, EP 53 (CAS-09) Reactivation Process for Custom Product. (continued)

- Compliance Demonstration Method 2.a. The Mass Emission Standard equation was revised as mentioned above for EP 08.
- The monitoring, recordkeeping, and reporting requirements were revised as mentioned above for EP 08.

Section I – Compliance Schedule

Two not-applicable paragraphs were deleted. See Revision 1 for a comparison.

Type of control and efficiency: (Added for this revision.)

EP 14, B-Line Activator #3 Scrubber

Type: Wet Scrubber

Model: TBD

Manufacturer: D.R. Technology Inc.

Scrubbing Liquid Flowrate: 750-950 gal/min

Pressure Drop Across Unit: 8-12 in. of H₂O

Destruction Efficiency: ≥90%, based on modeling

Date constructed: 2004 (anticipated)

EP 21, C-Line Activators #5/#6 Scrubber

Type: Wet Scrubber

Model: TBD

Manufacturer: D.R. Technology Inc.

Scrubbing Liquid Flowrate: 1200-1400 gal/min

Pressure Drop Across Unit: 8-12 in. of H₂O

Destruction Efficiency: ≥90%, based on modeling

Date constructed: 2004 (anticipated)

Emission factors and their source:

A combination of AP-42 emission factors, material balance, site testing and modeled parameters have been used to estimate emissions in the application.

Applicable Regulations:

401 KAR 53:005, *General provisions* was applied to many of the points listed above in order to enforce the modeled SO₂ reductions and enforce NAAQS.

Anything unusual about the:

- 1) Emission point number and description. None.
- 2) Regulations that are not applicable. None.

EMISSION AND OPERATING CAPS DESCRIPTION:

See the summary above for descriptions by EP for this revision.

PERIODIC MONITORING:

See the permit for Specific Monitoring Requirements.

PUBLIC AND U.S. EPA REVIEW:

On November 25, 2003 the public notice on availability of the draft permit and supporting material for comments by persons affected by the plant was published in *The Independent* in Ashland, Kentucky. The public comment period expired 30 days from the date of publication. During this time no comments were received from the general public.

Comments were received from Calgon Carbon Corporation on December 24, 2003. Attachment A to this section lists the comments received and the Division's response to each comment. Minor changes were made to the permit as a result of the comments, however, in no case were any emission standards, or any monitoring, recordkeeping or reporting requirements relaxed. Please see Attachment A to Section III for a detailed explanation of the changes made to the permit.

Since comments were received from the facility during the public comment period, the permit now being issued is a proposed permit. U.S. EPA has 45 days from the date of issuance of the proposed permit to comment on it. If no comments are received from U.S. EPA during this period, the proposed permit shall become the final permit.

ATTACHMENT A TO SECTION III

Response to Comments

Comments and Suggested Revisions on the Draft Title V Permit Revision submitted by Sid Stephenson, Calgon Carbon Corporation.

1. Reference to Method 9 Monitoring during upset conditions:

This is a new permit condition that Calgon Carbon Corporation considers to be onerous. This will require training of over approximately 100 personnel to become certified for method 9 at an estimated cost of \$70,000 to \$100,000. Calgon Carbon Corporation believes that the same level of environmental protection can be achieved by implementing a Method 22 requirements [sic]. This is consistent with the requirements approved by USEPA and the State of Mississippi for an identical production facility in Pearlington, Mississippi. This Mississippi Title V Permit was issued in August 2003. Therefore, Calgon Carbon Corporation requests that the Method 9 monitoring requirements throughout the permit be changed to Method 22.

Division's response: The Division does not feel that this requirement is overly burdensome and has not revised the test method required by the permit. During normal operation of either the baghouses or scrubbers, depending on the exact point in question, there is no compliance demonstration method for opacity other than a weekly visual inspection. If there are no visible emissions noted during the weekly inspection, then a Method 9 reading is not required, and, as noted in the August 2003 inspection report conducted by Ashland Regional Office personnel, most of the baghouses will not produce visible emissions while in operation. The Method 9 reading is only required when visible emissions are observed during the weekly inspection, or during periods of control device malfunction while the associated unit is still running. This language is similar to that used in many other permits issued by the Division.

This requirement is to ensure compliance with the opacity standards outlined by the applicable regulations. The Division feels that Method 22 is not a suitable alternative to Method 9 for determining opacity. According to the descriptions of the test methods, Method 22 is applicable for the "...determination of the frequency of fugitive emissions from stationary sources," and for the "... determination of the frequency of visible smoke emissions from flares." Method 22 further states that, "This method does not require that the opacity of emissions be determined." Additionally, the Method 9 description specifically states that it is applicable for "... visually determining opacity of emissions." Therefore, the Division feels that, other than the use of a transmissometer, Method 9 is the only suitable method to determine opacity.

The Division feels that the permittee could accomplish these requirements by training a few key personnel per shift. As described above, a Method 9 reading is not required during each visual inspection, but only when visible emissions are observed or when a process unit is still operating during a control device malfunction. Also, as indicated by the inspection report, in most instances there are no visible emissions from the baghouses while they are functioning properly.

Regardless, the Division contacted Toby Cook of the Mississippi Department of Environmental Quality in order to confirm the Mississippi facility's Title V requirements. The only reference to Method 22 in the Mississippi facility's Title V permit is as a Quality Assurance/Quality Control

measure to ensure personnel are “...trained on stack observation procedures....” No where does it state that Method 22 is used in lieu of Method 9 to determine opacity.

As a result of preparing the response to this comment, the Division noted two items with the opacity compliance demonstration methods that required either clarification or correction. In order to clarify the compliance demonstration method during periods of normal control device operation, a phrase was added to reference the weekly visual inspection in paragraph 4.d. of each applicable emission point. Additionally, during periods of control device malfunction, numerous compliance demonstration method references were corrected to paragraph 5.c. instead of paragraph 5.d. of each applicable emission point. For Emission Point 45, the reference was changed to paragraph 5.e. instead of 5.d.

2. Section B, Emission Point 24, Page 30

Emission Point 24, Package Boiler, was shut down permanently in 2003 and Calgon Carbon Corporation requests that this emission point be removed from the permit. All references throughout the permit for this emission point should also be removed.

Division’s response: The Division has revised the permit, as requested. Before restarting the Package Boiler (or installing a similar device) the permittee would have to submit a revision application, and, based on the type of revision required, receive a revised permit.

3. B-Line, Emission Point Number 14 and C-Line Emission Point Number 21, Section 7

The minimum flow rate for the wet scrubber and the total differential pressure for the wet scrubber should be consistent with that from the D-Line and E-Line activators. Calgon Carbon Corporation requests that the minimums be changed from 750 gpm to 350 gpm and from 8.0 to 6.0 inches of water on Emission Point Number 14 (B-Line Activators). Similarly, the minimums are requested to be changed on Emission Point Number 21 (C-Line Activator) 1200 gpm to 350 gpm and 8.0 to 6.0 inches of water.

In addition, Calgon Carbon Corporation requests that a statement be included such that the excursion definition does not apply to the minimum furnace afterburner temperature and scrubber differential pressure readings during initiation of activator feed to the furnaces of all four sets of activator furnaces (B, C, D, and E). Calgon Carbon Corporation requests the following text be added to the discussion of “excursion” in Section 7: “The minimum specified operating limit does not apply during initiation of activator feed to the furnace until the minimum operating conditions are met. An excursion for starting feed would occur after 3 hours from the time of time [sic] feed was initiated and the minimum operating conditions are not met.”

Calgon Carbon requests that this condition be added for Section 7 on emission point 21 (C-Line Activators), Emission Points 34 (D-Line Activators) and emission point number 42 (E-Line Activators).

Division’s response: The requested revisions to the minimum flow rate and differential pressure were not made. The specific control equipment operating conditions placed in the permit for the B and C-Line Activator wet scrubbers matches the information submitted on Form DEP7007N in the application for each control device. The Division, however, would consider revising the control equipment operating conditions if the performance testing required by Section G.d.5 indicates that 90% control efficiency for particulate matter and SO₂ can be achieved using those parameters.

Additionally, the excursion definitions for the minimum activator furnace afterburner temperature and the minimum scrubber differential pressure readings were not modified. The Division understands that a portion of the activator's heat input is derived from combustion of carbon fines. As such there may be lag times between feed introduction and activator temperature, which may affect the afterburner temperature. The Division also understands that the process gas flow through the scrubber may decrease during periods of startup, shutdown, and malfunction, and result in differential pressure drops below the minimum parameter. It is assumed that because of that fact, the Division defined an excursion as having a 3-hour averaging period in the Title V permit (Permits F-95-005 and F-96-030 which first authorized installation and operation of the E and D-Line Activator scrubbers, respectively, and Permit O-94-020, Revision 1 simply set a base-line limit without an averaging period).

Since the main issue with obtaining the minimum control equipment operating conditions appear to be during periods of start-up, shutdown, and malfunction 401 KAR 50:055, General Compliance Requirements, was also referenced for a response to this comment. 401 KAR 50:055, Section 1(4)(d) states that a source shall be relieved from compliance with applicable standards during start-up, shutdown, or malfunction if "...the excess emissions are not part of a recurring pattern indicative of inadequate design, operation, or maintenance...." As such, the Division feels that loosening the specific control equipment operating parameters beyond the existing permit definition of an excursion would allow the permittee to circumvent this portion of the regulation.

Also, the issue with the lag time for reaching the required minimum afterburner temperature during introduction of feed to the activator furnaces was addressed in an inspection report issued on August 20, 2003, and the facility's response to the inspection report dated October 9, 2003. In that response letter, the facility indicated that they "...have initiated a plan to modify or install direct natural gas fired heating system [sic] in the afterburner of each activator which will eliminate this condition." The letter went on to say that the permittee "...anticipates that each of the activator afterburners will have the capability to reach the minimum temperature as defined in the Title V Air Quality Permit by November 30, 2003."

Appendix J

Notice of Public Hearing
and Legal Documentation

**KENTUCKY DIVISION FOR AIR QUALITY
NOTICE OF PUBLIC HEARING
TO REVISE KENTUCKY'S STATE IMPLEMENTATION PLAN**

The Kentucky Environmental and Public Protection Cabinet will conduct a public hearing on January 26, 2005, at 10:00 a.m. (ET) in the Conference Room of the Kentucky Division for Air Quality (KYDAQ), 803 Schenkel Lane, Frankfort, Kentucky. This hearing is being held to receive comments on a proposed State Implementation Plan (SIP) revision for the southern portion of Boyd County to become redesignated to attainment for sulfur dioxide under the National Ambient Air Quality Standards (NAAQS). This revision, when approved by U.S. EPA, will redesignate Boyd County's nonattainment portion to attainment, and includes documentation that both the ambient monitoring data and the modeling data for sulfur dioxide indicate attainment of the NAAQS. This revision involves only the southern portion of Boyd County.

This hearing is open to the public and all interested persons will be given the opportunity to present testimony. To assure that all comments are accurately recorded, the Division requests that oral comments presented at the hearing also be provided in written form, if possible. To be considered part of the hearing record, comments must be received by the close of the hearing. Comments should be sent to the contact person.

The full text of the proposed SIP revision is available for public inspection and copying during regular business hours (8:00 a.m. to 4:30 p.m.) at the locations listed below. Any individual requiring copies may submit a request to the Division for Air Quality in writing, by telephone, or by FAX. Requests for copies should be directed to the contact person. In addition, an electronic version of the proposed SIP revision document and relevant attachments can be downloaded from the Division for Air Quality's web site at:

http://www.air.ky.gov/homepage_repository/Public+Hearings.htm.

The hearing facility is accessible to people with disabilities. An interpreter or other auxiliary aid or service will be provided upon request. Please direct these requests to the contact person.

CONTACT PERSON: John E. Gowins (Evaluation Section), Division for Air Quality, 803 Schenkel Lane, Frankfort, Kentucky 40601. The phone number is (502) 573-3382. The FAX number is (502) 573-3787. E-mail addresses are john.gowins@ky.gov.

The Environmental and Public Protection Cabinet does not discriminate on the basis of race, color, national origin, sex, age, religion, or disability and provides, upon request, reasonable accommodation including auxiliary aids and services necessary to afford an individual with a disability an equal opportunity to participate in all services, programs, and activities.

Lou-Metro Air Pollution Control District
850 Barret Avenue, Suite 205
Louisville, KY 40204-1745

Ashland Regional Office
1550 Wolohan Drive, Suite 1
Ashland, KY 41102-8942

Bowling Green Regional Office
1508 Westen Avenue
Bowling Green, KY 42104

Florence Regional Office
8020 Veterans Mem Dr, Suite 110
Florence, KY 41042

Frankfort Regional Office
643 Teton Trail, Suite B
Frankfort, KY 40601-1758

Hazard Regional Office
233 Birch Street, Suite 2
Hazard, KY 41701-2179

London Regional Office
875 S Main Street
London, KY 40741

Owensboro Regional Office
3032 Alvey Park Dr W, Suite 700
Owensboro, KY 42303-2191

Paducah Regional Office
4500 Clarks River Road
Paducah, KY 42003-0823

Boyd County Clerk
10699 US Route 60
Ashland, KY 41101

Boyd County Public Library
1740 Central Avenue
Ashland, KY 41102

Appendix K

Statement of Consideration



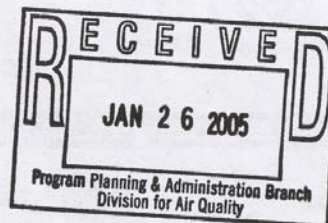
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

JAN 25 2005

4APT-APB

John Lyons, Director
Division for Air Quality
Department for Environmental Protection
KY Environmental & Public Protection Cabinet
803 Schenkel Lane
Frankfort, Kentucky 40601



Dear Mr. Lyons:

Thank you for the opportunity to review the (undated) proposed State Implementation Plan (SIP) amendment received on December 17, 2004, which is the subject of a public hearing on January 26, 2005. The package provides documentation to support redesignation of the southern portion of Boyd County, Kentucky to attainment for the sulfur dioxide (SO₂) national ambient air quality standard (NAAQS). Although this area has no monitored violations of the SO₂ NAAQS, the area is currently designated nonattainment for SO₂ due to modeled violations.

Per our discussions on January 14, we look forward to receiving and evaluating further the following, supplementary information to support this proposed redesignation request:

- The base year for the maintenance demonstration must be identified. It is currently assumed that this would be 2003 which corresponds to the year of emissions used in the modeling in Appendix F.
- The maintenance plan must provide for attainment at least 10 years from the base year.
- Contingency measures are required should a monitored or modeled violation of the SO₂ NAAQS occur. Contingency measures as required by section 175A of the Clean Air Act must be included in the submittal. The submittal must further describe the triggers that will be used to determine when the contingency measures need to be implemented. The plan must clearly identify the measures to be adopted, a schedule and procedures for adoption and implementation, and a specific time limit for action by the Commonwealth. We will work with you to determine the appropriate contingency measures for this area.
- On September 4, 1992, John Calcagni, Director, Air Quality Management Division, issued a memorandum to Air Division Directors of the Environmental Protection Agency on Procedures for Processing Requests to Redesignate Areas to Attainment. A copy of this memorandum is enclosed. The submittal must identify what is needed for

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verification of continued attainment that must be included in your maintenance plan. We will work with you to address these requirements.

- The final SIP revision must specify the relevant portions of the title V permits for Calgon specifically the SO₂ emission limits, that are being added to the Kentucky SIP. The Agency will incorporate these specified provisions as source-specific SIP revisions.

We appreciate your transmittal of this package for our consideration. If you have questions regarding this letter, please contact Michele Notarianni of the Region 4 staff at (404) 562-9031.

Sincerely,



Kay T. Prince
Chief
Air Planning Branch

Enclosure



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Office of Air Quality Planning and Standards
Research Triangle Park, North Carolina 27711

4 SEP 1992

AIR PROGRAMS BRANCH
RECEIVED
SEP 8 1992
EPA-REGION IV
ATLANTA, GA.

MEMORANDUM

SUBJECT: Procedures for Processing Requests to Redesignate Areas to Attainment

FROM: John Calcagni, Director
Air Quality Management Division (MD-15)

TO: Director, Air, Pesticides and Toxics Management Division, Regions I and IV
Director, Air and Waste Management Division, Region II
Director, Air, Radiation and Toxics Division, Region III
Director, Air and Radiation Division, Region V
Director, Air, Pesticides and Toxics Division, Region VI
Director, Air and Toxics Division, Regions VII, VIII, IX, and X

Purpose

The Office of Air Quality Planning and Standards (OAQPS) expects that a number of redesignation requests will be submitted in the near future. Thus, Regions will need to have guidance on the applicable procedures for handling these requests, including maintenance plan provisions. This memorandum, therefore, consolidates the Environmental Protection Agency's (EPA's) guidance regarding the processing of requests for redesignation of nonattainment areas to attainment for ozone (O₃), carbon monoxide (CO), particulate matter (PM-10), sulfur dioxide (SO₂), nitrogen dioxide (NO₂), and lead (Pb). Regions should use this guidance as a general framework for drafting Federal Register notices pertaining to redesignation requests. Special concerns for areas seeking redesignation from unclassifiable to attainment will be addressed on a case-by-case basis.

Background

Section 107(d)(3)(E) of the Clean Air Act, as amended, states that an area can be redesignated to attainment if the following conditions are met:

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1. The EPA has determined that the national ambient air quality standards (NAAQS) have been attained.
2. The applicable implementation plan has been fully approved by EPA under section 110(k).
3. The EPA has determined that the improvement in air quality is due to permanent and enforceable reductions in emissions.
4. The State has met all applicable requirements for the area under section 110 and Part D.
5. The EPA has fully approved a maintenance plan, including a contingency plan, for the area under section 175A.

Each of these criteria is discussed in more detail in the following paragraphs. Particular attention is given to maintenance plan provisions at the end of this document since maintenance plans constitute a new requirement under the amended Clean Air Act. Exceptions to the guidance will be considered on a case-by-case basis.

1. Attainment of the Standard

The State must show that the area is attaining the applicable NAAQS. There are two components involved in making this demonstration which should be considered interdependently. The first component relies upon ambient air quality data. The data that are used to demonstrate attainment should be the product of ambient monitoring that is representative of the area of highest concentration. These monitors should remain at the same location for the duration of the monitoring period required for demonstrating attainment. The data should be collected and quality-assured in accordance with 40 CFR 58 and recorded in the Aerometric Information Retrieval System (AIRS) in order for it to be available to the public for review. For purposes of redesignation, the Regional Office should verify that the integrity of the air quality monitoring network has been preserved.

For PM-10, an area may be considered attaining the NAAQS if the number of expected exceedances per year, according to 40 CFR 50.6, is less than or equal to 1.0. For O₃, the area must show that the average annual number of expected exceedances, according to 40 CFR 50.9, is less than or equal to 1.0 based on data from all monitoring sites in the area or its affected downwind environs. In making this showing, both PM-10 and O₃ must rely on 3 complete, consecutive calendar years of quality-assured air quality monitoring data, collected in accordance with 40 CFR 50, Appendices H and K. For CO, an area may be considered attaining the NAAQS if there are no violations, as determined in accordance

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with 40 CFR 50.8, based on 2 complete, consecutive calendar years of quality-assured monitoring data. For SO₂, according to 40 CFR 50.4, an area must show no more than one exceedance annually and for Pb, according to section 50.12, an area may show no exceedances on a quarterly basis.

The second component relies upon supplemental EPA-approved air quality modeling. No such supplemental modeling is required for O₃ nonattainment areas seeking redesignation. Modeling may be necessary to determine the representativeness of the monitored data. For pollutants such as SO₂ and CO, a small number of monitors typically is not representative of areawide air quality or areas of highest concentration. When dealing with SO₂, Pb, PM-10 (except for a limited number of initial moderate nonattainment areas), and CO (except moderate areas with design values of 12.7 parts per million or lower at the time of passage of the Clean Air Act Amendments of 1990), dispersion modeling will generally be necessary to evaluate comprehensively sources' impacts and to determine the areas of expected high concentrations based upon current conditions. Areas which were designated nonattainment based on modeling will generally not be redesignated to attainment unless an acceptable modeling analysis indicates attainment. Regions should consult with OAQPS for further guidance addressing the need for modeling in specific circumstances.

2. State Implementation Plan (SIP) Approval

The SIP for the area must be fully approved under section 110(k),¹ and must satisfy all requirements that apply to the area. It should be noted that approval action on SIP elements and the redesignation request may occur simultaneously. An area cannot be redesignated if a required element of its plan is the subject of a disapproval; a finding of failure to submit or to implement the SIP; or partial, conditional, or limited approval. However, this does not mean that earlier issues with regard to the SIP will be reopened. Regions should not reconsider those things that have already been approved and for which the Clean Air Act Amendments did not alter what is required. In contrast, to the extent the Amendments add a requirement or alter an existing requirement so that it adds something more, Regions should consider those issues. In addition, requests from areas known to be affected by dispersion techniques which are inconsistent with EPA guidance will continue to be considered unapprovable under section 110 and will not qualify for redesignation.

¹Section 110(k) contains the requirements for EPA action on plan submissions. It addresses completeness, deadlines, full and partial approval, conditional approval, and disapproval.

3. Permanent and Enforceable Improvement in Air Quality

The State must be able to reasonably attribute the improvement in air quality to emission reductions which are permanent and enforceable.² Attainment resulting from temporary reductions in emission rates (e.g., reduced production or shutdown due to temporary adverse economic conditions) or unusually favorable meteorology would not qualify as an air quality improvement due to permanent and enforceable emission reductions.

In making this showing, the State should estimate the percent reduction (from the year that was used to determine the design value for designation and classification) achieved from Federal measures such as the Federal Motor Vehicle Control Program and fuel volatility rules as well as control measures that have been adopted and implemented by the State. This estimate should consider emission rates, production capacities, and other related information to clearly show that the air quality improvements are the result of implemented controls. The analysis should assume that sources are operating at permitted levels (or historic peak levels) unless evidence is presented that such an assumption is unrealistic.

4. Section 110 and Part D Requirements

For the purposes of redesignation, a State must meet all requirements of section 110 and Part D that were applicable prior to submittal of the complete redesignation request. When evaluating a redesignation request, Regions should not consider whether the State has met requirements that come due under the Act after submittal of a complete redesignation request.³

²This is consistent with EPA's existing policy on redesignations as stated in an April 21, 1983 memorandum titled "Section 107 Designation Policy Summary." This memorandum states that in order for an area to be redesignated to attainment, the State must show that "actual enforceable emission reductions are responsible for the recent air quality improvement." This element of the policy retains its validity under the amended Act pursuant to section 193. [Note: other aspects of the April 21, 1983 memorandum have since been superseded by subsequent memorandums; interested parties should consult with OAQPS before relying on these aspects, e.g. those relating to required years of air quality data.]

³Under section 175A(c), however, the requirements of Part D remain in force and effect for the area until such time as it is redesignated. Upon redesignation to attainment, the requirements that became due under section 175A(c) after submittal of the complete redesignation request would no longer be applicable.

However, any requirements that came due prior to submittal of the redesignation request must be fully approved into the plan at or before the time EPA redesignates the area.

To avoid confusion concerning what requirements will be applicable for purposes of redesignation, Regions should encourage States to work closely with the appropriate Regional Office early in the process. This will help to ensure that a redesignation request submitted by the State has a high likelihood of being approved by EPA. Regions should advise States of the practical planning consequences if EPA disapproves the redesignation request or if the request is invalidated because of violations recorded during EPA's review. Under such circumstances, EPA does not have the discretion to adjust schedules for implementing SIP requirements. As a result, an area may risk sanctions and/or Federal implementation plan implementation that could result from failure to meet SIP submittal or implementation requirements.

a. Section 110 Requirements

Section 110(a)(2) contains general requirements for nonattainment plans. Most of the provisions of this section are the same as those contained in the pre-amended Act. We will provide guidance on these requirements as needed.⁴

b. Part D Requirements

Part D consists of general requirements applicable to all areas which are designated nonattainment based on a violation of the NAAQS. The general requirements are followed by a series of subparts specific to each pollutant. The general requirements appear in subpart 1. The requirements relating to O₃, CO, PM-10, SO₂, NO₂, and Pb appear in subparts 2 through 5. In those instances where an area is subject to both the general nonattainment provisions in subpart 1 as well as one of the pollutant-specific subparts, the general provisions may be subsumed within, or superseded by, the more specific requirements of subparts 2 through 5.

If an area was not classified under section 181 for O₃, or section 186 for CO, then that area is only subject to the provisions of subpart 1, "Nonattainment Areas in General." In addition to relevant provisions in subpart 1, an O₃ and CO area, which is classified, must meet all applicable requirements in subpart 2, "Additional Provisions for Ozone Nonattainment Areas," and subpart 3, "Additional Provisions for Carbon Monoxide

⁴General guidance regarding the requirements for SIP's may be found in the "General Preamble to Title I of the 1990 Clean Air Act Amendments," 57 FR 13498 (April 16, 1992).

Nonattainment Areas," respectively, before the area may be redesignated to attainment. All PM-10 nonattainment areas (whether classified as moderate or serious) must similarly meet the applicable general provisions of subpart 1 and the specific PM-10 provisions in subpart 4, "Additional Provisions for Particulate Matter Nonattainment Areas." Likewise, SO₂, NO₂, and Pb nonattainment areas are subject to the applicable general nonattainment provisions in subpart 1 as well as the more specific requirements in subpart 5, "Additional Provisions for Areas Designated Nonattainment for Sulfur Oxides, Nitrogen Dioxide, and Lead."

i. Section 172(c) Requirements

This section contains general requirements for nonattainment plans. A thorough discussion of these requirements may be found in the General Preamble to Title I [57 FR 13498 (April 16, 1992)]. The EPA anticipates that areas will already have met most or all of these requirements to the extent that they are not superseded by more specific Part D requirements. The requirements for reasonable further progress, identification of certain emissions increases, and other measures needed for attainment will not apply for redesignations because they only have meaning for areas not attaining the standard. The requirements for an emission inventory will be satisfied by the inventory requirements of the maintenance plan. The requirements of the Part D new source review program will be replaced by the prevention of significant deterioration (PSD) program once the area has been redesignated. However, in order to ensure that the PSD program will become fully effective immediately upon redesignation, either the State must be delegated the Federal PSD program or the State must make any needed modifications to its rules to have the approved PSD program apply to the affected area upon redesignation.

ii. Conformity

The State must work with EPA to show that its SIP provisions are consistent with section 176(c)(4) conformity requirements. The redesignation request should include conformity procedures, if the State already has these procedures in place. Additionally, we currently interpret the conformity requirement to apply to attainment areas. However, EPA has not yet issued its conformity regulations specifying what areas are subject to the conformity requirement. Therefore, if a State does not have conformity procedures in place at the time that it submits a redesignation request, the State must commit to follow EPA's conformity regulation upon issuance, as applicable. If the State submits the redesignation request subsequent to EPA's issuance of the conformity regulations, and the conformity requirement became applicable to the area prior to submission,

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the State must adopt the applicable conformity requirements before EPA can redesignate the area.

5. Maintenance Plans

Section 107(d)(3)(E) of the amended Act stipulates that for an area to be redesignated, EPA must fully approve a maintenance plan which meets the requirements of section 175A. A State may submit both the redesignation request and the maintenance plan at the same time and rulemaking on both may proceed on a parallel track. Maintenance plans may, of course, be submitted and approved by EPA before a redesignation is requested. However, according to section 175A(c), pending approval of the maintenance plan and redesignation request, all applicable nonattainment area requirements shall remain in place.

Section 175A defines the general framework of a maintenance plan. The maintenance plan will constitute a SIP revision and must provide for maintenance of the relevant NAAQS in the area for at least 10 years after redesignation. Section 175A further states that the plan shall contain such additional measures, if any, as may be necessary to ensure such maintenance. Because the Act requires a demonstration of maintenance for 10 years after an area is redesignated (not 10 years after submittal of a redesignation request), the State should plan for some lead time for EPA action on the request. In other words, the maintenance demonstration should project maintenance for 10 years, beginning from a date which factors in the time necessary for EPA review and approval action on the redesignation request. In determining the amount of lead time to allow, States should consider that section 107(d)(3)(D) grants the Administrator up to 18 months from receipt of a complete submittal to process a redesignation request. The statute also requires the State to submit a revision of the SIP 8 years after the original redesignation request is approved to provide for maintenance of the NAAQS for an additional 10 years following the first 10-year period [see section 175A(b)].

In addition, the maintenance plan shall contain such contingency measures as the Administrator deems necessary to ensure prompt correction of any violation of the NAAQS [see section 175A(d)]. The Act provides that, at a minimum, the contingency measures must include a requirement that the State will implement all measures contained in the nonattainment SIP prior to redesignation. Failure to maintain the NAAQS and triggering of the contingency plan will not necessitate a revision of the SIP unless required by the Administrator, as stated in section 175A(d).

The following is a list of core provisions that we anticipate will be necessary to ensure maintenance of the relevant NAAQS in an area seeking redesignation from

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nonattainment to attainment. We therefore recommend that States seeking redesignation of a nonattainment area consider these provisions. However, any final EPA determination regarding the adequacy of a maintenance plan will be made following review of the plan submittal in light of the particular circumstances facing the area proposed for redesignation and based on all relevant information available at the time.

a. Attainment Inventory

The State should develop an attainment emissions inventory to identify the level of emissions in the area which is sufficient to attain the NAAQS.⁵ This inventory should be consistent with EPA's most recent guidance on emission inventories for nonattainment areas available at the time and should include the emissions during the time period associated with the monitoring data showing attainment.⁶

Source size thresholds are 100 tons/year for SO₂, NO₂, and PM-10 areas, and 5 tons/year for Pb based upon 40 CFR 51.100(k) and 51.322, as well as established practice for AIRS data. The source size threshold for serious PM-10 areas is 70 tons/year

⁵Where the State has made an adequate demonstration that air quality has improved as a result of the SIP (as discussed previously), the attainment inventory will generally be the actual inventory at the time the area attained the standard.

⁶The EPA's current guidance on the preparation of emission inventories for O₃ and CO nonattainment areas is contained in the following documents: "Procedures for the Preparation of Emission Inventories for Carbon Monoxide and Precursors of Ozone: Volume I" (EPA-450/4-91-016), "Procedures for the Preparation of Emission Inventories for Carbon Monoxide and Precursors of Ozone: Volume II" (EPA-450/4-91-014), "Emission Inventory Requirements for Ozone State Implementation Plans" (EPA-450/4-91-010), "Emission Inventory Requirements for Carbon Monoxide Implementation Plans" (EPA-450/4-91-011), "Guideline for Regulatory Application of the Urban Airshed Model" (EPA-450/4-91-013), "Procedures for Emission Inventory Preparation: Volume IV, Mobile Sources" (EPA-450/4-81-026d), and "Procedures for Preparing Emission Inventory Projections" (EPA-450/4-91-019). The EPA does not currently have specific guidance on attainment emissions inventories for SO₂. In lieu thereof, States are referred to the guidance on emissions data to be used as input to modeling demonstrations, contained in Table 9.1 of EPA's "Guideline on Air Quality Models (Revised)" (EPA-450/2-78-027R), July 1987, which is generally applicable to all criteria pollutants. Emission inventory procedures and requirements documents are currently being prepared by OAQPS for PM-10 and Pb; these documents are due for release by summer 1992.

according to Clean Air Act section 189(b)(3). However, the inventory should include sources below these size thresholds if these smaller sources were included in the SIP attainment demonstration. Where sources below the 100, 70, and 5 tons/year-size thresholds (e.g., areas with smaller source size definitions) are subject to a State's minor source permit program, these sources need only be addressed in the aggregate to the extent that they result in areawide growth.

For O₃ nonattainment areas, the inventory should be based on actual "typical summer day" emissions of O₃ precursors (volatile organic compounds and nitrogen oxides) during the attainment year. This will generally correspond to one of the periodic inventories required for nonattainment areas to reconcile milestones. For CO nonattainment areas, the inventory should be based on actual "typical CO season day" emissions for the attainment year. This will generally correspond to one of the periodic inventories required for nonattainment areas.

b. Maintenance Demonstration

A State may generally demonstrate maintenance of the NAAQS by either showing that future emissions of a pollutant or its precursors will not exceed the level of the attainment inventory, or by modeling to show that the future mix of sources and emission rates will not cause a violation of the NAAQS. Under the Clean Air Act, many areas are required to submit modeled attainment demonstrations to show that proposed reductions in emissions will be sufficient to attain the applicable NAAQS. For these areas, the maintenance demonstration should be based upon the same level of modeling. In areas where no such modeling was required, the State should be able to rely on the attainment inventory approach. In both instances, the demonstration should be for a period of 10 years following the redesignation.

Where modeling is relied upon to demonstrate maintenance, each plan should contain a summary of the air quality concentrations expected to result from application of the control strategy. In the process, the plan should identify and describe the dispersion model or other air quality model used to project ambient concentrations (see 40 CFR 51.46).

In either case, to satisfy the demonstration requirement the State should project emissions for the 10-year period following redesignation, either for the purpose of showing that emissions will not increase over the attainment inventory or for conducting modeling.⁷ The projected inventory should consider future growth, including population and industry, should be consistent

⁷Guidance for projecting emissions may be found in the emissions inventory guidance cited in footnote 6.

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with the attainment inventory, and should document data inputs and assumptions. All elements of the demonstration (e.g., emission projections, new source growth, and modeling) should be consistent with current EPA modeling guidance.⁸ For O₃ and CO, the projected emissions should reflect the expected actual emissions based on enforceable emission rates and typical production rates.

For CO, a State should address the areawide component of the maintenance demonstration either by showing that future CO emissions will not increase or by conducting areawide modeling. Preferably, the State should carry out hot-spot modeling that is consistent with the Guideline on Air Quality Models (Revised), in order to demonstrate maintenance of the NAAQS. In particular, if the nonattainment problem is related to a pattern of hot-spots then hot-spot modeling should generally be conducted. However, hot-spot modeling is not automatically required. For example, if the nonattainment problem was related solely to stationary point sources, or if highway improvements have been implemented and the associated emission reductions and travel characteristics can be qualitatively documented, then hot-spot modeling is not required. In such cases, adequate documentation as well as the concurrence of Headquarters is needed.

Any assumptions concerning emission rates must reflect permanent, enforceable measures. In other words, a State generally cannot take credit in the maintenance demonstration for reductions unless there are regulations in place requiring those reductions or the reductions are otherwise shown to be permanent. Therefore, the State will be expected to maintain its implemented control strategy despite redesignation to attainment, unless such measures are shown to be unnecessary for maintenance or are replaced with measures that achieve equivalent reductions (see additional discussion under "Contingency Plan"). Emission reductions from source shutdowns can be considered permanent and enforceable to the extent that those shutdowns have been reflected in the SIP and all applicable permits have been modified accordingly.

Modeling used to demonstrate attainment may be relied upon in the maintenance demonstration where the modeling conforms to current EPA guidance and where the State has projected no significant changes in the modeling inputs during the intervening time. Where the original attainment demonstration may no longer be relied upon, States will be expected to remodel using current

⁸The EPA-approved modeling guidance may be found in the following documents: "Guideline on Air Quality Models (Revised)," OAQPS, RTP, NC (EPA-450/2-78-027R), July 1986; and "PM-10 SIP Development Guideline," OAQPS, RTP, NC (EPA-450/2-86-001), June 1987.

EPA referenced techniques.⁹ This may be necessary where, for example, there has been a change in emissions or a change in the siting of new sources or modifications such that air quality may no longer be accurately represented by the existing modeling.

c. Monitoring Network

Once an area has been redesignated, the State should continue to operate an appropriate air quality monitoring network, in accordance with 40 CFR Part 58, to verify the attainment status of the area. The maintenance plan should contain provisions for continued operation of air quality monitors that will provide such verification. In cases where measured mobile source parameters (e.g., vehicle miles traveled congestion) have changed over time, the State may also need to perform a saturation monitoring study to determine the need for, and location of, additional permanent monitors.

d. Verification of Continued Attainment

Each State should ensure that it has the legal authority to implement and enforce all measures necessary to attain and to maintain the NAAQS. Sections 110(a)(2)(B) and (F) of the Clean Air Act, as amended, and regulations promulgated at 40 CFR 51.110(k), suggest that one such measure is the acquisition of ambient and source emission data to demonstrate attainment and maintenance.

Regardless of whether the maintenance demonstration is based on a showing that future emission inventories will not exceed the attainment inventory or on modeling, the State submittal should indicate how the State will track the progress of the maintenance plan. This is necessary due to the fact that the emission projections made for the maintenance demonstration depend on assumptions of point and area source growth.

One option for tracking the progress of the maintenance demonstration, provided here as an example, would be for the State to periodically update the emissions inventory. In this case, the maintenance plan should specify the frequency of any planned inventory updates. Such an update could be based, in part, on the annual AIRS update and could indicate new source growth and other changes from the attainment inventory (e.g., changes in vehicle miles travelled or in traffic patterns). As an alternative to a complete update of the inventory, the State may choose to do a comprehensive review of the factors that were used in developing the attainment inventory to show no significant change. If this review does show a significant change, the State should then perform an update of the inventory.

⁹See references for modeling guidance cited in footnote 8.

Where the demonstration is based on modeling, an option for tracking progress would be for the State to periodically (typically every 3 years) reevaluate the modeling assumptions and input data. In any event, the State should monitor the indicators for triggering contingency measures (as discussed below).

e. Contingency Plan

Section 175A of the Act also requires that a maintenance plan include contingency provisions, as necessary, to promptly correct any violation of the NAAQS that occurs after redesignation of the area. These contingency measures are distinguished from those generally required for nonattainment areas under section 172(c)(9) and those specifically required for O₃ and CO nonattainment areas under sections 182(c)(9) and 187(a)(3), respectively. For the purposes of section 175A, a State is not required to have fully adopted contingency measures that will take effect without further action by the State in order for the maintenance plan to be approved. However, the contingency plan is considered to be an enforceable part of the SIP and should ensure that the contingency measures are adopted expeditiously once they are triggered. The plan should clearly identify the measures to be adopted, a schedule and procedure for adoption and implementation, and a specific time limit for action by the State. As a necessary part of the plan, the State should also identify specific indicators, or triggers, which will be used to determine when the contingency measures need to be implemented.

Where the maintenance demonstration is based on the inventory, the State may, for example, identify an "action level" of emissions as the indicator. If later inventory updates show that the inventory has exceeded the action level, the State would take the necessary steps to implement the contingency measures. The indicators would allow a State to take early action to address potential violations of the NAAQS before they occur. By taking early action, States may be able to prevent any actual violations of the NAAQS and, therefore, eliminate the need on the part of EPA to redesignate an area to nonattainment.

Other indicators to consider include monitored or modeled violations of the NAAQS (due to the inadequacy of monitoring data in some situations). It is important to note that air quality data in excess of the NAAQS will not automatically necessitate a revision of the SIP where implementation of contingency measures is adequate to address the cause of the violation. The need for a SIP revision is subject to the Administrator's discretion.

The EPA will review what constitutes a contingency plan on a case-by-case basis. At a minimum, it must require that the State will implement all measures contained in the Part D nonattainment

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plan for the area prior to redesignation [see section 175A(d)]. This language suggests that a State may submit a SIP revision at the time of its redesignation request to remove or reduce the stringency of control measures. Such a revision can be approved by EPA if it provides for compensating equivalent reductions. A demonstration that measures are equivalent would have to include appropriate modeling or an adequate justification. Alternatively, a State might be able to demonstrate (through EPA-approved modeling) that the measures are not necessary for maintenance of the standard. In either case, the contingency plan would have to provide for implementation of any measures that were reduced or removed after redesignation of the area.

Summary

As stated previously, this memorandum consolidates EPA's redesignation and maintenance plan guidance and Regions should rely upon it as a general framework in drafting Federal Register notices. It is strongly suggested that the Regional Offices share this document with the appropriate States. This should give the States a better understanding of what is expected from a redesignation request and maintenance plan under existing policy. Any necessary changes to existing Agency policy will be made through our action on specific redesignation requests and the review of section 175A maintenance plans for these particular areas, both of which are subject to notice and comment rulemaking procedures. Thus, in applying this memorandum to specific circumstances in a rulemaking, Regions should consider the applicability of the underlying policies to the particular facts and to comments submitted by any person. If your staff members have questions which require clarification, they may contact Sharon Reinders at (919) 541-5284 for O₃- and CO-related issues, and Eric Ginsburg at (919) 541-0877 for SO₂-, PM-10-, and Pb-related issues.

cc: Chief, Air Branch, Regions I-X
John Cabaniss, OMS
Denise Devoe, OAQPS
Bill Laxton, TSD
Rich Ossias, OGC
John Rasnic, SSCD
John Seitz, OAQPS
Mike Shapiro, OAR
Lydia Wegman, OAQPS

**STATEMENT OF CONSIDERATION
RELATING TO SIP REVISION FOR BOYD COUNTY REDESIGNATION TO
ATTAINMENT
FOR SULFUR DIOXIDE
Amended After Comments**

Environmental and Public Protection Cabinet

Department for Environmental Protection
Division for Air Quality

(1) A public hearing on the State Implementation Plan (SIP) revision for redesignation of Boyd County to attainment for sulfur dioxide was held on January 26, 2005, at 10:00 a.m. at the Division for Air Quality office located at 803 Schenkel Lane, Frankfort, Kentucky, 40601. Written comments were received during the public comment period.

(2) The following individuals attended and/or provided written comments:

Name and Title

Darryl Bowling
Thomas Leigh
Kay T. Prince, Chief
Thomas Saylor

Organization

Citizen, Catlettsburg, KY
Catlettsburg Refining, LLC
U.S. EPA Region 4, Air Planning Branch
FIVCO ADD

(3) The following individuals from the Environmental and Public Protection Cabinet responded to the comments:

| | |
|---|--------------------------|
| Susan Weaver, Environmental Technologist III* | Division for Air Quality |
| Gregg Smith, Environmental Technologist III | Division for Air Quality |
| John Gowins, Environmental Control Supervisor | Division for Air Quality |

* Agency moderator

Response to Comments on the proposed revision to the State Implementation Plan (SIP) to redesignate Boyd County as attainment for the sulfur dioxide National Ambient Air Quality Standards (NAAQS).

- 1. (a) Comment:** For any individual to burn any old structure is harmful and illegal.
Darrell Bowling, citizen, Catlettsburg, KY

(b) Response: The Cabinet acknowledges this comment, however it is outside the scope of this proposed SIP revision.
- 2. (a) Comment:** For any government agency to burn a structure, they are supposed to be positive that there is no asbestos present.
Darrell Bowling, citizen, Catlettsburg, KY

(b) Response: The Cabinet acknowledges this comment, however it is outside the scope of this proposed SIP revision.
- 3. (a) Comment:** Burning vinyl siding, flooring, insulation, and miscellaneous items that may contain asbestos is the worst thing that can be done.
Darrell Bowling, citizen, Catlettsburg, KY

(b) Response: The Cabinet acknowledges this comment, however it is outside the scope of this proposed SIP revision.
- 4. (a) Comment:** If there is a small chance that the environment can be damaged, or asbestos released in such a manner, we ought to take the option to burn off the table.
Darrell Bowling, citizen, Catlettsburg, KY

(b) Response: The Cabinet acknowledges this comment, however it is outside the scope of this proposed SIP revision.
- 5. (a) Comment:** There was no consideration given to the close proximity of other people's homes in the area of the structure to be burned.
Darrell Bowling, citizen, Catlettsburg, KY

(b) Response: The Cabinet acknowledges this comment, however it is outside the scope of this proposed SIP revision.
- 6. (a) Comment:** The Division for Air Quality is funded by taxpayers and does not have the authority to authorize or condone any practice that would be harmful to the environment or to the people of Kentucky.
Darrell Bowling, citizen, Catlettsburg, KY

(b) Response: The Cabinet acknowledges this comment.

7. (a) **Comment:** It is assumed that the base year is 2003 which corresponds to the year of emissions used in the modeling.

Kay T. Prince, USEPA

(b) **Response:** The Cabinet concurs that the base year is 2003.

8. (a) **Comment:** The maintenance plan must provide for attainment at least 10 years from the base year.

Kay T. Prince, USEPA

(b) **Response:** The core of the Kentucky maintenance plan for Boyd County is the revised emission limits in the permit for the key contributing source, Calgon Carbon Corporation. Specifically, revisions to the Calgon source permit reduced allowables for SO₂, particularly at the shortest stacks where previous modeling had demonstrated exceedances due to high concentrations from severe downwash effects.

Air quality improvement in the Boyd County nonattainment area is attributed to these lower SO₂ emission limits imposed on the facility that most contributed to the county's nonattainment status. Emissions were modeled with control measures in place. The data submitted by Kentucky shows modeled attainment of the SO₂ NAAQS. The control limits are established in federally enforceable operating conditions cited in a source permit that does not expire and automatically becomes part of any reissued permit, therefore providing for maintenance of the SO₂ NAAQS for at least 10 years.

Furthermore, if any major construction is proposed in the future, then PSD will apply and the applicant will be required to demonstrate that they would not cause or contribute to a NAAQS violation.

As well, Kentucky's maintenance plan reflects existing federal measures, including the acid rain program and rules that require lower sulfur fuels for gasoline-fueled and diesel-fueled vehicles. Both the emissions from the acid rain program and the reductions in motor vehicle SO₂ emissions expected over the next few years will ensure that SO₂ concentrations will remain in compliance with the SO₂ standards.

9. (a) **Comment:** Contingency measures are required should a monitored violation or modeled violation of the SO₂ NAAQS occur. The submittal must describe the triggers that will be used to determine when the contingency measures need to be implemented, identify the measures adopted, a schedule and procedures for adoption and implementation, and a specific time limit for action by the Commonwealth.

Kay T. Prince, USEPA

(b) **Response:** The General Preamble for the Implementation of Title I of the CAA Amendments of 1990, (57 FR 13498), states that SO₂ measures present special considerations because they are based upon what is necessary to attain the NAAQS. Because the SO₂ control measures are well established and understood, they are far less prone to uncertainty. It would be unlikely for an area to implement the necessary

emissions control yet fail to attain and maintain the SO₂ NAAQS. Therefore, contingency measures for SO₂ need only consist of a comprehensive program to identify sources of the violations of SO₂ NAAQS and to undertake an aggressive follow-up for compliance and enforcement. Results from the modeling were used for identifying culpable sources and implementing lower SO₂ limits in the appropriate permits. Thus, the Division for Air Quality has put into place new, considerably lower, allowables for Calgon Corporation, which are federally enforceable and can be changed only under a major permit revision. Thus for SO₂, the Division for Air Quality has identified and addressed the sources of violation of the SO₂ NAAQS and has committed to an aggressive follow-up where this agency has the necessary enforcement and compliance programs, as well as the means to identify violators, thus satisfying the contingency measures requirement.

- 10. (a) Comment:** Referring to the guidelines outlined in the Calcagni memorandum (September 4, 1992), the submittal must identify what is needed for verification of continued attainment that must be included in your maintenance plan.

Kay T. Prince, USEPA

- (b) Response:** Growth in the area will be monitored by KYDAQ keeping track of new permit applications, requests for permit amendments, and observing the annual emissions inventory that all facilities with permits must submit to the KYDAQ. Future SO₂ emissions are not likely to exceed the ambient standards because of Kentucky's permitting program and the requirement for PSD demonstration.

The only additional condition for ensuring maintenance is to ensure through ambient monitoring that SO₂ concentrations remain within NAAQS attainment levels.

- 11. (a) Comment:** The final SIP revision must specify the relevant portions of the Title V permits for Calgon, specifically the SO₂ emission limits, that are being added to the Kentucky SIP. The Agency will incorporate these specified provisions as source-specific SIP revisions.

Kay T. Prince, USEPA

- (b) Response:** The Cabinet has identified the relevant portions of the Title V permit for Calgon Carbon Corporation in Table 2 on page 6 of the Boyd County redesignation request for attainment of the sulfur dioxide NAAQS.



Ernie Fletcher
Governor

Teresa J. Hill
Secretary

Commonwealth of Kentucky
Environmental and Public Protection Cabinet

Office of the Secretary
Capital Plaza Tower
Frankfort, Kentucky 40601

October 19, 2007

Mr. James I. Palmer, Jr.
Regional Administrator
U.S. EPA, Region 4
Sam Nunn Atlanta Federal Center
61 Forsyth Street, SW
Atlanta, Georgia 30303

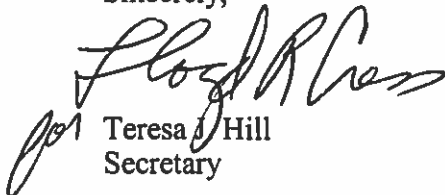
Dear Mr. Palmer:

The Environmental and Public Protection Cabinet hereby submits for final approval a source specific revision to Kentucky's State Implementation Plan (SIP). This revision, for the Tennessee Valley Authority (TVA) Paradise facility, will remove the 0-87-012 operating permit from Kentucky's SIP and replace it with emission limitations for units at the Paradise facility that are overall, slightly more stringent than those incorporated in the aforementioned permit.

Five copies of the proposed revision are enclosed. A public hearing was held August 6, 2007, in the Conference Room of the Division for Air Quality. The Cabinet's response to information received during the public comment period is included in Appendix C.

Your prompt consideration of this request is appreciated. If you have any questions or comments concerning this matter, please contact Lona Brewer at the Division for Air Quality at (502) 573-3382.

Sincerely,



Teresa J. Hill
Secretary

TJH/lme
Enclosures

**Kentucky's
Tennessee Valley Authority (TVA)
Paradise Facility
State Implementation Plan (SIP)**



**prepared &
submitted by**

**Kentucky Division for Air Quality
John S. Lyons
Director**

**Kentucky Environmental and Public Protection Cabinet
Teresa J. Hill
Secretary**

October 2007

PROPOSED STATE IMPLEMENTATION PLAN REVISION

TENNESSEE VALLEY AUTHORITY (TVA) PARADISE FACILITY MUHLENBERG COUNTY, KENTUCKY

SO₂ Emission Limits

PURPOSE

The Kentucky Environmental and Public Protection Cabinet is proposing a revision to the Commonwealth's State Implementation Plan (SIP). In *Federal Register* notice 35326 dated August 25, 1989, U.S. EPA approved a redistribution of allowable sulfur dioxide emissions at the Tennessee Valley Authority (TVA) Paradise Steam Plant located in Muhlenberg County, Kentucky. The effective date of this action was September 25, 1989.

This source specific revision for the Tennessee Valley Authority (TVA) Paradise plant will remove the O-87-012 operating permit from Kentucky's SIP and replace it with emission limitations for units at the Paradise facility that are overall, slightly more stringent than those incorporated in the aforementioned permit. Specifically, this revision will alter the unit-specific sulfur dioxide emission limits for the units at the facility.

PLANT SPECIFICS

The Paradise Steam Plant is a three unit coal-fired facility operated by the Tennessee Valley Authority, located in Muhlenberg County. The facility consists of three cyclone-fired boilers and ancillary support equipment including heating boilers, cooling towers and material handling equipment. All three coal-fired boilers are equipped with staged overfired air and selective catalytic reduction modules for nitrogen oxides control. Boiler Units 1 and 2 are equipped with venturi-type limestone slurry flue gas desulfurization (FGD) scrubbers. Boiler Unit 3 is equipped with an electrostatic precipitator and a wet limestone FGD scrubber. Units 1 and 2 have a nominal electric generating capacity of 704 megawatts (MW) each. Unit 3 has a nominal electric generating capacity of 1150 MW.

Muhlenberg County is currently classified in 40 CFR Part 81 as attainment for both the primary and secondary National Ambient Air Quality Standards (NAAQS) for sulfur dioxide. The area had previously been designated as nonattainment for the secondary SO₂ standard but was redesignated by U.S. EPA as attainment effective October 19, 1998. (FR notice dated August 18, 1998)

BACKGROUND

On June 29, 1987, the Kentucky Natural Resources and Environmental Protection Cabinet submitted a source specific State Implementation Plan revision to U.S. EPA to redistribute allowable sulfur dioxide emissions at the TVA, Paradise Steam Plant located in Muhlenberg County. In a *Federal Register* notice dated August 25, 1989, U.S. EPA granted approval of that source specific SIP amendment, with an effective date of September 25, 1989. The redistribution allowed for the following emission rates for SO₂ at the Paradise facility.

TABLE 1
Paradise Emission Rate Limits
1989 SIP Revision

| Unit # | Emission Rate |
|----------------|----------------------|
| Unit #1 | 1.2 lb/MMBTU |
| Unit #2 | 1.2 lb/MMBTU |
| Unit #3 | 5.4 lb/MMBTU |

This revision provided unit-specific sulfur dioxide (SO₂) emission limits of 1.2 lb/MMBTU for Units 1 and 2 and 5.4 lb/MMBTU on Unit 3. These limits were an averaged equivalent to the 3.1 lb/MMBTU emission limit requirement specified for each unit prior to the approval of the revision. The 1989 approval was based on modeling that demonstrated that the ambient air quality standards continued to be protected when the plant was operated at the revised emission limits.

CURRENT ACTIVITY

Based on the most recent information available it is possible for the Paradise facility to meet the previously set 1.2 lb/MMBTU limit on both Units 1 and 2, and meet a more stringent level of 1.2 lb/MMBTU on Unit 3 when the scrubber is operating and 3.1 lb/MMBTU, when the scrubber is bypassed, on a 24-hour average. The scrubber on unit 3 is a single-module scrubber and must be

taken off-line periodically for planned, necessary maintenance. Provisions limiting the number of hours when the scrubber can be by-passed are conditioned in the permit and shall not exceed 720 hours in any 12-month period.

This revision will remove the 1989 amendment to Kentucky's State Implementation Plan which incorporated the above stated emission limits found in O-87-012 issued on June 29, 1987, and replace it with the following unit specific emission limits which are more stringent than those found in the previously cited permit. These new, more stringent limits will be incorporated into the Title V Operating Permit for the Paradise Facility. The new allowable emission rates are listed below in Table 2.

TABLE 2
New Emission Rates
TVA – Paradise Facility

| Unit # | Emission rate
(averaging period -- 24 hour) |
|-----------------|--|
| Unit #1 | 1.2 lb/MMBTU |
| Unit #2 | 1.2 lb/MMBTU |
| Unit #3* | 1.2 lb/MMBTU or 3.1 lb/MMBTU* |

**Bypass of the scrubber shall be limited to 720 operating hours in any 12-consecutive months.*

ANALYSIS

A clear reading of emission rate requirements found in 401 KAR 61:015 would allow an emission rate of 3.1 lb/MMBTU for each unit at the Paradise facility. However, with the establishment of the 1989 alternative unit emission rates approved incorporated into Kentucky's SIP, reverting back to the 3.1 pound rate could be construed as a slight weakening of currently applicable requirements.

Several scenarios were reviewed in an effort to ascertain the potential differences in allowable emission rates using historic, average, and conservative heat input rates to calculate and compare potential allowable emission rates. Appendix A provides information that shows allowable potential and projected overall sulfur dioxide emission levels from the Paradise facility will decrease with this revision, once approved by U.S. EPA.

MONITORING / RECORD KEEPING / REPORTING REQUIREMENTS

In order to ensure adherence with these revised emission rates, the facility has numerous monitoring, record keeping and reporting requirements. The following provisions from V-07-018 are incorporated in this revision.

Records shall be kept in accordance with 401 KAR 61:005, Section 3, Emission Monitoring and 61:015, Section 6, Monitoring of Operations; with the exception that the records shall be kept for a period of five (5) years.

Detailed monitoring, record keeping and reporting requirements are outlined for emission points 1, 2 and 3 in Section B of the Title V operating permit, being issued for the Paradise Facility. Specifically, the following requirements ensure adherence with the revised emission limitations and are included in Appendix B. Additionally, Section F of the permit includes generally applicable monitoring, recordkeeping and reporting requirements.

**V-07-018
Section B**

Units 1 & 2

| | |
|----------------------------|---------------|
| Monitoring Requirements | 4.a. and 4.c. |
| Recordkeeping Requirements | 5.a. and 5.b. |
| Reporting Requirements | 6.a. |

Unit 3

| | |
|----------------------------|---------------------------------------|
| Monitoring Requirements | 4.d., 4.f., and 4.i. |
| Recordkeeping Requirements | 5.a., 5.b., and 5.f. |
| Reporting Requirements | 6.a(i), a(iii), a(iv), a(v), and 6.d. |

APPENDIX A

**Considerations for Appropriate
Heat Input Rates to Calculate Projected Emissions**

for
**TVA Paradise
Muhlenberg County, Kentucky
Source Specific SIP Revision
SO₂ Limits**

October 2007

APPENDIX A

Technical Support Documentation Considerations for Appropriate Heat Input Rates to Calculate Projected Emissions

| | Highest 24-hr average heat input reported by TVA in mmBtu/hr | Ten percent factor | Conservative 24-hr avg. heat input in mmBtu/hr | Average 1-hr heat input in years 1990-1995 in mmBtu/hr | Heat input rate from SIP operating permit in mmBtu/hr |
|--------|--|--------------------|--|--|---|
| Unit 1 | 7,256 | 1.1 | 7982 | 6,023 | 6,305 |
| Unit 2 | 7,772 | 1.1 | 8549 | 6,247 | 6,305 |
| Unit 3 | 13,035 | 1.1 | 14339 | 8,530 | 10,390 |

| | Emission rate lb/mmBtu | Heat input (mmBtu/hr) | Emissions lb/hr | Total (lb/hr) |
|------------------------------------|------------------------|-----------------------|-----------------|----------------|
| Previous Permit Calculation | | | | |
| Unit 1 | 1.20 | 6305 | 7566 | |
| Unit 2 | 1.20 | 6305 | 7566 | |
| Unit 3 | 5.40 | 10390 | 56106 | |
| Total | | | | 71,238 |

| | | | | |
|------------------------------------|------|-------|-------|---------------|
| Underlying Rule Calculation | | | | |
| Unit 1 | 3.10 | 6305 | 19546 | |
| Unit 2 | 3.10 | 6305 | 19546 | |
| Unit 3 | 3.10 | 10390 | 32209 | |
| Total | | | | 71,300 |

| | | | | |
|--|-------|-------|-------|---------------|
| Proposed New Allowable Emission Rates using Conservative Heat input rates | | | | |
| Unit 1 | 1.20 | 7982 | 9578 | |
| Unit 2 | 1.20 | 8549 | 10259 | |
| Unit 3* | 1.20* | 14339 | 17207 | |
| Total | | | | 37,044 |

| | | | | |
|---|------|-------|------|---------------|
| Estimate of future actual annual emissions using conservative Heat input | | | | |
| Unit 1 | 0.80 | 7982 | 6386 | |
| Unit 2 | 0.80 | 8549 | 6839 | |
| Unit 3 | 0.25 | 14339 | 3585 | |
| Total | | | | 16,810 |

*Emission rate will be 1.20 lb/MMBtu when the scrubber is operating and 3.1 lb/MMBtu when the scrubber is bypassed.

APPENDIX B

Monitoring / Record Keeping & Reporting Requirements

For
**TVA Paradise
Muhlenberg County Kentucky
Source Specific SIP Revision
SO₂ Limits**

October 2007

APPENDIX B

Monitoring, Recordkeeping & Reporting Provisions from V-07-018

Units 1 & 2

4. Specific Monitoring Requirements:

- a. Pursuant to 401 KAR 61:005, Section 3 and Performance Specification 2 of Appendix B to 40 CFR 60 or 40 CFR 75, Appendix A, and 401 KAR 52:020, Section 26, continuous emission monitoring (CEM) systems shall be installed, calibrated, maintained, and operated for measuring sulfur dioxide emissions and either oxygen or carbon dioxide emissions. If any 24-hour average sulfur dioxide value exceeds the standard, the permittee shall, as appropriate, initiate an investigation of the cause of the exceedance and/or the CEM system and make any necessary repairs or take corrective actions as soon as practicable.
- c. Pursuant to 401 KAR 61:015, Section 6(3) the rate of each fuel burned shall be measured daily and recorded. The heating value and ash content of fuels shall be ascertained at least once per week and recorded. The average electrical output, and the minimum and maximum hourly

5. Specific Recordkeeping Requirements:

- a. Records shall be kept in accordance with 401 KAR 61:005, Section 3(16)(f) and 61:015, Section 6, with the exception that the records shall be maintained for a period of five years.
- b. Records of the following shall be maintained:
 - (i) data collected either by the continuous monitoring systems or as necessary to convert monitoring data to the units of the applicable standard;
 - (ii) the results of all compliance tests;
 - (iii) fuel analyses;
 - (iv) the rate of fuel burned for each fuel on a daily basis;
 - (v) the heating value and ash content on a weekly basis; and,
 - (vi) the average electrical output and the minimum and maximum hourly generation rate on a daily basis.

6. Specific Reporting Requirements:

- a. Pursuant to 401 KAR 61:005, Section 3 (16), minimum data requirements which follow shall be maintained and furnished in the format specified by the Division.

- (i) Owners or operators of facilities required to install continuous monitoring systems for sulfur dioxide or those utilizing fuel sampling and analysis for sulfur dioxide emissions shall submit for every calendar quarter, a written report of excess emissions and the nature and cause of the excess emissions if known. The averaging period used for data reporting should correspond to the emission standard averaging period, which is a twenty-four (24) hour averaging period. All quarterly reports shall be postmarked by the thirtieth (30th) day following the end of each calendar quarter.
- (ii) For gaseous measurements, the summary shall consist of hourly averages in the units of the applicable standard. The hourly averages shall not appear in the written summary, but shall be provided in electronic files only.
- (iii) The date and time identifying each period during which the continuous monitoring system was inoperative, except for zero and span checks, and the nature of system repairs or adjustments shall be reported. Proof of continuous monitoring system performance whenever system repairs or adjustments have been made is required.
- (iv) When no excess emissions have occurred and the continuous monitoring system(s) have not been inoperative, repaired, or adjusted, such information shall be included in the report.

Unit 3

4. Specific Monitoring Requirements:

- d. Pursuant to 401 KAR 61:005, Section 3 and Performance Specification 2 of Appendix B to 40 CFR 60 or 40 CFR 75, Appendix A, and 401 KAR 52:020, Section 26, continuous emission monitoring (CEM) systems shall be installed, calibrated, maintained, and operated for measuring sulfur dioxide emissions and either oxygen or carbon dioxide emissions. If any 24-hour average sulfur dioxide value exceeds the standard, the permittee shall, as appropriate, initiate an investigation of the cause of the exceedance and/or the CEM system and make any necessary repairs or take corrective actions as soon as practicable.
- f. Pursuant to 401 KAR 61:015, Section 6(3) the rate of each fuel burned shall be measured daily and recorded. The heating value and ash content of fuels shall be ascertained at least once per week and recorded. The average electrical output, and the minimum and maximum hourly generation rate shall be measured and recorded daily.
- i. The duration of any scrubber by-pass shall be monitored.

5. Specific Record Keeping Requirements:

- a. Records shall be kept in accordance with 401 KAR 61:005, Section 3(16)(f) and 61:015, Section 6, with the exception that the records shall be maintained for a period of five years.

- b. Records of the following shall be maintained:
 - (i) data collected either by the continuous monitoring systems or as necessary to convert monitoring data to the units of the applicable standard;
 - (ii) the results of all compliance tests;
 - (iii) percentage of the COM data (excluding exempted time periods) showing excursions above the opacity standard and the opacity indicator level;
 - (iv) fuel analyses;
 - (v) the rate of fuel burned for each fuel on a daily basis;
 - (vi) the heating value and ash content on a weekly basis; and,
 - (vii) the average electrical output and the minimum and maximum hourly generation rate on a daily basis.

- f. The duration of any scrubber by-pass shall be recorded.

6. **Specific Reporting Requirements:**

- a. Pursuant to 401 KAR 61:005, Section 3 (16), minimum data requirements which follow shall be maintained and furnished in the format specified by the Division.
 - (i) Owners or operators of facilities required to install continuous monitoring systems for sulfur dioxide or those utilizing fuel sampling and analysis for sulfur dioxide emissions shall submit for every calendar quarter, a written report of excess emissions and the nature and cause of the excess emissions if known. The averaging period used for data reporting should correspond to the emission standard averaging period, which is a twenty-four (24) hour averaging period. All quarterly reports shall be postmarked by the thirtieth (30th) day following the end of each calendar quarter.

 - (iii) For gaseous measurements, the summary shall consist of hourly averages in the units of the applicable standard. The hourly averages shall not appear in the written summary, but shall be provided in electronic files only.

 - (iv) The date and time identifying each period during which the continuous monitoring system was inoperative, except for zero and span checks, and the nature of system repairs or adjustments shall be reported. Proof of continuous monitoring system performance whenever system repairs or adjustments have been made is required.

 - (v) When no excess emissions have occurred and the continuous monitoring system(s) have not been inoperative, repaired, or adjusted, such information shall be included in the report.

- d. The permittee shall include in the semi-annual report required by Section F.5, the duration in hours of any scrubber by-pass based on a 12 month rolling total.

APPENDIX C

Public Hearing Notice & Response to Comments Received

For
**TVA Paradise
Muhlenberg County Kentucky
Source Specific SIP Revision
SO₂ Limits**

October 2007

**KENTUCKY DIVISION FOR AIR QUALITY
NOTICE OF PUBLIC HEARING
TO REVISE KENTUCKY'S STATE IMPLEMENTATION PLAN**

The Kentucky Environmental and Public Protection Cabinet will conduct a public hearing on August 6, 2007, at 10:00 a.m. (EDT) in the Conference Room of the Division for Air Quality, 803 Schenkel Lane, Frankfort, KY. This hearing is being held to receive comments on a source specific revision to the Kentucky State Implementation Plan (SIP) for the Tennessee Valley Authority (TVA) Paradise facility, located in Muhlenburg County. This revision, when approved by U.S. EPA, will remove the 0-87-012 operating permit from Kentucky's SIP and replace it with emission limitations for units at the Paradise facility that are overall, slightly more stringent than those incorporated in the aforementioned permit. Specifically, this revision will alter the unit-specific sulfur dioxide emission limits for the units at the facility

This hearing is open to the public and all interested persons will be given the opportunity to present testimony. To assure that all comments are accurately recorded, the Division requests that oral comments presented at the hearing also be provided in written form, if possible. To be considered part of the hearing record, comments must be received by the close of the hearing. Comments should be sent to the contact person.

The full text of the proposed SIP revision is available for public inspection and copying during regular business hours (8:00 a.m. to 4:30 p.m.) at the locations listed below. Any individual requiring copies may submit a request to the Division for Air Quality in writing, by telephone, or by fax. Requests for copies should be directed to the contact person. In addition, an electronic version of the proposed SIP revision document and relevant attachments can be downloaded from the Division for Air Quality's web site at:

http://www.air.ky.gov/homepage_repository/Public+Hearings.htm

The hearing facility is accessible to people with disabilities. An interpreter or other auxiliary aid or service will be provided upon request. Please direct these requests to the contact person.

CONTACT PERSON: Leslie Eggen, Environmental Technologist I, Division for Air Quality, 803 Schenkel Lane, Frankfort, Kentucky 40601. Phone (502) 573-3382; Fax (502) 573-3787; E-mail lesliem.eggen@ky.gov.

The Environmental and Public Protection Cabinet does not discriminate on the basis of race, color, national origin, sex, age, religion, or disability and provides, upon request, reasonable accommodation including auxiliary aids and services necessary to afford an individual with a disability an equal opportunity to participate in all services, programs, and activities.

Lou-Metro Air Pollution Control District
850 Barret Avenue, Suite 205
Louisville, KY 40204-1745

Ashland Regional Office
1550 Wolohan Drive, Suite 1
Ashland, KY 41102-8942

Bowling Green Regional Office
1508 Westen Avenue
Bowling Green, KY 42104

Florence Regional Office
8020 Veterans Mem Dr, Suite 110
Florence, KY 41042

Frankfort Regional Office
643 Teton Trail, Suite B
Frankfort, KY 40601-1758

Hazard Regional Office
233 Birch Street, Suite 2
Hazard, KY 41701-2179

London Regional Office
875 S Main Street
London, KY 40741

Owensboro Regional Office
3032 Alvey Park Dr W, Suite 700
Owensboro, KY 42303-2191

Paducah Regional Office
130 Eagle Nest Drive
Paducah, KY 42003-0823

Muhlenberg County Clerk
100 South Main Street
Greenville, KY 42345

**STATEMENT OF CONSIDERATION
RELATING TO SOURCE SPECIFIC SIP REVISION FOR THE TENNESSEE VALLEY
AUTHORITY (TVA) PARADISE FACILITY TO REMOVE THE 0-87-012 OPERATING
PERMIT TO ALTER THE UNIT-SPECIFIC SULFUR DIOXIDE EMISSION LIMITS
FOR THE UNITS AT THE FACILITY.
Amended After Comments**

Environmental and Public Protection Cabinet

Department for Environmental Protection
Division for Air Quality

- (1) A public hearing on the source specific revision to the Kentucky State Implementation Plan (SIP) for the Tennessee Valley Authority (TVA) Paradise facility to remove the 0-87-012 operating permit from Kentucky's SIP and replace it with emission limitations for units at the Paradise facility that are overall, slightly more stringent than those incorporated in the aforementioned permit was held on August 6, 2007, at 10:00 a.m. at the Division for Air Quality office located at 803 Schenkel Lane, Frankfort, Kentucky, 40601. Written comments were received during the public comment period.

- (2) The following individuals attended and/or provided written comments:

| <u>Name and Title</u> | <u>Organization</u> |
|--------------------------|-----------------------|
| Robert Ukeiley, Attorney | Law Office, Berea, KY |
| Kay Prince | U.S. EPA |
| Skip Markham | TVA |

- (3) The following individuals from the Environmental and Public Protection Cabinet attended the public hearing:

| | |
|---|--------------------------|
| Leslie Eggen, Environmental Technologist I* | Division for Air Quality |
| John Gowins, Environmental Control Supervisor | Division for Air Quality |
| Lona Brewer, Environmental Control Manager | Division for Air Quality |

* Agency moderator

Response to Comments on the proposed source specific revision to the Kentucky State Implementation Plan (SIP) for the Tennessee Valley Authority (TVA) Paradise facility to remove the 0-87-012 operating permit from Kentucky's SIP and replace it with emission limitations for units at the Paradise facility that are overall, slightly more stringent than those incorporated in the aforementioned permit.

1. (a) **Comment:** It is important that the Kentucky Division of [sic] Air Quality (DAQ) ensures that SO_x emissions from Paradise are reduced as much as possible as quickly as possible. Unfortunately, the SIP revision, as currently written does not do that.

Robert Ukeiley, law office, Berea, KY

- (b) **Response:** The Cabinet does not concur. This SIP revision and the corresponding permit provisions further limit the allowable SO₂ emissions from Unit #3 within the scope of regulatory requirements.

2. (a) **Comment:** The SIP revision must include limitations on the total mass of SO_x emitted into Kentucky's air. Only with total mass emission limits can the SO_x National Ambient Air Quality Standard be protected.

Robert Ukeiley, law office, Berea, KY

- (b) **Response:** The Cabinet does not concur. The Kentucky regulation that applies to these units (401 KAR 61:015. Existing indirect heat exchangers) specifies in Section 3 that the heat input shall be used to determine the allowable emission in terms of pounds of effluent per million BTU heat input.

3. (a) **Comment:** There are two options in how to write this mass emission limit. One is to set a heat input limit, in million British thermal units (MMBtu) per hour, and an emission limit in pounds (lbs) per MMBtu. The second option is to write the limit in pounds per hour.

Robert Ukeiley, law office, Berea, KY

- (b) **Response:** See response to comment #2 above.

4. (a) **Comment:** A limit that just had an MMBtu/hour emission limit would be arbitrary as it would not ensure protection with a NAAQS and is not comparable to the current limit. Such a limit would also violate the Clean Air Act's anti-backsliding provisions.

Robert Ukeiley, law office, Berea, KY

- (b) **Response:** The Cabinet does not concur. The MMBtu/hour based limit is not arbitrary as 401 KAR 61:015 has been approved to Kentucky's SIP by U.S. EPA, and in place on these particular units since 1989. The proposed emission rate limits at Unit #1 and Unit #2 are identical to those limits that have been in place since 1989 as well. The change involves the lowering of the emission limit on Unit #3 from 5.4 lb/MMBtu to 1.2 lb/MMBtu during regular operation or 3.1 lb/MMBtu during maintenance. Since the overall emission limits stay the same on units #1 and #2, and the emission limit on unit #3 is lowered, there is no violation of the Clean Air Act's anti-backsliding provisions.
5. (a) **Comment:** There is no rational basis to conclude that the heat inputs recorded in the past will reflect the maximum heat inputs in the future. On the contrary, the NSR enforcement cases have shown that assumption to be incorrect.
Robert Ukeiley, law office, Berea, KY
- (b) **Response:** The Cabinet does not concur. Reviewing past years' heat inputs provides a documented analysis of the performance of the units and allows for an estimate of heat input values for the future. U.S. EPA utilized past heat input data to develop emission limits used in the NOx SIP Call, the Clean Air Interstate Rule (CAIR), and in the Clean Air Mercury Rule (CAMR).
6. (a) **Comment:** The SIP provision [sic] must make clear that emission limits apply all the time including during periods of startup, shutdown and malfunction.
Robert Ukeiley, law office, Berea, KY
- (b) **Response:** The cabinet agrees in part. Emissions during start-up shutdown, and malfunction are covered under 401 KAR 50:055 and 61:015 which have been incorporated into Kentucky's SIP.
7. (a) **Comment:** The Revised SIP provision must make clear that SOx continuous emissions monitoring systems (CEMS) will be used to determine compliance.
Robert Ukeiley, law office, Berea, KY
- (b) **Response:** The cabinet concurs. The permit, portions of which are incorporated into this SIP revision, has been so conditioned.
8. (a) **Comment:** 40 CFR § 51.214 already requires the Kentucky SIP to require CEMS and COMS at coal-fired electric generating units. To the extent that the Kentucky SIP does not fully incorporate 40 CFR § 51.214 it must.
Robert Ukeiley, law office, Berea, KY
- (b) **Response:** The cabinet concurs in part. This proposed revision deals only with TVA Paradise Facility. The pertinent portions of the permit dealing with monitoring, recordkeeping, and reporting related to CEMS and COMS for these units are incorporated as appropriate.

9. (a) **Comment:** The Revised SIP provision must make clear that CEMS can and will be used to determine compliance or non-compliance. It must also make clear that CEMS monitoring is required during all times, including periods of startup, shutdown and malfunction.
Robert Ukeiley, law office, Berea, KY
- (b) **Response:** The cabinet concurs in part. 401 KAR 50:055 and 401 KAR 50:060, incorporated into Kentucky's SIP provide that any information can be used to determine compliance with and enforce the SIP. Also, see response to comment #6.
10. (a) **Comment:** The scrubber at issue on Unit #3 is a single-module scrubber that cannot be maintained while operating. Consistent with standard operation and maintenance practices, a scrubber must be taken offline periodically for planned, necessary maintenance. EPA recommends that this information be included as part of the SIP revision or the technical support document.
Kay T. Prince, USEPA
- (b) The cabinet concurs and the requested SIP revision has been revised as noted.
11. (a) **Comment:** Kentucky appears to utilize an averaging time period of "any consecutive 12 month period" for the alternate emission limit of 3.1 lbs/MMBTU. To be consistent with the other limits as well as the basis for the hourly emission rate calculations (i.e., the reliance on a "conservative" 24-hour heat input rate), the appropriate averaging period for the alternate limit must be any 24-hour period.
Kay T. Prince, USEPA
- (b) **Response:** The Cabinet concurs. The following language is included in the facility permit and incorporated herein. *"Sulfur dioxide emissions shall not exceed 1.2 lb/MMBtu when the scrubber is operating and 3.1 lb/MMBtu when the scrubber is bypassed based on a twenty-four hour average."*
12. (a) **Comment:** In Table 2, "New Emission Rates," the Unit #3 rates are listed as 1.2 or 3.1. We recommend adding a footnote indicating that the 3.1 rate is only allowed for bypass period not to exceed 720 hours in a 12-month period.
Kay T. Prince, USEPA
- (b) **Response:** The Cabinet concurs. *A footnote has been added to Table 2 and the following language is included in the facility permit and incorporated herein. "Bypass of the scrubber shall be limited to 720 operating hours in any 12-consecutive months."*
13. (a) **Comment:** Appendix A should also include a notation of the emission scenario when the scrubber is on bypass for Unit #3. EPA anticipates that compliance will still be demonstrated; however, such a calculation is necessary for completeness purposes.
Kay T. Prince, USEPA

(b) **Response:** The Cabinet concurs. The 3.1 lb/MMBtu limit while the scrubber is being bypassed has been noted in Appendix A.

14. (a) **Comment:** The final submittal must ensure that it is clear that the monitoring, reporting and recordkeeping requirements are to be incorporated as part of the source specific SIP revision. These same requirements must also be included in the title V permit for the facility.

Kay T. Prince, USEPA

(b) **Response:** The Cabinet concurs. The incorporated requirements came from the Title 5 permit for the TVA Paradise Facility. Additional language has been added to further verify that those specific reporting and recordkeeping requirements from the permit are incorporated.



ENERGY AND ENVIRONMENT CABINET

Steven L. Beshear
Governor

Capital Plaza Tower
500 Mero Street, 12th Floor
Frankfort, Kentucky 40601
Phone: (502) 564-7192
Fax: (502) 564-7484

Leonard K. Peters
Secretary

February 4, 2009

Stan Meiburg
Acting Regional Administrator
U.S. EPA, Region 4
Atlanta Federal Center
61 Forsyth Street, SW
Atlanta, Georgia 30365

Dear Mr. Meiburg:

Enclosed for your consideration is the final revision to Kentucky's State Implementation Plan to exempt Stage II vapor recovery controls on gasoline fuel dispensers at the Avis Rent A Car, LLC and Budget Rent A Car, Inc. facilities located at the Cincinnati/Northern Kentucky International Airport in Boone County.

A public hearing to receive comments on this revision was held on January 6, 2009, at 10:00 a.m. (EST) at the offices of the Kentucky Division for Air Quality in Frankfort, Kentucky. A copy of the public hearing notice and the statement of consideration are included in this submittal.

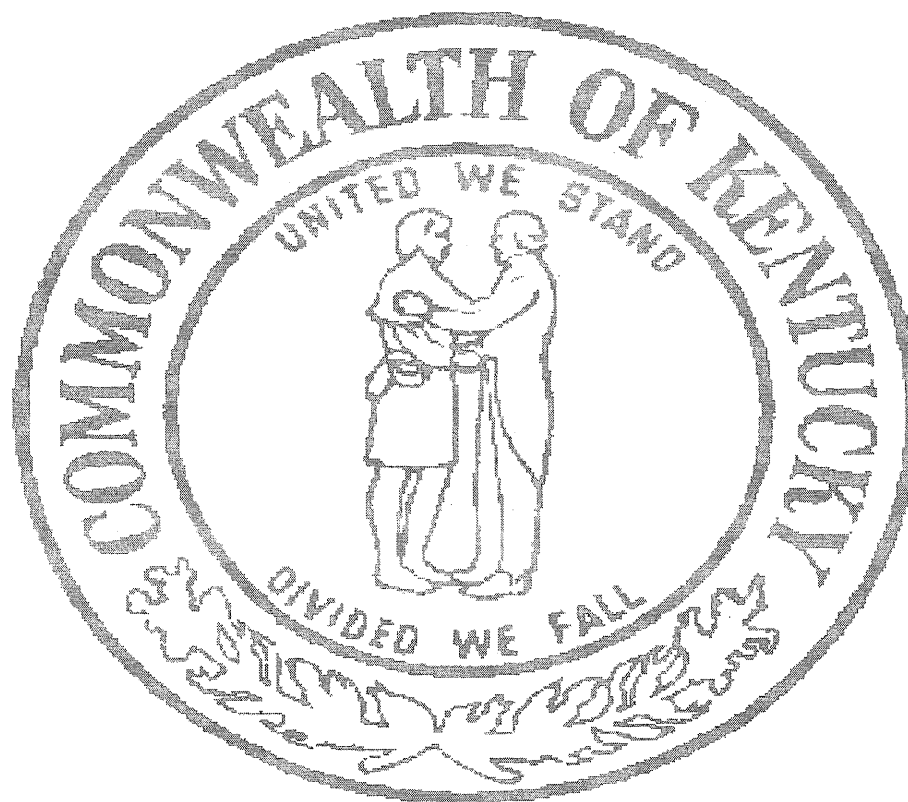
Your prompt consideration of this request is appreciated. If you have any questions or comments, please contact Mr. John Gowins with the Division for Air Quality at (502) 564-3999.

Sincerely,

Leonard K. Peters
Secretary

LKP/jmf
Enclosures

**REQUEST TO REVISE THE
STATE IMPLEMENTATION PLAN
TO ALLOW A VARIANCE FOR STAGE II
VAPOR RECOVERY
AT RENTAL CAR FACILITIES
BOONE COUNTY, KENTUCKY**



PREPARED BY THE

KENTUCKY DIVISION FOR AIR QUALITY

Submitted by

Kentucky Energy and Environment Cabinet

December 2008

Revised January 2009

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INTRODUCTION

The Commonwealth of Kentucky is submitting to the United States Environmental Protection Agency (U.S. EPA) a State Implementation Plan (SIP) revision to exempt the Stage II vapor recovery controls requirement on gasoline fuel dispensers at the Avis Rent A Car, LLC and Budget Rent A Car, Inc. facilities located at the Cincinnati/Northern Kentucky International Airport. The Cincinnati-Hamilton Interstate area is designated as a basic ozone nonattainment area for the 1997 8-hour ozone National Ambient Air Quality Standard (NAAQS). The Kentucky counties are Boone, Campbell, and Kenton. The airport is located in Boone County.

BACKGROUND RELATED TO AREA

The Clean Air Act (CAA) establishes a process for air quality management through the NAAQS. Area designations are required after promulgation of a new or revised NAAQS. On July 18, 1997, U.S. EPA promulgated a revised ozone standard of 0.08 parts per million (ppm), measured over an 8-hour period. The 1997 8-hour ozone standard is more protective of public health and more stringent than the previous 1-hour standard. The NAAQS rule was challenged by numerous litigants and in May 1999, the U.S. Court of Appeals for the D.C. Circuit issued a decision remanding, but not vacating, the 1997 8-hour ozone standard. Among other things, the Court recognized that U.S. EPA is required to designate areas for any new or revised NAAQS in accordance with the CAA and addressed a number of other issues, which are not related to designations.

In February 2001, the Supreme Court upheld U.S. EPA authority to set the NAAQS and remanded the case back to the D.C. Circuit for disposition of issues the Court did not address in its initial decision. The Supreme Court also remanded the 8-hour implementation strategy to

U.S. EPA. In March 2002, the D.C. Circuit rejected all remaining challenges to the 1997 8-hour ozone standard.

The process for designations following promulgation of a NAAQS is contained in section 107(d)(1) of the CAA. The Transportation Equity Act for the 21st Century (TEA-21) extended by 1 year the time for U.S. EPA to designate areas for the 1997 8-hour ozone NAAQS. Thus, U.S. EPA was required to designate areas for the revised ozone standard by July 2000. However, U.S. EPA's appropriations bill in 2000 restricted the agency's authority to spend money or designate areas until June 2001 or the date of the Supreme Court ruling on the standard, whichever came first. As noted earlier, the Supreme Court decision was issued in February 2001.

In 2003, several environmental groups filed suit in district court claiming U.S. EPA had not met its statutory obligation to designate areas for the 1997 8-hour ozone NAAQS. U.S. EPA entered into a consent decree, which required U.S. EPA to issue the designations by April 15, 2004. Pursuant to Section 107(d)(1) of the CAAA, a *Federal Register* notice published on April 30, 2004, designated the Cincinnati-Hamilton Interstate area to be nonattainment for the 1997 8-hour ozone NAAQS, effective June 15, 2004.

U.S. EPA's approval of a SIP revision must comply with the provisions of section 110(l) of the CAA, which states that: "Each revision to an implementation plan submitted by a State under this Chapter shall be adopted by such state after reasonable notice and public hearing. The administrator shall not approve a revision of a plan if the revision would interfere with any

applicable requirement concerning attainment and reasonable further progress (as defined in Section 7501 of this title), or any other applicable requirement of this chapter.”

The provision that applies for the exemption of the Stage II gasoline vapor recovery requirement for the Avis car rental and Budget car rental facilities located at the Cincinnati/Northern Kentucky International Airport is whether the SIP revision interferes with attainment, reasonable further progress or maintenance of the ozone or particulate matter (PM_{2.5}) NAAQS. With regard to the 1997 8-hour ozone standard, the 2008 8-hour ozone standard, the 1997 annual PM_{2.5} standard, and the revised 2006 daily PM_{2.5} standard, the Commonwealth does not believe that this SIP revision will interfere with attainment, maintenance or reasonable further progress of the NAAQS because at least 95% of the vehicles at the rental car facilities will be equipped with onboard refueling vapor recovery (ORVR) which is a substitute for Stage II and thus no increase in emissions are expected from this exemption.

In December 2007, Kentucky submitted to U.S. EPA a 1997 8-hour ozone attainment demonstration. The modeling demonstration indicates that the nonattainment area will attain the 1997 8-hour ozone standard by June 15, 2009.

BACKGROUND

On August 13, 1997, Kentucky filed the regulation on Stage II controls at gasoline dispensing facilities, 401 KAR 59:174. The implementation of Stage II controls was part of an emissions control strategy to reduce, by 15%, volatile organic compound (VOC) emissions in this area, which at the time was designated as moderate ozone nonattainment.

As indicated in the section above, in 1997 Kentucky filed the Stage II control regulation, 401 KAR 59:174. The implementation of Stage II controls was part of an emissions control strategy to reduce VOC emissions in moderate ozone nonattainment areas.

The Clean Air Act (CAA) section 202(a)(6) indicates U.S. EPA can revise or waive the section 182(b)(3) Stage II vapor recovery requirement for applicable ozone nonattainment areas after the Administrator determines widespread use of ORVR has been demonstrated throughout the motor vehicle fleet.

U.S. EPA has determined that the CAA allows the Agency to use an area-specific rulemaking approving a SIP revision to issue the section 202(a)(6) waiver for a relevant fleet in a nonattainment area, where a State meets the recommended criteria.

U.S. EPA has considered demonstration of widespread use of ORVR in motor vehicle fleets to include:

- 1) Determining the percentage of ORVR-equipped vehicles in service, and
- 2) Determining when VOC emissions resulting from the application of ORVR controls alone equal the VOC emissions when both Stage II vapor recovery systems and ORVR controls are used.

U.S. EPA has determined if at least 95% of the vehicles in a fleet have ORVR, then widespread use will likely have been demonstrated.

ORVR was first required for all passenger cars starting with model year 2000. Since 2006, all light-duty trucks, sports utility vehicles, and medium-duty vehicles are required to be equipped with ORVR.

According to U.S. EPA, if a SIP revision demonstrates that at least 95% of the vehicles in a vehicle rental fleet refueling at a rental car facility are equipped with ORVR and that this level of ORVR use would not decrease, then widespread use of ORVR could be demonstrated for the motor vehicle fleet refueling at that facility. Most large rental car companies rent current model year vehicles that are also equipped with ORVR. Any SIP revision showing a demonstration of widespread use of ORVR would be subject to CAA section 110(l) and other applicable requirements, and State and local agencies should consider any potential transportation conformity impacts if Stage II is currently included in a SIP's on-road motor vehicle emissions budget.

SECTION 110(l) ANALYSIS

Avis Rent A Car, LLC and Budget Rent A Car, Inc. have requested exemptions of the Stage II vapor recovery requirement at their facilities located at the Cincinnati/Northern Kentucky International Airport. The purpose for this request is the widespread use of ORVR systems on the company's vehicle fleet at the facilities.

All rental vehicles at the subject facilities are equipped with ORVR systems. As indicated above, ORVR was first required for all passenger cars starting with model year 2000. Additionally, since 2006, all light-duty trucks are required to be equipped with ORVR. Since the oldest rental vehicles in the combined fleet at the Avis Rent A Car, LLC and Budget Rent A Car,

Inc. facilities are currently from the 2007 model year, the facilities have a widespread use rate of at least 95%, the rate required for Stage II vapor recovery systems. This rate will never drop below 95% because the turnover rate of the rental vehicles is every one to two years.

Although there are two companies with separate facilities in operation at the Cincinnati/Northern Kentucky International Airport; Avis Rent A Car, LLC, located at 2395 Progress Drive, Hebron, Kentucky 41048 and Budget Rent A Car, Inc., located at 2667 Donaldson Road, Hebron, Kentucky 41048, there is one combined fleet of vehicles.

Since the ORVR is already substituting for the Stage II vapor recovery, there is a widespread use rate of at least 95%, and since there is a turnover rate of the rental vehicles every one to two years, no increases in vehicle emissions are anticipated. In addition, the total vehicle fleet is not expected to increase over the next several years. Reasons for anticipated flat growth include the reduction of flights with Delta Airlines and not having any discount carriers at the airport.

Vehicles that are equipped with ORVR systems do not have vapors within the gasoline tanks that can be captured during refueling. Since there are no vapors to be captured in ORVR-equipped vehicles, then a Stage II vapor recovery system would be unnecessary. Although the Stage II vapor recovery system would be functioning properly, there would simply be no vapors to capture from ORVR-equipped vehicles.

A U.S. EPA memorandum, titled, "Removal of Stage II Vapor Recovery in Situations Where Widespread Use of Onboard Refueling Vapor Recovery is Demonstrated," offers guidance for situations like the one described above (See Appendix A). According to U.S. EPA, it is

recommended that states submit a SIP revision to discontinue Stage II vapor recovery requirements for rental car facilities.

Kentucky requests a variance for the Avis Rent A Car, LLC and Budget Rent A Car, Inc. facilities at the Cincinnati/Northern Kentucky Cincinnati International Airport in Boone County, to the Stage II control regulation, 401 KAR 59:174. As indicated at these facilities, at least 95% of the vehicles to be refueled at these rental car facilities will be new vehicles equipped with ORVR technologies. This request for variance is not expected to interfere with CAA section 110(l) requirements or any other requirements of the CAA. It is therefore approvable with CAA section 110(l). This variance is not expected to increase emissions in VOC or other NAAQS.

This SIP revision is approvable based on an EPA policy memorandum dated June 23, 1993. According to this memorandum, titled, "Impact of the Recent Onboard Decision on Stage II Requirements in Moderate Nonattainment Areas," a Stage II vapor recovery program requirement is not mandatory for 1-hour ozone nonattainment areas classified as "moderate" or below, based on EPA's promulgation under section 202(a)(6) of the Clean Air Act for ORVR systems.

PUBLIC PARTICIPATION

Kentucky will conduct a public hearing to receive comments on this proposed SIP revision to allow a variance for Stage II vapor recovery at rental car facilities on January 6, 2009, in Conference Room 201B at the Kentucky Division for Air Quality Central Office in Frankfort, Kentucky. The office is located at 200 Fair Oaks Lane, First Floor. A copy of the public hearing notice and a copy of the advertisement are included in Appendix B.

A copy of the Energy and Environment Cabinet's responses to comments received during that public review period is included as Appendix C.

APPENDICES

APPENDIX A – U.S. EPA MEMORANDUM FROM STEPHEN D. PAGE AND MARGO TSIRIGOTIS OGE, DECEMBER 12, 2006, “SUBJECT: REMOVAL OF STAGE II VAPOR RECOVERY IN SITUATIONS WHERE WIDESPREAD USE OF ONBOARD REFUELING VAPOR RECOVERY IS DEMONSTRATED”

APPENDIX B – NOTICE OF PUBLIC HEARING AND LEGAL DOCUMENTATION

APPENDIX C – STATEMENT OF CONSIDERATION

APPENDIX A



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
RESEARCH TRIANGLE PARK, NC 27711

DEC 12 2006

OFFICE OF
AIR QUALITY PLANNING
AND STANDARDS

MEMORANDUM

SUBJECT: Removal of Stage II Vapor Recovery in Situations Where Widespread Use of Onboard Refueling Vapor Recovery is Demonstrated

FROM: Stephen D. Page, Director *Steve Page*
Office of Air Quality Planning and Standards

Margo Tsigotis Oge, Director *Margo T. Oge*
Office of Transportation and Air Quality

TO: Regional Air Division Directors

The purpose of this memorandum is to provide guidance to States concerning the removal of Stage II gasoline vapor recovery systems where States demonstrate to EPA that widespread use of onboard refueling vapor recovery (ORVR) has occurred in specific portions of the motor vehicle fleet. The specific fleets addressed here include:

1. initial fueling of new vehicles at automobile assembly plants
2. refueling of rental cars at rental car facilities
3. refueling of flexible fuel vehicles at E85 dispensing pumps

Background

Stage II vapor recovery systems are required to be used at gasoline dispensing facilities located in serious, severe, and extreme non-attainment areas for ozone under section 182(b)(3) of the Clean Air Act (CAA). States have included these control measures in their federally-approved state implementation plans (SIPs) in the form of generally applicable regulatory requirements governing all gasoline dispensing facilities that exceed the relevant gasoline dispensing throughput criteria. However, section 202(a)(6) of the CAA allows EPA to revise or waive the section 182(b)(3) Stage II requirement for these ozone non-attainment areas after the Agency determines that ORVR is in widespread use throughout the motor vehicle fleet.

CAA section 202(a)(6) does not specify which motor vehicle fleet must be the subject of a widespread use determination before EPA may revise or waive the section 182(b)(3) Stage II requirement. Nor does the CAA identify what level of ORVR use in the motor vehicle fleet must be reached before it is "widespread." EPA expects the possibility of

different rates of the implementation of ORVR across different geographic regions and among different types of motor vehicle fleets within any region. Given this, EPA does not believe that CAA section 202(a)(6) must be read narrowly to allow a widespread use determination and waiver of the Stage II requirement for a given area or area's fleet only if ORVR use has become widespread throughout the entire United States, or only if ORVR use has reached a definite level in each area. Rather, EPA believes that section 202(a)(6) allows the Agency to apply the widespread use criterion to either the entire motor vehicle fleet in a State or non-attainment area, or to special segments of the overall fleet for which ORVR use is shown to be sufficiently high, and to base widespread use determinations on differing levels of ORVR use, as appropriate. Moreover, a single national rulemaking is not needed to grant such a waiver for a specific area. Instead, EPA believes that the Act allows the Agency to use an area-specific rulemaking approving a SIP revision to issue the section 202(a)(6) waiver for a relevant fleet in a non-attainment area, where a State meets the recommended criteria discussed below.

Various metrics have been studied for demonstrating widespread use of ORVR in motor vehicle fleets. One metric focuses on the percentage of vehicles in service that are ORVR-equipped. Based on our preliminary analysis, this metric seems to track fairly closely with the percentage of vehicle miles traveled (VMT) from ORVR-equipped vehicles, and with the percentage of gasoline sold which is dispensed to ORVR-equipped vehicles. In fact, since newer vehicles tend to be driven more miles than older models, VMT traveled by ORVR-equipped vehicles and gasoline dispensed to ORVR-equipped vehicles may exceed 95 percent in a 95 percent ORVR-equipped fleet.

Another metric that EPA considered is when VOC emissions resulting from the application of ORVR controls alone equal the VOC emissions when both Stage II vapor recovery systems and ORVR controls are used, after accounting for incompatibility excess emissions. The incompatibility excess emissions factor relates to losses in control efficiency when certain types of Stage II and ORVR are used together. Studies conducted in three northeastern states indicate that when the percentages of motor vehicles in service with ORVR, vehicle miles traveled by ORVR-equipped vehicles, or gasoline dispensed to ORVR-equipped vehicles are above 95 percent, then the widespread use metric based on comparable VOC emissions will likely have been reached. For this reason, EPA believes that if 95 percent of the vehicles in a fleet have ORVR, then widespread use will likely have been demonstrated.

1. Initial Fueling at Automobile Assembly Plants

Based on our preliminary analysis, EPA expects that if a State's submission of a SIP revision shows that 95 percent of the new vehicles fueled at an automobile assembly plant are equipped with ORVR, and that this level of ORVR use would not decrease, the Agency can determine that widespread use of ORVR has been achieved for the fleet of motor vehicles that are fueled at that facility.

Since model year 2000, all passenger cars have been required to have ORVR. Also since 2006, all light duty trucks, SUVs and medium duty vehicles are required to be equipped

with ORVR. There may be a few situations, such as the chassis for motorized mobile homes, which still do not have ORVR. However, the number of these would be small. It is apparent that at most automobile assembly plants greater than 95 percent of the vehicles manufactured would have ORVR. Many assembly plants manufacture 100 percent ORVR equipped vehicles. Only such new vehicles are expected to be fueled at the automobile assembly plants.

States desiring to remove the Stage II requirement for these facilities would need to submit a SIP revision that EPA would evaluate through notice and comment rulemaking. The SIP would need to demonstrate that the widespread use benchmark has been achieved and provide assurance that any facility wishing to remove Stage II equipment maintains its eligibility for its motor vehicle fleet. Any EPA SIP approval would also be subject to the CAA section 110(l) requirement that the revision not interfere with any applicable requirement concerning attainment and reasonable further progress, or any other requirement of the CAA.

2. Refueling of Rental Cars at Rental Car Facilities

Similarly, EPA expects that if a SIP revision submission demonstrates that 95 percent of the vehicles in an automobile rental fleet refueling at a rental car facility are equipped with ORVR and that this level of ORVR use would not decrease, then widespread use of ORVR could be found for the motor vehicle fleet refueling at that facility. Most large rental car companies rent current model vehicles that would all have ORVR. There may be truck rental companies which have older vehicles which do not have ORVR and that would not be able to demonstrate widespread use of ORVR for their fleets. As discussed above, any SIP revision would be subject to CAA section 110(l) and other applicable requirements, and State and local agencies should consider any potential transportation conformity impacts if Stage II is currently included in a SIP's on-road motor vehicle emissions budget.

3. Refueling Flexible Fuel Vehicles at E85 Dispensing Pumps

E85 is a motor vehicle fuel that is a blend of as little as 15 percent gasoline and up to 85 percent ethanol. (In wintertime applications, the ratio may be 30 percent gasoline and 70 percent ethanol.) Ethanol is ethyl alcohol, a type of alcohol which can be produced from renewable resources such as corn. Based on the agency's survey of existing SIPs, EPA believes that most States have defined "gasoline" (for purposes of controlling emissions of VOC from refueling activities) to include gasoline/alcohol blends that have the same volatility as E85. EPA's guidance for States in developing their Stage II SIPs in the early 1990s suggested that States use the same definition of "gasoline" as the one found in EPA's Standards of Performance for Bulk Gasoline Terminals at 40 C.F.R. 60.501, which includes "any petroleum distillate or petroleum distillate/alcohol blend having a Reid vapor pressure of 27.6 kilopascals (kPa) or greater which is used as a fuel for internal combustion engines." EPA recommended using this definition to most broadly reach situations in which refueling of motor vehicles results in evaporative VOC emissions that contribute to ozone non-attainment concentrations, and to avoid a narrow interpretation of what is "gasoline" that

would allow significant VOC emissions from motor vehicle refueling activities in non-attainment areas to go uncontrolled.

E85 can only be used in specially designed flexible fuel vehicles (FFVs), which have mostly been manufactured since 1998. Since these are newer vehicles, most of them are equipped with ORVR, and every FFV built today has ORVR. Thus, most vehicles refueling at E85 dispensing pumps are already having their evaporative emissions captured, as in the cases of late model rental cars refueling at rental car facilities and newly manufactured cars being fueled for the first time at automobile assembly plants. EPA estimates that 59 percent of FFVs in current use are equipped with ORVR. The percentage of FFVs with ORVR will continue to climb as older vehicles are taken out of service and new models join the fleet. Across different ozone non-attainment areas and between States, these percentages may vary.

EPA believes that encouraging the use of E85 as a motor vehicle fuel reduces emissions of other air pollutants such as CO and benzene, a known human carcinogen, and reduces emissions of greenhouse gases. In addition, based on available information, the Agency is concerned that there is currently a lack of certified Stage II equipment for E85 (which may require different materials of construction than conventional Stage II equipment), and that the timing for when certified E85-compatible equipment will become widely available is uncertain. This may unnecessarily hinder E85 distribution in areas that now require Stage II.

Unlike in the cases of automobile assembly plants and rental car facilities, EPA is not recommending a specific percentage of the FFV fleet that should have ORVR before widespread use could be determined. This is because most E85 compatible vehicles are already equipped with ORVR and this percentage is increasing over time, whereas for automobile assembly plants and car rental facilities very high percentages of ORVR use have in most cases already been reached and are not expected to further increase significantly. The general use of ORVR in FFVs, instead, is expected to significantly increase, as are the miles driven by and amount of fuel dispensed to recent ORVR-equipped FFVs compared to those manufactured before 2000 without ORVR.

Moreover, we believe that in determining whether widespread use of ORVR has been demonstrated, it is reasonable under section 202(a)(6) to consider the VOC emissions impacts of removing Stage II, and that those impacts may inform the percentage of ORVR-equipped vehicles that would need to be achieved for a specific motor vehicle fleet or in a specific non-attainment area. EPA expects that the air quality impact of allowing E85 refueling facilities to operate without Stage II controls would likely be minimal in most non-attainment areas. FFVs currently comprise about 2 percent of the total US fleet. Non-ORVR FFVs are less 1 percent of the total U.S. vehicle fleet. EPA estimates that non-ORVR FFVs participate in only about 0.5 percent of all refueling events. Furthermore, because of the relatively small number of stations that offer E85 (around 1,000 out of 170,000 total refueling stations) EPA believes that very few of these non-ORVR refueling events actually occur at E85 pumps.

Considering the factors discussed above, if an area can demonstrate that any increase in emissions caused by operating E85 fueling facilities without Stage II controls is so small as to clearly not interfere with attainment of the ozone standard or reasonable further progress or any other applicable CAA requirement, then EPA expects it could find that ORVR is in widespread use for FFVs when refueling at E85 facilities in this area. These areas could then allow E85 facilities to operate without Stage II controls, after modifying their SIPs such that E85 is not included within the definition of "gasoline" for purposes of Stage II vapor recovery controls (or after taking other necessary SIP revision action). As discussed above, States would need to submit SIP revisions affecting this change to their current Stage II SIPs, which EPA would evaluate through notice and comment rulemaking, subject to the provisions of CAA section 110(l). In addition, State and local agencies should consider if there are any transportation conformity impacts related to removing Stage II, if emissions reductions from Stage II are included in a SIP's on-road motor vehicle emissions budget. Due to the expected rapid growth of E85 installations, EPA will explore the development of ways to expedite the SIP revision process for States which are dealing with the E85 issue.

General Exclusions from Widespread Use Determinations

States in the ozone transport region (OTR) are still required to apply Stage II, or a comparable measure, in all areas under 184(b)(2) of the CAA. This requirement is not affected by any widespread use determination or waiver of the section 182(b)(3) requirement granted under section 202(a)(6). For the independent section 184(b)(2) "comparable measure" requirement to not prevent an appropriate removal of Stage II controls, OTR States may want to revisit their previously approved comparable measure SIPs to consider substituting available non-Stage II measures for the Stage II controls they currently require.

Also, some States have chosen to add Stage II vapor recovery system requirements in their SIPs for ozone nonattainment areas that are classified in a category lower than "serious." While it is not necessary for States to demonstrate ORVR is in widespread use in moderate or cleaner ozone non-attainment areas, a revision of previously adopted SIP requirements to specifically waive Stage II requirements in such areas would need to comply with the provisions of CAA section 110(l) and, as described above, consider any transportation conformity impacts as applicable.

This guidance for widespread use determinations for special sectors would not necessarily apply to widespread use determinations for the general motor vehicle fleet. Within the overall motor vehicle fleet, the rate of penetration of ORVR-equipped vehicles has not advanced at the same rapid rates as for the fleets discussed in this memorandum. EPA is still considering the possible criteria for determining widespread use for the general fleet.

APPENDIX B

NOTICE OF PUBLIC HEARING

**KENTUCKY DIVISION FOR AIR QUALITY
NOTICE OF PUBLIC HEARING ON A PROPOSED
REVISION TO THE KENTUCKY STATE IMPLEMENTATION PLAN**

The Kentucky Energy and Environment Cabinet will conduct a public hearing on January 6, 2009, at 10:00 a.m. (EST) in Conference Room 201B at the Kentucky Division for Air Quality Central Office, 200 Fair Oaks Lane, 1st Floor, Frankfort, Kentucky, to receive comments on a proposed revision to Kentucky's State Implementation Plan (SIP). This SIP revision exempts the Stage II vapor recovery controls requirement on gasoline fuel dispensers at the Avis car rental facility located at the Cincinnati/Northern Kentucky International Airport. The airport is located in Boone County.

This hearing is open to the public and all interested persons will be given the opportunity to present testimony. To assure that all comments are accurately recorded, the Division requests that oral comments presented at the hearing also be provided in written form, if possible. To be considered part of the hearing record, comments must be received by the close of the hearing. Comments should be sent to the contact person.

The full text of the proposed SIP revision is available for public inspection and copying during regular business hours (8:00 a.m. to 4:30 p.m.) at the locations listed below. Any individual requiring copies may submit a request to the Division for Air Quality in writing, by telephone, or by fax. Requests for copies should be directed to the contact person. In addition, an electronic version of the proposed SIP revision document and relevant attachments can be downloaded from the Division for Air Quality's web site at:

http://www.air.ky.gov/homepage_repository/Public+Hearings.htm.

The hearing facility is accessible to people with disabilities. An interpreter or other auxiliary aid or service will be provided upon request. Please direct these requests to the contact person.

CONTACT PERSON: Joe Forgacs, Environmental Technologist III, Division for Air Quality, 200 Fair Oaks Lane, 1st Floor, Frankfort, Kentucky 40601. Phone (502) 564-3999; Fax (502) 564-4666; E-mail joe.forgacs@ky.gov.

The Energy and Environment Cabinet does not discriminate on the basis of race, color, national origin, sex, age, religion, or disability and provides, on request, reasonable accommodation including auxiliary aids and services necessary to afford an individual with a disability an equal opportunity to participate in all services, programs, and activities.

Air Quality Regional Office
1550 Wolohan Drive, Suite 1
Ashland, KY 41102-8942

Air Quality Regional Office
1508 Westen Avenue
Bowling Green, KY 42104-3356

Air Quality Regional Office
8020 Veterans Memorial Drive, Suite 110
Florence, KY 41042

Air Quality Regional Office
643 Teton Trail, Suite B
Frankfort, KY 40601

Air Quality Regional Office
233 Birch Street, Suite 2
Hazard, KY 41701-2179

Air Quality Regional Office
875 South Main Street
London, KY 40741

Air Quality Regional Office
3032 Alvey Park Drive W., Suite 700 130
Owensboro, KY 42303-2191

Air Quality Regional Office
Eagle Nest Drive
Paducah, KY 42003-9435

Louisville Metro Air Pollution Control District
850 Barret Avenue
Louisville, KY 40204-1745

Boone County Clerk
2950 East Washington Street
Burlington, KY 41005

Campbell County Clerk
340 York Street
Newport, KY 41071

Kenton County Clerk
303 Court Street
Covington, KY 41011

APPENDIX C

**STATEMENT
OF
CONSIDERATION**

**STATEMENT OF CONSIDERATION
RELATING TO STATE IMPLEMENTATION PLAN REVISION TO ALLOW A
VARIANCE FOR THE STAGE II VAPOR RECOVERY CONTROL REQUIREMENT
AT THE AVIS CAR RENTAL AND BUDGET CAR RENTAL FACILITIES,
CINCINNATI/NORTHERN KENTUCKY INTERNATIONAL AIRPORT,
BOONE COUNTY, KENTUCKY**

Amended After Comments

Energy and Environmental Cabinet

Department for Environmental Protection
Division for Air Quality

(1) On January 6, 2009, at 10:00 a.m. (EST), the Kentucky Energy and Environment Cabinet conducted a public hearing in Conference Room 201B at the Kentucky Division for Air Quality, 200 Fair Oaks Lane, 1st Floor, Frankfort, Kentucky. This hearing was held to receive comments on a proposed State Implementation Plan (SIP) revision to exempt the Stage II vapor recovery control requirement on gasoline fuel dispensers at the Avis car rental and Budget car rental facilities located at the Cincinnati/Northern Kentucky International Airport in Boone County, Kentucky. Written comments were received during the public comment period.

(2) The following individuals attended and/or provided written comments:

| <u>Name and Title</u> | <u>Organization</u> |
|-----------------------|---------------------|
| Paul Korzeniowski | Corestates Group |

(3) The following individuals from the Kentucky Environmental and Public Protection Cabinet attended or responded to the comments:

| | |
|---|--------------------------|
| John Gowins, Environmental Control Supervisor | Division for Air Quality |
| Joe Forgacs, Environmental Technologist III* | Division for Air Quality |

* Agency moderator

Response to Comments on the proposed State Implementation Plan to Allow a Variance for the Stage II Vapor Recovery Control Requirement at the Avis Car Rental and Budget Car Rental Facilities at the Cincinnati/Northern Kentucky International Airport in Boone County, Kentucky

- 1. (a) Comment:** The SIP had listed only or mentioned only one facility. But in fact, there are two facilities. The Avis facility is located at 2395 Progress Drive, in Hebron, Kentucky 41048. And the Budget Rent A Car facility is located at 2667 Donaldson Road, also in Hebron, Kentucky 41048.
Paul Korzeniowski, Corestates Group

(b) Response: The Cabinet acknowledges this comment. The proposed SIP revision has been revised to incorporate this comment.
- 2. (a) Comment:** In Introduction (Page 1), replace "...Avis car rental facility..." with "...Avis car rental and Budget car rental facilities..."
Paul Korzeniowski, Corestates Group

(b) Response: The Cabinet acknowledges this comment. The proposed SIP revision has been revised to incorporate this comment.
- 3. (a) Comment:** In Background Related to Area (Page 3), replace "...Avis car rental facility..." with "...Avis car rental and Budget car rental facilities..."
Paul Korzeniowski, Corestates Group

(b) Response: The Cabinet acknowledges this comment. The proposed SIP revision has been revised to incorporate this comment.
- 4. (a) Comment:** In Section 110(l) Analysis (Page 5), replace "The Avis Budget Car Rental Group has requested..." with "...Avis Rent A Car, LLC & Budget Rent A Car, Inc. have requested exemptions..."
Paul Korzeniowski, Corestates Group

(b) Response: The Cabinet acknowledges this comment. The proposed SIP revision has been revised to incorporate this comment.
- 5. (a) Comment:** In Section 110(l) Analysis (Page 5), replace "...at their facility located at..." with "...at their facilities located at..."
Paul Korzeniowski, Corestates Group

(b) Response: The Cabinet acknowledges this comment. The proposed SIP revision has been revised to incorporate this comment.

6. (a) **Comment:** In Section 110(l) Analysis (Page 5), replace “Since the Avis Budget Car Rental Group’s oldest rental vehicles...” with “...Since oldest rental vehicle <sic> in the combined fleet at the Avis car rental and Budget car rental facilities...”

Paul Korzeniowski, Corestates Group

(b) **Response:** The Cabinet acknowledges this comment. The proposed SIP revision has been revised to incorporate this comment.

7. (a) **Comment:** In Section 110(l) Analysis (Page 6), replace “The Avis Budget Car Rental Group consists of two companies: Avis Car Rental and Budget Car Rental.” with “Two companies with separate facilities are in operation at the Cincinnati/Northern Kentucky International Airport: Avis Rent A Car, LLC & Budget Rent A Car, Inc.”

Paul Korzeniowski, Corestates Group

(b) **Response:** The Cabinet acknowledges this comment. The proposed SIP revision has been revised to incorporate this comment.

8. (a) **Comment:** In Section 110(l) Analysis (Page 7), replace “...the Avis Budget Car Rental Group facility...” with “...the Avis Rent A Car, LLC & Budget Rent A Car, Inc. facilities...”

Paul Korzeniowski, Corestates Group

(b) **Response:** The Cabinet acknowledges this comment. The proposed SIP revision has been revised to incorporate this comment.

STEVEN L. BESHEAR
GOVERNOR



LEONARD K. PETERS
SECRETARY

ENERGY AND ENVIRONMENT CABINET
OFFICE OF THE SECRETARY
500 MERO STREET
12TH FLOOR, CAPITAL PLAZA TOWER
FRANKFORT, KY 40601
TELEPHONE: (502) 564-3350
FACSIMILE: (502) 564-7484
<http://eec.ky.gov>

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FEB 14 2013
RA's Office

AIR

February 13, 2013

Ms. Gwen Keyes-Fleming
Regional Administrator
U.S. Environmental Protection Agency, Region 4
Sam Nunn Atlanta Federal Center
61 Forsyth Street, SW
Atlanta, GA 30303-8960



RE: LMAPCD Site-Specific SIP Revision for Louisville Gas and Electric Company, Cane Run

Dear Ms. Fleming:

On January 15, 2013, the Kentucky Division for Air Quality received a State Implementation Plan (SIP) submittal package from Louisville Metro Air Pollution Control District. The package included one SIP request for a specific source. The requisite is as follows:

Louisville Gas and Electric Company, Cane Run Generating Station NOx RACT Plan Amendment 2 – Submit for approval into the SIP.

This revision, designated as Part 2 of the NOx RACT Plan, includes emission requirements for the changeover from a coal-fired to a natural gas-fired combined cycle electricity generating unit and associated equipment.

The Kentucky Energy and Environment Cabinet (Cabinet) hereby requests that the U.S. Environmental Protection Agency approve the enclosed regulatory amendment as a revision to the Jefferson County portion of the Kentucky SIP.

Included in the administratively complete SIP submittal package are documentation of public comment periods and public hearings that were held in regard to these SIP revisions. Additionally, pursuant to 40 CFR 51.103(a), two hard copies and a disc containing all documents are included. The Cabinet appreciates your prompt response to this request. If you have any further questions or concerns regarding this submittal, please contact Andrea Smith at (502) 564-3999, ext. 4410 or by e-mail at Andrea.Smith@ky.gov.

Sincerely yours,

Leonard K. Peters
Secretary

cc: Lynorae Benjamin
LKP/mh

Kentucky Enclosures Spirit.com



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REQUEST FOR EPA ACTION

Louisville Metro Air Pollution Control District (District) requests a source specific revision to the Jefferson County portion of the State Implementation Plan (SIP) for the **Louisville Gas and Electric Company, Cane Run Generating Station**:

Approve into the SIP the Agreed Board Order Amendment 2 approved on July 18, 2012.

A SIP revision is needed to incorporate the latest NO_x RACT plan approved by the Air Pollution Control Board. Part 2 of the NO_x RACT Plan includes emission requirements for new natural gas-fired combined cycle (NGCC) electricity generating unit, auxiliary boiler, and fuel gas dew point heater. The emission requirements in Amendment 1 for the coal-fired boilers will remain and be designated as Part 1 of the NO_x RACT Plan. This updated NO_x RACT plan covers the newly permitted natural gas combined cycle electric generating unit as well as the existing coal fired electric generating unit.

A copy of the Agreed Board Order - Amendment 1 approved at 66 FR 25894 on October 23, 2001 is enclosed for reference.

**Completeness Checklist and Pollutant/Area Identification
Board Order Louisville Gas and Electric Company
Cane Run Generating Station—NOX RACT Plan
(Amendment 2)**

1. Agreed Board Order - Amendment 1 (October 18, 2000)
2. Agreed Board Order Amendment 2 (July 18, 2012)
3. 66 FR 25894 (selected pages)
4. 66 FR 25894 (entire file)
5. Legal Notice (June 13, 2012)
6. Legal Notice (June 29, 2012)
7. Public Hearing and Board Meeting Agenda
8. Board Meeting Minutes
9. Public Hearing Minutes

Pollutant/Area Identification

Pollutant/Area Identification

| | |
|-------------------------------------|--|
| Pollutant: | All |
| Affected Area: | Jefferson County, Kentucky |
| Location: | Louisville MSA |
| Area Designation: | Non Attainment: <u>Annual PM_{2.5}</u> |
| | Attainment: <u>All other pollutants</u> |
| Resulting Emissions Changes: | N/A |
| | _____ Increase |
| | _____ Decrease |

**Air Pollution Control Board of Jefferson County
Board Order - Amendment 1**

This amended Board Order is issued by the Air Pollution Control Board of Jefferson County pursuant to the authority granted in Kentucky Revised Statutes Chapter 77 Air Pollution Control.

Company: Louisville Gas and Electric Company
Cane Run Generating Station (LG&E/CRGS)
5252 Cane Run Road
Louisville, Kentucky 40216

Background and Discussion

Regulation 6.42 *Reasonably Available Control Technology Requirements for Major Volatile Organic Compound- and Nitrogen Oxides-Emitting Facilities* requires the establishment and implementation of reasonably available control technology (RACT) for certain affected facilities that emit oxides of nitrogen (NO_x) and that are located at a major stationary source for NO_x. Section 4.4 requires that each determination of RACT approved by the Air Pollution Control District of Jefferson County (District) be submitted to the U.S. Environmental Protection Agency (EPA) as a site-specific revision of the Kentucky State Implementation Plan (SIP).

The initial Board Order was approved by the Board on November 8, 1999, and submitted to the EPA by the Kentucky Natural Resources and Environmental Protection Cabinet on November 12, 1999, as a site-specific revision of the Kentucky SIP. Subsequently, the EPA identified issues needing resolution before this NO_x RACT determination would be approved as part of the Kentucky SIP. This amended Board Order addresses those issues.

A Public Hearing on this amended Board Order was held before the Board on October 18, 2000. Based upon the evidence presented at that hearing, the Board determined that approval of this amended Board Order and submittal as a site-specific revision of the Kentucky SIP were appropriate.


Now therefore be it ordered that:

1. The attached NO_x RACT Plan - Amendment 1, applicable to the LG&E/CRGS, is approved by the District. The LG&E/CRGS shall comply with this plan.
2. Compliance with the attached NO_x RACT Plan - Amendment 1 shall be deemed compliance with the requirements of Regulation 6.42 section 1.2, section 1.3, Section 2 to the extent that this Section applies to section 4.3, section 4.3, and Section 5 to the extent that this Section applies to verification of compliance with the requirements pursuant to section 4.3.

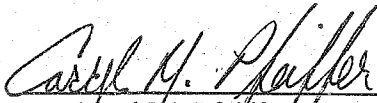
3. This amended Board Order shall not be deemed or construed to be the result of any violation of any federal, state, or local statute, regulation, or ordinance for any purpose whatsoever.
4. The LG&E/CRGS has reviewed this amended Board Order and consents to all its requirements and terms.
5. The effective date of this amended Board Order is January 1, 2001. The initial Board Order, approved on November 8, 1999, shall remain in effect until January 1, 2001.

Dated this 18th day of October, 2000.

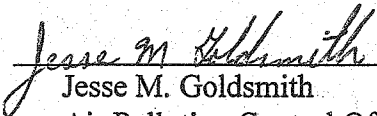
Air Pollution Control Board
of Jefferson County

By: 
Robert W. Powell, M.D.
Chairman

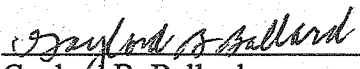
Louisville Gas and Electric Company
Cane Run Generating Station

By: 
Caryl M. Pfeiffer
Director, Environmental Affairs

Air Pollution Control District
of Jefferson County

By: 
Jesse M. Goldsmith
Air Pollution Control Officer

Approved as to form and legality:
Air Pollution Control District
of Jefferson County

By: 
Gaylord B. Ballard
Attorney

NO_x RACT Plan - Amendment 1

1. The oxides of nitrogen (NO_x, expressed as NO₂) emission from each utility boiler shall not exceed the rate as specified below, based upon a rolling 30-day average:

| | |
|--------|-----------------------------|
| Unit 4 | 0.52 lb/mmBtu of heat input |
| Unit 5 | 0.52 lb/mmBtu of heat input |
| Unit 6 | 0.47 lb/mmBtu of heat input |
2. The NO_x emission rate for each utility boiler shall be determined using the methods and procedures specified in NO_x RACT Plan Appendix A - Amendment 1, except that any reference to an annual average shall be read as a rolling 30-day average.
3. The Louisville Gas and Electric Company Cane Run Generating Station (LG&E/CRGS) shall install, maintain, and operate a NO_x continuous emissions monitoring system (CEMS) for each utility boiler and shall keep records and submit reports and other notifications as specified in NO_x RACT Plan Appendix A - Amendment 1.
4. The GT-11 turbine shall not be operated for more than 500 hours per calendar year.
5. The LG&E/CRGS shall make a record of the hours of operation during each day of operation of the GT-11 turbine. Each record shall be maintained for a minimum of 5 years and made available to the District upon request.
6. The quarterly report required by this NO_x RACT Plan Element (Element) No. 7 shall include a summary of the monthly and calendar-year-to-date hours of operation of the GT-11 gas turbine .
7. The LG&E/CRGS shall keep a record identifying all deviations from the requirements of this NO_x RACT Plan and shall submit to the District a written report of all deviations that occurred during the preceding calendar quarter. The report shall contain the following information:
 - A. The boiler number,
 - B. The beginning and ending date of the reporting period,
 - C. Identification of all periods during which a deviation occurred,
 - D. A description, including the magnitude, of the deviation,
 - E. If known, the cause of the deviation, and
 - F. A description of all corrective actions taken to abate the deviation.If no deviation occurred during the calendar quarter, the report shall contain a negative declaration. Each report shall be submitted within 30 days following the end of the calendar quarter.
8. In lieu of the requirements in this NO_x RACT Plan, the LG&E/CRGS may comply with alternative requirements regarding emission limitations, equipment operation, test methods, monitoring, recordkeeping, or reporting, provided the following conditions are met:

Louisville Gas and Electric Company
Cane Run Generating Station

- A. The alternative requirements are established and incorporated into an operating permit pursuant to a Title V Operating Permit issuance, renewal, or significant permit revision process as established in Regulation 2.16,
- B. The alternative requirements are consistent with the streamlining procedures and guidelines set forth in section II.A. of *White Paper Number 2 for Improved Implementation of the Part 70 Operating Permits Program*, March 5, 1996, U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards. The overall effect of compliance with alternative requirements shall consider the effect on an intrinsic basis, such as pounds per million Btu of heat input. However, alternative requirements that are developed based upon revisions to the applicable requirements contained in 40 CFR Part 60 or Part 75 shall be approvable pursuant to this NO_x RACT Plan Element,
- C. The U.S. Environmental Protection Agency (EPA) has not objected to the issuance, renewal, or revision of the Title V Operating Permit, and either
- D. If the public comment period preceded the EPA review period, then the District had transmitted any public comments concerning the alternative requirements to EPA with the proposed permit, or
- E. If the EPA and public comment periods ran concurrently, then the District had transmitted any public comments concerning the alternative requirements to EPA no later than 5 working days after the end of the public comment period.

The District's determination of approval of any alternative requirements is not binding on EPA. Noncompliance with any alternative requirement established pursuant to the Title V Operating Permit process constitutes a violation of this NO_x RACT Plan.

History: Approved 11-8-99; effective 1-1-00; amended 1/10-18-00 effective 1-1-01.

**Appendix A to NO_x RACT Plan - Amendment 1
Requirements for NO_x CEMS**

I. General Operating Requirements

- A. Primary measurement requirements.** The LG&E/CRGS shall, for each utility boiler, install, certify, operate, and maintain, in accordance with the requirements of 40 CFR 75, an oxides of nitrogen (NO_x) continuous emission monitoring system (CEMS), consisting of a NO_x pollutant concentration monitor and an oxygen (O₂) or carbon dioxide (CO₂) diluent gas monitor, with an automated data acquisition and handling system for measuring and recording NO_x concentration (in parts per million [ppm]), O₂ or CO₂ concentration (in percent O₂ or CO₂) and NO_x emission rate (in lb/mmBtu of heat input) discharged to the atmosphere. Any reference in this Appendix to an annual average shall be read as a rolling 30-day average. The LG&E/CRGS shall account for total NO_x emissions, both nitrogen oxide (NO) and nitrogen dioxide (NO₂), either by monitoring for both NO and NO₂ or by monitoring for NO only and adjusting the emissions data to account for NO₂.
- B. Primary equipment performance requirements.** The LG&E/CRGS shall ensure that each CEMS used to demonstrate compliance with the NO_x emission limit meets the equipment, installation, and performance specifications in 40 CFR 75 Appendix A, and is maintained according to the quality assurance and quality control procedures in 40 CFR 75 Appendix B. The NO_x emission rate for each utility boiler shall be recorded as lb/mmBtu of heat input.
- C. Primary equipment hourly operating requirements.**
1. The LG&E/CRGS shall ensure that all CEMS are in operation and monitoring the emissions from the associated utility boiler at all times that the utility boiler combusts any fuel except during a period of any of the following:
 - a. Calibration, quality assurance, or preventive maintenance, any of which is performed pursuant to 40 CFR §75.21, 40 CFR 75 Appendix B, District regulations, District permit conditions, or this NO_x RACT Plan, or
 - b. Repair, backups of data from the data acquisition and handling system, or recertification, any of which is performed pursuant to 40 CFR §75.20.
 2. The LG&E/CRGS shall ensure that the following requirements are met:
 - a. Each CEMS and component thereof is capable of completing a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute interval. The LG&E/CRGS shall reduce all volumetric flow, CO₂ concentration, O₂ concentration, NO_x concentration, and NO_x emission rate data collected by the monitors to hourly averages. Hourly averages shall be computed using at least one data point in each 15-minute quadrant of an hour during which the utility boiler combusted fuel during that quadrant of the hour. Notwithstanding this requirement, an hourly average may be computed from at least two data points separated by a minimum of 15 minutes (where the unit operates for more than one quadrant of the hour) if

data are unavailable as a result of the performance of any activity specified in paragraph I.C.1. of this Appendix. The LG&E/CRGS shall use all valid measurements or data points collected during an hour to calculate the hourly averages. All data points collected during an hour shall be, to the extent practicable, evenly spaced over the hour.

- b. Failure of a CO₂ or O₂ diluent concentration monitor, flow monitor, or NO_x pollutant concentration monitor to acquire the minimum number of data points for calculation of an hourly average shall result in the failure to obtain a valid hour of data and the loss of such component data for the entire hour. An hourly average NO_x emission rate in lb/mmBtu of heat input is valid only if the minimum number of data points are acquired by both the pollutant concentration monitor (NO_x) and the diluent monitor (CO₂ or O₂). If a valid hour of data is not obtained, the owner or operator shall estimate and record emissions, moisture, or flow data for the missing hour by means of the automated data acquisition and handling system, in accordance with the applicable procedure for missing data substitution in 40 CFR 75 Subpart D.
- D. Optional backup monitor requirements.** If the LG&E/CRGS chooses to use two or more CEMS, each of which is capable of monitoring the same stack or duct at a specific utility boiler, then the LG&E/CRGS shall designate one CEMS as the primary monitoring system and shall record this designation in the monitoring plan. The LG&E/CRGS shall designate any other CEMS as a backup CEMS in the monitoring plan. Any other backup CEMS shall be designated as a redundant backup CEMS, non-redundant backup CEMS, or reference method CEMS, as described in 40 CFR §75.20(d). When the certified primary monitoring system is operating and not out-of-control as defined in 40 CFR §75.24, only data from the certified primary monitoring system shall be reported as valid, quality-assured data. Thus, data from a backup CEMS may be reported as valid, quality-assured data only when a backup CEMS is operating and not out-of-control as defined in 40 CFR §75.24 or in the applicable reference method in 40 CFR 60 Appendix A and when the certified primary monitoring system is not operating or is operating but out-of-control. A particular monitor may be designated both as a certified primary monitor for one unit and as a certified redundant backup monitor for another unit.
- E. Minimum measurement capability requirements.** Each CEMS and component thereof shall be capable of accurately measuring, recording, and reporting data, and shall not incur a full scale exceedance, except as provided in section 2.1.2.5 of 40 CFR 75 Appendix A.
- F.** The LG&E/CRGS shall not operate a utility boiler so as to discharge, or allow to be discharged, emissions of NO_x to the atmosphere without accounting for all such emissions in accordance with the methods and procedures specified in this Appendix.
- G.** The LG&E/CRGS shall not disrupt the CEMS, any portion thereof, or any other approved emission monitoring method, and thereby avoid monitoring and recording

NO_x emissions discharged into the atmosphere, except for periods of recertification or periods when calibration, quality assurance testing, or maintenance is performed in accordance with the provisions of this Appendix.

- H. The LG&E/CRGS shall not retire or permanently discontinue use of the CEMS, any component thereof, or any other approved emission monitoring system under this Appendix except under any one of the following circumstances:
 - 1. The LG&E/CRGS is monitoring NO_x emissions from the utility boiler with another certified monitoring system approved in accordance with the provisions of paragraph I.D. of this Appendix, or
 - 2. The LG&E/CRGS submits notification of the date of certification testing of a replacement monitoring system.
- I. The quality assurance and quality control requirements in 40 CFR §75.21 that apply to NO_x pollutant concentration monitors and diluent gas monitors shall be met. A NO_x pollutant concentration monitor for determining NO_x emissions shall meet the same certification testing requirements, quality assurance requirements, and bias test requirements as those specified in 40 CFR 75 for an SO₂ pollutant concentration monitor.
- J. **Moisture correction.** If a correction for the stack gas moisture content is needed to properly calculate the NO_x emission rate in lb/mmBtu of heat input (i.e., if the NO_x pollutant concentration monitor measures on a different moisture basis from the diluent monitor), LG&E/CRGS shall either report a fuel-specific default moisture value for each utility boiler operating hour, as provided in 40 CFR §75.11(b)(1), or shall install, operate, maintain, and quality assure a continuous moisture monitoring system, as defined in 40 CFR §75.11(b)(2). Notwithstanding this requirement, if Equation 19-3, 19-4 or 19-8 in Method 19 in Appendix A to 40 CFR Part 60 is used to measure NO_x emission rate, the following fuel-specific default moisture percentages shall be used in lieu of the default values specified in 40 CFR §75.11(b)(1): 5.0%, for anthracite coal; 8.0% for bituminous coal; 12.0% for sub-bituminous coal; 13.0% for lignite coal; and 15.0% for wood.

II. Specific Provisions for Monitoring NO_x Emission Rate (NO_x and diluent gas monitors)

- A. The LG&E/CRGS shall meet the general operating requirements in 40 CFR §75.10 for a NO_x CEMS for each utility boiler. The diluent gas monitor in the NO_x CEMS may measure either O₂ or CO₂ concentration in the flue gases.
- B. The LG&E/CRGS shall calculate hourly and rolling 30-day NO_x emission rates (in lb/mmBtu of heat input) by combining the NO_x concentration (in ppm), diluent concentration (in percent O₂ or CO₂), and percent moisture (if applicable) measurements according to the procedures in 40 CFR 75 Appendix F.

III. Monitoring plan

The LG&E/CRGS shall prepare and maintain a monitoring plan as specified in 40 CFR 75.53. The monitoring plan shall be submitted to the District no later than 45 days prior to the first scheduled certification test.

IV. Recordkeeping Provisions

- A. The LG&E/CRGS shall maintain for each utility boiler a file of all measurements, data, reports, and other information required by this Appendix at the stationary source in a form suitable for inspection for at least 5 years from the date of each record. This file shall contain the following information:
1. The data and information required in paragraph IV.B. of this Appendix,
 2. The component data and information used to calculate values required in paragraph IV.B. of this Appendix,
 3. The current monitoring plan as specified in 40 CFR §75.53, and
 4. The quality control plan as described in 40 CFR 75 Appendix B.
- B. **NO_x emission record provisions.** The LG&E/CRGS shall record hourly the following information as measured and reported from the certified primary monitor, certified back-up or certified portable monitor, or other approved method of emissions determination for each utility boiler:
1. Date and hour,
 2. Hourly average NO_x concentration (ppm, rounded to the nearest tenth),
 3. Hourly average diluent gas concentration (percent O₂ or percent CO₂, rounded to the nearest tenth),
 4. Hourly average NO_x emission rate (lb/mmBtu of heat input, rounded to nearest hundredth),
 5. Hourly average NO_x emission rate (lb/mmBtu of heat input, rounded to nearest hundredth) adjusted for bias, if a bias adjustment factor is required by 40 CFR §75.24 (d),
 6. Percent monitoring system data availability (recorded to the nearest tenth of a percent), calculated pursuant to 40 CFR §75.32,
 7. Method of determination for hourly average NO_x emission rate using Codes 1-55 in 40 CFR §75.57 Table 4A, and
 8. Unique code identifying emissions formula used to derive hourly average NO_x emission rate, as provided for in 40 CFR §75.53.

V. Certification, Quality Assurance, and Quality Control Record Provisions

- A. For each NO_x pollutant concentration monitor and diluent gas monitor, the LG&E/CRGS shall record the following:
1. Results of all trial runs and certification tests and quality assurance activities and measurements (including all reference method field test sheets, charts, records of

- combined system responses, laboratory analyses, and example calculations) necessary to substantiate compliance with all relevant requirements of this Appendix,
2. Bias test results as specified in 40 CFR 75, Appendix A, section 7.6.4,
 3. The appropriate bias adjustment factor as follows:
 - a. The value derived from Equations A-11 and A-12 in 40 CFR 75 Appendix A for any monitoring system or component that failed the bias test, or
 - b. A value of 1.0 for any monitoring system or component that passed the bias test, and
 4. The component/system identification code.
- B. For each NO_x pollutant concentration monitor and diluent gas monitor, the LG&E/CRGS shall record the following for all daily and 7-day calibration error tests, including any follow-up tests after corrective action:
1. Instrument span and span scale,
 2. Date and hour,
 3. Reference value (i.e., calibration gas concentration or reference signal value, in ppm or other appropriate units),
 4. Observed value (monitor response during calibration, in ppm or other appropriate units), (flag if using alternative performance specification for low emitters or differential pressure monitors),
 5. Percent calibration error (rounded to the nearest tenth of a percent),
 6. Calibration gas level,
 7. Test number and reason for test,
 8. For 7-day calibrations tests for certification or recertification, a certification from the cylinder gas vendor or CEMS vendor that calibration gases as defined in 40 CFR §72.2 and 40 CFR 75 Appendix A were used to conduct calibration error testing,
 9. Description of any adjustments, corrective actions, or maintenance following a test,
 10. For quality test for off-line calibration, whether the unit is off-line or on-line, and
 11. The component/system identification code.
- C. For each NO_x pollutant concentration monitor and diluent gas monitor, the LG&E/CRGS shall record the following for the initial and all subsequent linearity checks, including any follow-up tests after corrective action:
1. Instrument span and span scale,
 2. Calibration gas level,
 3. Date, hour, and minute of each gas injection at each calibration gas level,
 4. Reference value (i.e., reference gas concentration for each gas injection at each calibration gas level, in ppm or other appropriate units),
 5. Observed value (monitor response to each reference gas injection at each calibration gas level, in ppm or other appropriate units),
 6. Mean of reference values and mean of measured values at each calibration gas level,
 7. Linearity error at each of the reference gases concentrations (rounded to the

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- nearest tenth of a percent), (flag if using alternative performance specification),
 8. Test number and reason for test (flag if aborted test),
 9. Description of any adjustments, corrective action, or maintenance prior to a passed test or following a failed test,
 10. The number of out-of-control hours, if any, following any tests, and
 11. The component/system identification code.
- D. For each NO_x pollutant concentration monitor and diluent gas monitor, the LG&E/CRGS shall record the following information for the initial and all subsequent relative accuracy tests and test audits:
1. Reference method(s) used,
 2. Individual test run data from the relative accuracy test audit for the NO_x pollutant concentration monitor or diluent gas monitor, including:
 - a. Date, hour, and minute of beginning of test run,
 - b. Date, hour, and minute of end of test run,
 - c. Monitoring system identification code,
 - d. Test number and reason for test,
 - e. Operating load level (low, mid, high, or normal, as appropriate) and number of load levels comprising test,
 - f. Normal load indicator for flow RATAs (except for peaking units),
 - g. Units of measure,
 - h. Run number,
 - i. Run data from CEMS being tested, in the appropriate units of measure,
 - j. Run data for reference method, in the appropriate units of measure,
 - k. Flag value (0, 1, or 9, as appropriate) indicating whether run has been used in calculating relative accuracy and bias values or whether the test was aborted prior to completion,
 - l. Average gross unit load (expressed as a total gross unit load rounded to the nearest MWe or as steam load rounded to the nearest thousand lb/hr), and
 - m. Flag to indicate whether an alternative performance specification has been used,
 3. Calculations and tabulated results, as follows:
 - a. Arithmetic mean of the monitoring system measurement values, reference method values, and of their differences, as specified in Equation A-7 in 40 CFR 75 Appendix A,
 - b. Standard deviation, as specified in Equation A-8 in 40 CFR 75 Appendix A,
 - c. Confidence coefficient, as specified in Equation A-9 in 40 CFR 75 Appendix A,
 - d. Statistical "t" value used in calculations,
 - e. Relative accuracy test results, as specified in Equation A-10 in 40 CFR 75 Appendix A,
 - f. Bias test results as specified in section 7.6.4 in 40 CFR 75 Appendix A,
 - g. Bias adjustment factor from Equation A-12 in 40 CFR 75 Appendix A for any monitoring system or component that failed the bias test (except as otherwise provided in section 7.6.5 in 40 CFR 75 Appendix A) and 1.000 for any

- monitoring system or component that passed the bias test,
 - h. F-factor value(s) used to convert NO_x pollutant concentration and diluent gas (O₂ or CO₂) concentration measurements into NO_x emission rates (in lb/mmBtu),
 - i. The raw data and calculated results for any stratification tests performed in accordance with sections 6.5.6.1 through 6.5.6.3 in 40 CFR 75 Appendix A, and
 - j. For moisture monitoring systems, the coefficient "K" factor or other mathematical algorithm used to adjust the monitoring system with respect to the reference method,
4. Description of any adjustment, corrective action, or maintenance prior to a passed test or following a failed or aborted test,
5. For each run of each test using Method 7E or 3A in Appendix A of 40 CFR 60 to determine NO_x, CO₂, or O₂ concentration the following:
- a. Pollutant or diluent gas being measured,
 - b. Span of reference method analyzer,
 - c. Type of reference method system (e.g., extractive or dilution type),
 - d. Reference method dilution factor (dilution type systems, only),
 - e. Reference gas concentration (low, mid, and high gas levels) used for the 3-point, pre-test analyzer calibration error test (or, for dilution type reference method systems, for the 3-point, pre-test system calibration error test) and for any subsequent recalibrations,
 - f. Analyzer responses to the zero-, mid-, and high-level calibration gases during the 3-point pre-test analyzer (or system) calibration error test and during any subsequent recalibration(s),
 - g. Analyzer calibration error at each gas level (zero, mid, and high) for the 3-point, pre-test analyzer (or system) calibration error test and for any subsequent recalibration(s) (percent of span value),
 - h. Upscale gas concentration (mid or high gas level) used for each pre-run or post-run system bias check or, for dilution type reference method systems, for each pre-run or post-run system calibration error check,
 - i. Analyzer response to the calibration gas for each pre-run or post-run system bias (or system calibration error) check,
 - j. The arithmetic average of the analyzer responses to the zero-level gas, for each pair of pre- and post-run system bias (or system calibration error) checks,
 - k. The arithmetic average of the analyzer responses to the upscale calibration gas, for each pair of pre- and post-run system bias (or system calibration error) checks,
 - l. The results of each pre-run and each post-run system bias (or system calibration error) check using the zero-level gas (percentage of span value),
 - m. The results of each pre-run and each post-run system bias (or system calibration error) check using the upscale calibration gas (percentage of span value),
 - n. Calibration drift and zero drift of analyzer during each RATA run (percentage of span value),

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- o. Moisture basis of the reference method analysis,
 - p. Moisture content of stack gas, in percent, during each test run (if needed to convert to moisture basis of CEMS being tested),
 - q. Unadjusted (raw) average pollutant or diluent gas concentration for each run,
 - r. Average pollutant or diluent gas concentration for each run, corrected for calibration bias (or calibration error) and, if applicable, corrected for moisture,
 - s. The F-factor used to convert reference method data to units of lb/mmBtu (if applicable)
 - t. Date(s) of the latest analyzer interference test(s),
 - u. Results of the latest analyzer interference test(s),
 - v. Date of the latest NO₂ to NO conversion test (Method 7E only),
 - w. Results of the latest NO₂ to NO conversion test (Method 7E only), and
 - x. For each calibration gas cylinder used during each RATA, record the cylinder gas vendor, cylinder number, expiration date, pollutant(s) in the cylinder, and certified gas concentration(s),
6. The number of out-of-control hours, if any, following any tests, and
 7. The component/system identification code.

VI. Notifications

- A. The LG&E/CRGS or a designated representative shall submit notice to the District for the following purposes, as required by this Appendix:
 1. Initial certification and recertification test notifications. Written notification shall be submitted of initial certification tests, recertification tests, and revised test dates as specified in 40 CFR §75.20 for continuous emission monitoring systems, except for testing only of the data acquisition and handling system, and
 2. Notification of initial certification testing. Initial certification test notifications shall be submitted not later than 45 days prior to the first scheduled day of initial certification testing. Testing may be performed on a date other than that already provided in a notice under this subparagraph as long as notice of the new date is provided either in writing or by telephone or other means at least 7 days prior to the original scheduled test date or the revised test date, whichever is earlier.
- B. For retesting following a loss of certification under 40 CFR §75.20(a)(5) or for recertification under 40 CFR §75.20(b), notice of testing shall be submitted either in writing or by telephone at least 7 days prior to the first scheduled day of testing, except that in emergency situations when testing is required following an uncontrollable failure of equipment that results in lost data, notice shall be sufficient if provided within 2 business days following the date when testing is scheduled. Testing may be performed on a date other than that already provided in a notice under this subparagraph as long as notice of the new date is provided by telephone or other means at least 2 business days prior to the original scheduled test date or the revised test date, whichever is earlier.
- C. Notwithstanding the notice requirements of paragraph B. above, the LG&E/CRGS may elect to repeat a certification test immediately, without advance notification, whenever

the LG&E/CRGS has determined during the certification testing that a test was failed or that a second test is necessary in order to attain a reduced relative accuracy test frequency.

- D. Written notice shall be submitted, either by mail or facsimile, of the date of periodic relative accuracy testing performed under 40 CFR Part 75 Appendix B no later than 21 days prior to the first scheduled day of testing. Testing may be performed on a date other than that already provided in a notice under this subparagraph as long as notice of the new date is provided either in writing or by telephone or other means acceptable to the District, and the notice is provided as soon as practicable after the new testing date is known, but no later than 24 hours in advance of the new date of testing.
- E. Notwithstanding the notice requirements under paragraph D. above, the LG&E/CRGS may elect to repeat a periodic relative accuracy test immediately, without additional notification whenever the LG&E/CRGS has determined that a test was failed, or that a second test is necessary in order to attain a reduced relative accuracy test frequency. If an observer from the District is present when a test is rescheduled, the observer may waive all notification requirements under paragraph D. above for the rescheduled test.

VII. Quarterly reports

- A. The LG&E/CRGS shall, within 30 days following the end of each calendar quarter, submit a report to the District that includes the following data and information for each utility boiler:
 - 1. The information and hourly data required in this Appendix, including all emissions and quality assurance data, and
 - 2. Average NO_x emission rate (lb/mmBtu of heat input, rounded to the nearest hundredth) during the rolling 30-day averaging periods.
- B. The LG&E/CRGS shall submit a certification in support of each quarterly emissions monitoring report. This certification shall indicate whether the monitoring data submitted were recorded in accordance with the requirements of this Appendix. In the event of any missing data periods, this certification shall include a description of the measures taken to minimize or eliminate the causes for the missing data periods.

Air Pollution Control Board of Jefferson County Board Order - Amendment 2

This amended Board Order is issued by the Air Pollution Control Board of Jefferson County pursuant to the authority granted in Kentucky Revised Statutes Chapter 77 Air Pollution Control.

Company: Louisville Gas & Electric Company
Cane Run Generating Station
5252 Cane Run Road
Louisville, KY 40232

Background and Discussion

Regulation 6.42 *Reasonably Available Control Technology Requirements for Major Volatile Organic Compound- and Nitrogen Oxides-Emitting Facilities* requires the establishment and implementation of reasonably available control technology (RACT) for certain affected facilities that emit oxides of nitrogen (NO_x) and that are located at a major stationary source for NO_x. Section 4.4 requires that each determination of RACT approved by the Air Pollution Control District of Jefferson County (District) be submitted to the U.S. Environmental Protection Agency (EPA) as a site-specific revision of the Kentucky State Implementation Plan (SIP).

The initial Board Order was approved by the Board on November 8, 1999, and submitted to the EPA by the Kentucky Natural Resources and Environmental Protection Cabinet on November 12, 1999, as a site-specific revision of the Kentucky SIP. Subsequently, the EPA identified issues needing resolution before this NO_x RACT determination would be approved as part of the Kentucky SIP. Board Order Amendment 1 addresses those issues. A Public Hearing on the amended Board Order was held before the Board on October 18, 2000. The Board approved Board Order Amendment 1 based upon the evidence presented.

Amendment 2 of this Board Order was done to add Part 2 of the NO_x RACT Plan, which includes emission requirements for new natural gas-fired combined cycle (NGCC) electricity generating unit, auxiliary boiler, and fuel gas dew point heater. The emission requirements in Amendment 1 for the coal-fired boilers will remain in the amended Board Order and be designated as Part 1 of the NO_x RACT Plan. A Public Hearing on this amended Board Order was held before the Board on July 18, 2012. Based upon the evidence presented at that hearing, the Board determined that approval of this amended Board Order and submittal as a site-specific revision of the Kentucky SIP were appropriate.

Now therefore be it ordered that:

1. The attached NO_x RACT Plan - Amendment 2, applicable to the LG&E/CRGS, is

approved by the District. The LG&E/CRGS shall comply with this plan.

2. Compliance with the attached NO_x RACT Plan - Amendment 2 shall be deemed compliance with the requirements of Regulation 6.42 section 1.2, section 1.3, Section 2 to the extent that this Section applies to section 4.3, section 4.3, and Section 5 to the extent that this Section applies to verification of compliance with the requirements pursuant to section 4.3.
3. This amended Board Order shall not be deemed or construed to be the result of any violation of any federal, state, or local statute, regulation, or ordinance for any purpose whatsoever.
4. The LG&E/CRGS has reviewed this amended Board Order and consents to all its requirements and terms.
5. The effective date of this amended Board Order is July 18, 2012. The Board Order Amendment 1, approved on October 18, 2000, shall remain in effect until July 18, 2012.

Dated this 18th day of July, 2012

Louisville Metro Air Pollution Control
Board

By: Robert W. Powell, M.D.
Robert W. Powell, M.D.
Chairman

Louisville Gas and Electric Company
Cane Run Generating Station

By: Ralph Bowling
Ralph Bowling
VP, Power Production

Louisville Metro Air Pollution Control
District

By: Paul Aud 7-16-12
Paul Aud
Air Pollution Control Officer

Approved as to form and legality:

By: Stacy Fritze Dott
Stacy Fritze Dott
Assistant County Attorney

NO_x RACT Plan - Amendment 2
(Part 1)

Part 1 of the NO_x RACT Plan will remain effective until the LG&E/CRGS shuts down the coal-fire boilers.

1. The oxides of nitrogen (NO_x, expressed as NO₂) emission from each utility boiler shall not exceed the rate as specified below, based upon a rolling 30-day average:

Unit 4 0.52 lb/MMBtu of heat input

Unit 5 0.52 lb/MMBtu of heat input

Unit 6 0.47 lb/MMBtu of heat input

2. The NO_x emission rate for each utility boiler shall be determined using the methods and procedures specified in NO_x RACT Plan Appendix A - Amendment 1, except that any reference to an annual average shall be read as a rolling 30-day average.
3. The Louisville Gas and Electric Company Cane Run Generating Station (LG&E/CRGS) shall install, maintain, and operate a NO_x continuous emissions monitoring system (CEMS) for each utility boiler and shall keep records and submit reports and other notifications as specified in NO_x RACT Plan Appendix A - Amendment 1.
4. The GT-11 turbine shall not be operated for more than 500 hours per calendar year.
5. The LG&E/CRGS shall make a record of the hours of operation during each day of operation of the GT-11 turbine. Each record shall be maintained for a minimum of 5 years and made available to the District upon request.
6. The quarterly report required by this NO_x RACT Plan Element (Element) No. 7 shall include a summary of the monthly and calendar-year-to-date hours of operation of the GT-11 gas turbine.
7. The LG&E/CRGS shall keep a record identifying all deviations from the requirements of this NO_x RACT Plan and shall submit to the District a written report of all deviations that occurred during the preceding calendar quarter. The report shall contain the following information:
 - A. The boiler number,
 - B. The beginning and ending date of the reporting period,
 - C. Identification of all periods during which a deviation occurred,
 - D. A description, including the magnitude, of the deviation,
 - E. If known, the cause of the deviation, and
 - F. A description of all corrective actions taken to abate the deviation.If no deviation occurred during the calendar quarter, the report shall contain a negative declaration. Each report shall be submitted within 30 days following the end of the calendar quarter.

8. In lieu of the requirements in this NO_x RACT Plan, the LG&E/CRGS may comply with alternative requirements regarding emission limitations, equipment operation, test methods, monitoring, recordkeeping, or reporting, provided the following conditions are met:
- A. The alternative requirements are established and incorporated into an operating permit pursuant to a Title V Operating Permit issuance, renewal, or significant permit revision process as established in Regulation 2.16,
 - B. The alternative requirements are consistent with the streamlining procedures and guidelines set forth in section II.A. of *White Paper Number 2 for Improved Implementation of the Part 70 Operating Permits Program*, March 5, 1996, U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards. The overall effect of compliance with alternative requirements shall consider the effect on an intrinsic basis, such as pounds per million Btu of heat input. However, alternative requirements that are developed based upon revisions to the applicable requirements contained in 40 CFR Part 60 or Part 75 shall be approvable pursuant to this NO_x RACT Plan Element,
 - C. The U.S. Environmental Protection Agency (EPA) has not objected to the issuance, renewal, or revision of the Title V Operating Permit, and either
 - D. If the public comment period preceded the EPA review period, then the District had transmitted any public comments concerning the alternative requirements to EPA with the proposed permit, or
 - E. If the EPA and public comment periods ran concurrently, then the District had transmitted any public comments concerning the alternative requirements to EPA no later than 5 working days after the end of the public comment period.

The District's determination of approval of any alternative requirements is not binding on EPA. Noncompliance with any alternative requirement established pursuant to the Title V Operating Permit process constitutes a violation of this NO_x RACT Plan.

NO_x RACT Plan - Amendment 2
(Part 2)

Part 2 of this NO_x RACT Plan will be effective when the new NGCC unit and the associated equipment start to be operated, and the coal-fired boilers are shut down and Part 1 of this Plan is voided.

1. The oxides of nitrogen (NO_x, expressed as NO₂) emission from the NGCC unit (U15), which includes combustion turbine GT-7A, GT-7B and the associated heat recovery steam generators, duct burners, and steam turbine generator, shall not exceed 15 ppm at 15% O₂ or 54 ng/J (0.43 lb/MWh), based upon a rolling 30-day average. (40 CFR 60.4320(a))
2. The Louisville Gas and Electric Company Cane Run Generating Station (LG&E/CRGS) shall install, maintain, and operate a NO_x continuous emissions monitoring system (CEMS) for each combustion turbine GT-7A and GT-7B (U15) and shall keep records and submit reports and other notifications as specified in NO_x RACT Plan Appendix A - Amendment 1. (40 CFR 60.4340(b)(1))
3. The LG&E/CRGS elect to install and certify a NO_x-diluent CEMS for combustion turbine GT-7A and GT-7B (U15) under 40 CFR 60.4345. Therefore the initial performance test required under 40 CFR 60.8 may be performed in the following alternative manner: (40 CFR 60.4405)
 - A. Perform a minimum of nine RATA reference method runs, with a minimum time per run of 21 minutes, at a single load level, within plus or minus 25 percent of 100 percent peak load. The ambient temperature must be greater than 0 °F during the RATA runs. (40 CFR 60.4405(a))
 - B. For each RATA run, concurrently measure the heat input to the unit using a fuel flow meter (or flow meters) and measure the electrical and thermal output from the unit. (40 CFR 60.4405(b))
 - C. Use the test data both to demonstrate compliance with the applicable NO_x emission limit under §60.4320 (and NO_x RACT) and to provide the required reference method data for the RATA of the CEMS described under §60.4335. (40 CFR 60.4405(c))
 - D. Compliance with the applicable emission limit of §60.4320 (and NO_x RACT) for Combustion Turbine GT-7A and GT-7B is achieved if the arithmetic average of all of the NO_x emission rates for the RATA runs (ppm or lb/MWh) does not exceed the emission limit. (40 CFR 60.4405(d))
4. The NO_x emission rate for combustion turbine GT-7A and GT-7B (U15) shall be determined using the methods and procedures specified in NO_x RACT Plan Appendix A - Amendment 1, except that any reference to an annual average shall be read as a rolling 30-day average.
5. The LG&E/CRGS shall calculate the hourly average NO_x emission rates for the NGCC unit (U15) using either ppm for units complying with the concentration limit or the

equation under 40 CFR 60.4350(f)(2) for units complying with the output based standard. (40 CFR 60.4350(f))

6. The GT-11 turbine (U11) shall not be operated for more than 500 hours per calendar year.
7. The LG&E/CRGS shall make a record of the hours of operation during each day of operation of the GT-11 turbine (U11). Each record shall be maintained for a minimum of 5 years and made available to the District upon request.
8. NO_x emissions from the auxiliary boiler (U16) shall not exceed 3.60 lb/hr, determined by multiplying the actual total heat input (in MMBtu) and the manufacturer certified emissions factor (0.036 lb/MMBtu), based upon a rolling 30-day average. (Regulation 6.42, section 4.3)
9. NO_x emissions from the auxiliary boiler (U16) will be monitored and recorded by maintaining records of the monthly fuel usage in this unit.
10. NO_x emissions from the fuel gas dew point heater (U17) shall not exceed 0.72 lb/hr, determined by multiplying the actual total heat input (in MMBtu) and the manufacturer certified emissions factor (0.06 lb/MMBtu), based upon a rolling 30-day average. (Regulation 6.42, section 4.3)
11. NO_x emissions from the fuel gas dew point heater (U17) will be monitored and recorded by maintaining records of the monthly fuel usage in this unit.
12. The LG&E/CRGS shall keep a record identifying all deviations from the requirements of this NO_x RACT Plan and shall submit to the District quarterly report of all deviations that occurred during the preceding calendar quarter. Each report shall be submitted within 30 days following the end of the calendar quarter. The report shall contain the following information:
 - A. The unit number,
 - B. The beginning and ending date of the reporting period,
 - C. Identification of all periods during which a deviation occurred,
 - D. A description, including the magnitude, of the deviation,
 - E. If known, the cause of the deviation, and
 - F. A description of all corrective actions taken to abate the deviation.
 - G. If no deviation occurred during the calendar quarter, the report shall contain a negative declaration.
 - H. This report shall include a summary of the monthly and calendar-year-to-date hours of operation of the GT-11 gas turbine.
 - I. This report shall include the excess emissions and monitor downtime for each combustion turbine. (40 CFR 60.4375)
13. In lieu of the requirements in this NO_x RACT Plan, the LG&E/CRGS may comply with alternative requirements regarding emission limitations, equipment operation, test

methods, monitoring, recordkeeping, or reporting, provided the following conditions are met:

- A. The alternative requirements are established and incorporated into an operating permit pursuant to a Title V Operating Permit issuance, renewal, or significant permit revision process as established in Regulation 2.16,
- B. The alternative requirements are consistent with the streamlining procedures and guidelines set forth in section II.A. of *White Paper Number 2 for Improved Implementation of the Part 70 Operating Permits Program*, March 5, 1996, U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards. The overall effect of compliance with alternative requirements shall consider the effect on an intrinsic basis, such as pounds per million Btu of heat input. However, alternative requirements that are developed based upon revisions to the applicable requirements contained in 40 CFR Part 60 or Part 75 shall be approvable pursuant to this NO_x RACT Plan Element,
- C. The U.S. Environmental Protection Agency (EPA) has not objected to the issuance, renewal, or revision of the Title V Operating Permit, and either
- D. If the public comment period preceded the EPA review period, then the District had transmitted any public comments concerning the alternative requirements to EPA with the proposed permit, or
- E. If the EPA and public comment periods ran concurrently, then the District had transmitted any public comments concerning the alternative requirements to EPA no later than 5 working days after the end of the public comment period.

The District's determination of approval of any alternative requirements is not binding on EPA. Noncompliance with any alternative requirement established pursuant to the Title V Operating Permit process constitutes a violation of this NO_x RACT Plan.

History: Approved 11-8-99, effective 1-1-00; amended a1/10-18-00, effective 1-1-01; amended a2/07-18-12, effective 07-18-12

Appendix A to NO_x RACT Plan - Amendment 2
Requirements for NO_x CEMS

I. General Operating Requirements

- A. Primary measurement requirements.** The LG&E/CRGS shall, for each utility boiler and combustion turbine (GT-7A and GT-7B), install, certify, operate, and maintain, in accordance with the requirements of 40 CFR 75, an oxides of nitrogen (NO_x) continuous emission monitoring system (CEMS), consisting of a NO_x pollutant concentration monitor and an oxygen (O₂) or carbon dioxide (CO₂) diluent gas monitor, with an automated data acquisition and handling system for measuring and recording NO_x concentration (in parts per million [ppm]), O₂ or CO₂ concentration (in percent O₂ or CO₂) and NO_x emission rate (in lb/mmBtu of heat input) discharged to the atmosphere. Any reference in this Appendix to an annual average shall be read as a rolling 30-day average. The LG&E/CRGS shall account for total NO_x emissions, both nitrogen oxide (NO) and nitrogen dioxide (NO₂), either by monitoring for both NO and NO₂ or by monitoring for NO only and adjusting the emissions data to account for NO₂.
- B. Primary equipment performance requirements.** The LG&E/CRGS shall ensure that each CEMS used to demonstrate compliance with the NO_x emission limit meets the equipment, installation, and performance specifications in 40 CFR 75 Appendix A, and is maintained according to the quality assurance and quality control procedures in 40 CFR 75 Appendix B.
- C. Primary equipment hourly operating requirements.**
1. The LG&E/CRGS shall ensure that all CEMS are in operation and monitoring the emissions from the associated utility boiler and combustion turbine (GT-7A and GT-7B) at all times that the utility boiler and combustion turbine (GT-7A and GT-7B) combusts any fuel except during a period of any of the following:
 - a. Calibration, quality assurance, or preventive maintenance, any of which is performed pursuant to 40 CFR 75.21, 40 CFR 75 Appendix B, District regulations, District permit conditions, or this NO_x RACT Plan, or
 - b. Repair, backups of data from the data acquisition and handling system, or recertification, any of which is performed pursuant to 40 CFR 75.20.
 2. The LG&E/CRGS shall ensure that the following requirements are met:
 - a. Each CEMS and component thereof is capable of completing a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute interval. The LG&E/CRGS shall reduce all volumetric flow, CO₂ concentration, O₂ concentration, NO_x concentration, and NO_x emission rate data collected by the monitors to hourly averages. Hourly averages shall be computed using at least one data point in each 15-minute

quadrant of an hour during which the utility boiler and combustion turbine (GT-7A and GT-7B) combusted fuel during that quadrant of the hour. Notwithstanding this requirement, an hourly average may be computed from at least two data points separated by a minimum of 15 minutes (where the unit operates for more than one quadrant of the hour) if data are unavailable as a result of the performance of any activity specified in paragraph I.C.1. of this Appendix. The LG&E/CRGS shall use all valid measurements or data points collected during an hour to calculate the hourly averages. All data points collected during an hour shall be, to the extent practicable, evenly spaced over the hour.

- b. Failure of a CO₂ or O₂ diluent concentration monitor, flow monitor, or NO_x pollutant concentration monitor to acquire the minimum number of data points for calculation of an hourly average shall result in the failure to obtain a valid hour of data and the loss of such component data for the entire hour. An hourly average NO_x emission rate in lb/mmBtu of heat input is valid only if the minimum number of data points are acquired by both the pollutant concentration monitor (NO_x) and the diluent monitor (CO₂ or O₂). If a valid hour of data is not obtained, the owner or operator shall estimate and record emissions, moisture, or flow data for the missing hour by means of the automated data acquisition and handling system, in accordance with the applicable procedure for missing data substitution in 40 CFR 75 Subpart D.

D. Optional backup monitor requirements. If the LG&E/CRGS chooses to use two or more CEMS, each of which is capable of monitoring the same stack or duct at a specific utility boiler and combustion turbine (GT-7A and GT-7B), then the LG&E/CRGS shall designate one CEMS as the primary monitoring system and shall record this designation in the monitoring plan. The LG&E/CRGS shall designate any other CEMS as a backup CEMS in the monitoring plan. Any other backup CEMS shall be designated as a redundant backup CEMS, non-redundant backup CEMS, or reference method CEMS, as described in 40 CFR 75.20(d). When the certified primary monitoring system is operating and not out-of-control as defined in 40 CFR 75.24, only data from the certified primary monitoring system shall be reported as valid, quality-assured data. Thus, data from a backup CEMS may be reported as valid, quality-assured data only when a backup CEMS is operating and not out-of-control as defined in 40 CFR 75.24 or in the applicable reference method in 40 CFR 60 Appendix A and when the certified primary monitoring system is not operating or is operating but out-of-control. A particular monitor may be designated both as a certified primary monitor for one unit and as a certified redundant backup monitor for another unit.

E. Minimum measurement capability requirements. Each CEMS and component thereof shall be capable of accurately measuring, recording, and reporting data, and shall not incur a full scale exceedance, except as provided in section 2.1.2.5 of

40 CFR 75 Appendix A.

- F. The LG&E/CRGS shall not operate a utility boiler and combustion turbine (GT-7A and GT-7B) so as to discharge, or allow to be discharged, emissions of NO_x to the atmosphere without accounting for all such emissions in accordance with the methods and procedures specified in this Appendix.
- G. The LG&E/CRGS shall not disrupt the CEMS, any portion thereof, or any other approved emission monitoring method, and thereby avoid monitoring and recording NO_x emissions discharged into the atmosphere, except for periods of recertification or periods when calibration, quality assurance testing, or maintenance is performed in accordance with the provisions of this Appendix.
- H. The LG&E/CRGS shall not retire or permanently discontinue use of the CEMS, any component thereof, or any other approved emission monitoring system under this Appendix except under any one of the following circumstances:
 - 1. The LG&E/CRGS is monitoring NO_x emissions from the utility boiler and combustion turbine (GT-7A and GT-7B) with another certified monitoring system approved in accordance with the provisions of paragraph I.D. of this Appendix, or
 - 2. The LG&E/CRGS submits notification of the date of certification testing of a replacement monitoring system.
- I. The quality assurance and quality control requirements in 40 CFR 75.21 that applies to NO_x pollutant concentration monitors and diluent gas monitors shall be met.
- J. **Moisture correction.** If a correction for the stack gas moisture content is needed to properly calculate the NO_x emission rate in lb/mmBtu of heat input (i.e., if the NO_x pollutant concentration monitor measures on a different moisture basis from the diluent monitor), LG&E/CRGS shall either report a fuel-specific default moisture value for each utility boiler and combustion turbine (GT-7A and GT-7B) operating hour, as provided in 40 CFR 75.11(b)(1), or shall install, operate, maintain, and quality assure a continuous moisture monitoring system, as defined in 40 CFR 75.11(b)(2). Notwithstanding this requirement, if Equation 19-3, 19-4 or 19-8 in Method 19 in Appendix A to 40 CFR Part 60 is used to measure NO_x emission rate, the following fuel-specific default moisture percentages shall be used in lieu of the default values specified in 40 CFR 75.11(b)(1): 5.0%, for anthracite coal; 8.0% for bituminous coal; 12.0% for sub-bituminous coal; 13.0% for lignite coal; and 15.0% for wood.

II. Specific Provisions for Monitoring NO_x Emission Rate (NO_x and diluent gas monitors)

- A. The LG&E/CRGS shall meet the general operating requirements in 40 CFR 75.10 for a NO_x CEMS for each utility boiler and combustion turbine (GT-7A and

GT-7B). The diluent gas monitor in the NO_x CEMS may measure either O₂ or CO₂ concentration in the flue gases.

- B. The LG&E/CRGS shall calculate hourly and rolling 30-day NO_x emission rates by combining the NO_x concentration (in ppm), diluent concentration (in percent O₂ or CO₂), and percent moisture (if applicable) measurements according to the procedures in 40 CFR 75 Appendix F.

III. Monitoring plan

The LG&E/CRGS shall prepare and maintain a monitoring plan as specified in 40 CFR 75.53. The monitoring plan shall be submitted to the District no later than 45 days prior to the first scheduled certification test.

IV. Recordkeeping Provisions

- A. The LG&E/CRGS shall maintain for each utility boiler and combustion turbine (GT-7A and GT-7B) a file of all measurements, data, reports, and other information required by this Appendix at the stationary source in a form suitable for inspection for at least 5 years from the date of each record. This file shall contain the following information:
1. The data and information required in paragraph IV.B. of this Appendix,
 2. The component data and information used to calculate values required in paragraph IV.B. of this Appendix,
 3. The current monitoring plan as specified in 40 CFR 75.53, and
 4. The quality control plan as described in 40 CFR 75 Appendix B.
- B. **NO_x emission record provisions.** The LG&E/CRGS shall record hourly the following information as measured and reported from the certified primary monitor, certified back-up or certified portable monitor, or other approved method of emissions determination for each utility boiler and combustion turbine (GT-7A and GT-7B):
1. Date and hour,
 2. Hourly average NO_x concentration (ppm, rounded to the nearest tenth),
 3. Hourly average diluent gas concentration (percent O₂ or percent CO₂, rounded to the nearest tenth),
 4. Hourly average NO_x emission rate (rounded to nearest hundredth),
 5. Hourly average NO_x emission rate (rounded to nearest hundredth) adjusted for bias, if a bias adjustment factor is required by 40 CFR 75.24 (d),
 6. Percent monitoring system data availability (recorded to the nearest tenth of a percent), calculated pursuant to 40 CFR 75.32,
 7. Method of determination for hourly average NO_x emission rate using Codes 1-55 in 40 CFR 75.57 Table 4A, and
 8. Unique code identifying emissions formula used to derive hourly average NO_x emission rate, as provided for in 40 CFR 75.53.

V. Certification, Quality Assurance, and Quality Control Record Provisions

- A. For each NO_x pollutant concentration monitor and diluent gas monitor, the LG&E/CRGS shall record the following:
1. Results of all trial runs and certification tests and quality assurance activities and measurements (including all reference method field test sheets, charts, records of combined system responses, laboratory analyses, and example calculations) necessary to substantiate compliance with all relevant requirements of this Appendix,
 2. Bias test results as specified in 40 CFR 75, Appendix A, section 7.6.4,
 3. The appropriate bias adjustment factor as follows:
 - a. The value derived from Equations A-11 and A-12 in 40 CFR 75 Appendix A for any monitoring system or component that failed the bias test, or
 - b. A value of 1.0 for any monitoring system or component that passed the bias test, and
 4. The component/system identification code.
- B. For each NO_x pollutant concentration monitor and diluent gas monitor, the LG&E/CRGS shall record the following for all daily and 7-day calibration error tests, including any follow-up tests after corrective action:
1. Instrument span and span scale,
 2. Date and hour,
 3. Reference value (i.e., calibration gas concentration or reference signal value, in ppm or other appropriate units),
 4. Observed value (monitor response during calibration, in ppm or other appropriate units), (flag if using alternative performance specification for low emitters or differential pressure monitors),
 5. Percent calibration error (rounded to the nearest tenth of a percent),
 6. Calibration gas level,
 7. Test number and reason for test,
 8. For 7-day calibrations tests for certification or recertification, a certification from the cylinder gas vendor or CEMS vendor that calibration gases as defined in 40 CFR 72.2 and 40 CFR 75 Appendix A were used to conduct calibration error testing,
 9. Description of any adjustments, corrective actions, or maintenance following a test,
 10. For quality test for off-line calibration, whether the unit is off-line or on-line, and
 11. The component/system identification code.
- C. For each NO_x pollutant concentration monitor and diluent gas monitor, the LG&E/CRGS shall record the following for the initial and all subsequent linearity checks, including any follow-up tests after corrective action:
1. Instrument span and span scale,
 2. Calibration gas level,

3. Date, hour, and minute of each gas injection at each calibration gas level,
4. Reference value (i.e., reference gas concentration for each gas injection at each calibration gas level, in ppm or other appropriate units),
5. Observed value (monitor response to each reference gas injection at each calibration gas level, in ppm or other appropriate units),
6. Mean of reference values and mean of measured values at each calibration gas level,
7. Linearity error at each of the reference gases concentrations (rounded to the nearest tenth of a percent), (flag if using alternative performance specification),
8. Test number and reason for test (flag if aborted test),
9. Description of any adjustments, corrective action, or maintenance prior to a passed test or following a failed test,
10. The number of out-of-control hours, if any, following any tests, and
11. The component/system identification code.

D. For each NO_x pollutant concentration monitor and diluent gas monitor, the LG&E/CRGS shall record the following information for the initial and all subsequent relative accuracy tests and test audits:

1. Reference method(s) used,
2. Individual test run data from the relative accuracy test audit for the NO_x pollutant concentration monitor or diluent gas monitor, including:
 - a. Date, hour, and minute of beginning of test run,
 - b. Date, hour, and minute of end of test run,
 - c. Monitoring system identification code,
 - d. Test number and reason for test,
 - e. Operating load level (low, mid, high, or normal, as appropriate) and number of load levels comprising test,
 - f. Normal load indicator for flow RATAs (except for peaking units),
 - g. Units of measure,
 - h. Run number,
 - i. Run data from CEMS being tested, in the appropriate units of measure,
 - j. Run data for reference method, in the appropriate units of measure,
 - k. Flag value (0, 1, or 9, as appropriate) indicating whether run has been used in calculating relative accuracy and bias values or whether the test was aborted prior to completion,
 - l. Average gross unit load (expressed as a total gross unit load rounded to the nearest MWe or as steam load rounded to the nearest thousand lb/hr), and
 - m. Flag to indicate whether an alternative performance specification has been used,
3. Calculations and tabulated results, as follows:
 - a. Arithmetic mean of the monitoring system measurement values, reference method values, and of their differences, as specified in Equation A-7 in 40 CFR 75 Appendix A,

- b. Standard deviation, as specified in Equation A-8 in 40 CFR 75 Appendix A,
 - c. Confidence coefficient, as specified in Equation A-9 in 40 CFR 75 Appendix A,
 - d. Statistical "t" value used in calculations,
 - e. Relative accuracy test results, as specified in Equation A-10 in 40 CFR 75 Appendix A,
 - f. Bias test results as specified in section 7.6.4 in 40 CFR 75 Appendix A,
 - g. Bias adjustment factor from Equation A-12 in 40 CFR 75 Appendix A for any monitoring system or component that failed the bias test (except as otherwise provided in section 7.6.5 in 40 CFR 75 Appendix A) and 1.000 for any monitoring system or component that passed the bias test,
 - h. F-factor value(s) used to convert NO_x pollutant concentration and diluent gas (O₂ or CO₂) concentration measurements into NO_x emission rates (in lb/mmBtu),
 - i. The raw data and calculated results for any stratification tests performed in accordance with sections 6.5.6.1 through 6.5.6.3 in 40 CFR 75 Appendix A, and
 - j. For moisture monitoring systems, the coefficient "K" factor or other mathematical algorithm used to adjust the monitoring system with respect to the reference method,
4. Description of any adjustment, corrective action, or maintenance prior to a passed test or following a failed or aborted test,
5. For each run of each test using Method 7E or 3A in Appendix A of 40 CFR 60 to determine NO_x, CO₂, or O₂ concentration the following:
- a. Pollutant or diluent gas being measured,
 - b. Span of reference method analyzer,
 - c. Type of reference method system (e.g., extractive or dilution type),
 - d. Reference method dilution factor (dilution type systems, only),
 - e. Reference gas concentration (low, mid, and high gas levels) used for the 3-point, pre-test analyzer calibration error test (or, for dilution type reference method systems, for the 3-point, pre-test system calibration error test) and for any subsequent recalibrations,
 - f. Analyzer responses to the zero-, mid-, and high-level calibration gases during the 3-point pre-test analyzer (or system) calibration error test and during any subsequent recalibration(s),
 - g. Analyzer calibration error at each gas level (zero, mid, and high) for the 3-point, pre-test analyzer (or system) calibration error test and for any subsequent recalibration(s) (percent of span value),
 - h. Upscale gas concentration (mid or high gas level) used for each pre-run or post-run system bias check or, for dilution type reference method systems, for each pre-run or post-run system calibration error check,
 - i. Analyzer response to the calibration gas for each pre-run or post-run

- j. system bias (or system calibration error) check, The arithmetic average of the analyzer responses to the zero-level gas, for each pair of pre- and post-run system bias (or system calibration error) checks,
 - k. The arithmetic average of the analyzer responses to the upscale calibration gas, for each pair of pre- and post-run system bias (or system calibration error) checks,
 - l. The results of each pre-run and each post-run system bias (or system calibration error) check using the zero-level gas (percentage of span value),
 - m. The results of each pre-run and each post-run system bias (or system calibration error) check using the upscale calibration gas (percentage of span value),
 - n. Calibration drift and zero drift of analyzer during each RATA run (percentage of span value),
 - o. Moisture basis of the reference method analysis,
 - p. Moisture content of stack gas, in percent, during each test run (if needed to convert to moisture basis of CEMS being tested),
 - q. Unadjusted (raw) average pollutant or diluent gas concentration for each run,
 - r. Average pollutant or diluent gas concentration for each run, corrected for calibration bias (or calibration error) and, if applicable, corrected for moisture,
 - s. The F-factor used to convert reference method data to units of lb/mmBtu (if applicable)
 - t. Date(s) of the latest analyzer interference test(s),
 - u. Results of the latest analyzer interference test(s),
 - v. Date of the latest NO₂ to NO conversion test (Method 7E only),
 - w. Results of the latest NO₂ to NO conversion test (Method 7E only), and
 - x. For each calibration gas cylinder used during each RATA, record the cylinder gas vendor, cylinder number, expiration date, pollutant(s) in the cylinder, and certified gas concentration(s),
6. The number of out-of-control hours, if any, following any tests, and
 7. The component/system identification code.

VI. Notifications

- A. The LG&E/CRGS or a designated representative shall submit notice to the District for the following purposes, as required by this Appendix:
 1. Initial certification and recertification test notifications. Written notification shall be submitted of initial certification tests, recertification tests; and revised test dates as specified in 40 CFR 75.20 for continuous emission monitoring systems, except for testing only of the data acquisition and handling system, and
 2. Notification of initial certification testing. Initial certification test

notifications shall be submitted not later than 21 days prior to the first scheduled day of initial certification testing. Testing may be performed on a date other than that already provided in a notice under this subparagraph as long as notice of the new date is provided either in writing or by telephone or other means at least 7 days prior to the original scheduled test date or the revised test date, whichever is earlier.

- B. For retesting following a loss of certification under 40 CFR 75.20(a)(5) or for recertification under 40 CFR 75.20(b), notice of testing shall be submitted either in writing or by telephone at least 7 days prior to the first scheduled day of testing, except that in emergency situations when testing is required following an uncontrollable failure of equipment that results in lost data, notice shall be sufficient if provided within 2 business days following the date when testing is scheduled. Testing may be performed on a date other than that already provided in a notice under this subparagraph as long as notice of the new date is provided by telephone or other means at least 2 business days prior to the original scheduled test date or the revised test date, whichever is earlier.
- C. Notwithstanding the notice requirements of paragraph B. above, the LG&E/CRGS may elect to repeat a certification test immediately, without advance notification, whenever the LG&E/CRGS has determined during the certification testing that a test was failed or that a second test is necessary in order to attain a reduced relative accuracy test frequency.
- D. Written notice shall be submitted, either by mail or facsimile, of the date of periodic relative accuracy testing performed under 40 CFR Part 75 Appendix B no later than 21 days prior to the first scheduled day of testing. Testing may be performed on a date other than that already provided in a notice under this subparagraph as long as notice of the new date is provided either in writing or by telephone or other means acceptable to the District, and the notice is provided as soon as practicable after the new testing date is known, but no later than 24 hours in advance of the new date of testing.
- E. Notwithstanding the notice requirements under paragraph D. above, the LG&E/CRGS may elect to repeat a periodic relative accuracy test immediately, without additional notification whenever the LG&E/CRGS has determined that a test was failed, or that a second test is necessary in order to attain a reduced relative accuracy test frequency. If an observer from the District is present when a test is rescheduled, the observer may waive all notification requirements under paragraph D. above for the rescheduled test.

VII. Quarterly reports

- A. The LG&E/CRGS shall, within 30 days following the end of each calendar quarter, submit a report to the District that includes the following data and information for each utility boiler and combustion turbine (GT-7A and GT-7B):

1. The information and hourly data required in this Appendix, including all emissions and quality assurance data, and
 2. Average NO_x emission rate (lb/mmBtu of heat input, rounded to the nearest hundredth) during the rolling 30-day averaging periods.
- B.** The LG&E/CRGS shall submit a certification in support of each quarterly emissions monitoring report. This certification shall indicate whether the monitoring data submitted were recorded in accordance with the requirements of this Appendix. In the event of any missing data periods, this certification shall include a description of the measures taken to minimize or eliminate the causes for the missing data periods.

THE COURIER-JOURNAL - A GANNETT COMPANY

STATE OF KENTUCKY

County of Jefferson

Affidavit of Publication

I, *Majorie Wise* of THE COURIER-JOURNAL, clerk of THE COURIER JOURNAL general circulation printed and published at Louisville, Kentucky, do solemnly swear that from my own personal knowledge, and reference to the files of said publication, the advertisement of:

Title: Notice of Public Comment

Lines: 86

Period & Hearing

Date: 6/13/2012

Inches: 1x8.38

Majorie Wise, Clerk

Signature of person making proof

Subscribed and sworn to before me this 13th day of June, 2012.

Junice C. Richardson, Notary
Notary Public, State at Large, KY
My commission expires June 14, 2014

7-9-12

Notice of Public
Comment Period
and Hearing

The Louisville Metro Air Pollution Control Board opens a public comment period June 14, 2012, on an amended Board Order and site-specific plan for oxides of nitrogen (NOx) reasonably available control technology (RACT) for Louisville Gas and Electric Cane Run. If approved by the Board, this amended NOx RACT plan will be submitted to the U.S. Environmental Protection Agency for revision of the Kentucky State Implementation Plan.

Written statements will be accepted by the Board, Rachael Hamilton, Secretary-Treasurer, Louisville Metro Air Pollution Control District, 850 Barret Ave., Louisville, KY 40204-1745, until 5:00 p.m. July 17, 2012. Written statements will also be accepted electronically until the same deadline via the Internet at the email address airorders@louisvilleky.gov. Oral statement will be accepted at the public hearing on July 18, 2012, at 10:00 a.m. in the Board Room, 850 Barret Ave., Louisville.

A paper copy of the proposed Board Order may be obtained from Monica Little, (502) 574-7246, between 8:00 a.m. and 5:00 p.m., Monday through Friday. An electronic copy of the proposed Board Order may be downloaded from the District's website at www.louisvilleky.gov/APCD/Doccket.htm.

STATE OF KENTUCKY

County of Jefferson

Affidavit of Publication

I, *Majorie Wise* of THE COURIER-JOURNAL, clerk of THE COURIER JOURNAL general circulation printed and published at Louisville, Kentucky, do solemnly swear that from my own personal knowledge, and reference to the files of said publication, the advertisement of:

Title: *Notice of Public Comment & Hearing* Lines: 86

Date: 6/29/2012 Inches: 1x8.38

Majorie Wise, Clerk

Signature of person making proof

Subscribed and sworn to before me this 29th day of June, 2012.

Janice C. Richardson, Notary

Notary Public, State at Large, KY
My commission expires June 14, 2014

PSN
8-6-12

Notice of Public Comment Period and Hearing

The Louisville Metro Air Pollution Control Board opens a public comment period June 14, 2012, on an amended Board Order and site-specific plan for oxides of nitrogen (NOx) reasonably available control technology (RACT) for Louisville Gas and Electric Cane Run. If approved by the Board, this amended NOx RACT plan will be submitted to the U.S. Environmental Protection Agency for revision of the Kentucky State Implementation Plan.

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**AIR POLLUTION CONTROL DISTRICT
LOUISVILLE, KENTUCKY**

GREG FISCHER
MAYOR

LAUREN ANDERSON, DIRECTOR

**Louisville Metro Air Pollution Control Board
Notice of Public Hearing and Board Meeting**

The Louisville Metro Air Pollution Control Board will hold a public hearing and its regular monthly meeting at 10:00 a.m. on Wednesday, July 18, 2012, in the Board Room, 850 Barret Avenue, Louisville. The Board invites the public to attend.

Public Hearing Agenda

1. Proposed Board Order for Louisville Gas & Electric Company Cane Run Generating Station NO_x RACT Plan, Amendment 2

Board Meeting Agenda

1. Call to Order
 - A. Recognition of Quorum
2. Introductions
3. Public Recognitions
4. Approval of Minutes – public hearing and regular meeting held on June 20, 2012
5. Public Comment¹
6. Unfinished Business
7. New Business
 - A. Proposed Board Order for Louisville Gas & Electric Company Cane Run Generating Station NO_x RACT Plan, Amendment 2
8. Committee Reports
9. Staff Reports
 - A. Director
 - B. Air Quality Data
 - C. Enforcement Status Report
 - D. Excess Emission Report
 - E. Lawn Care for Cleaner Air Quarterly Report
10. Adjourn

The next Board meeting is **Wednesday, August 15, 2012, at 10:00 a.m.**

¹This is a regularly scheduled agenda item to give individuals and organizations an opportunity to address the Board on air pollution issues. Presentations shall be limited to two minutes, except that the Board Chair may, for cause, allow three minutes. Persons wishing to address the Board shall notify the Secretary-Treasurer (502/574-5218) and submit a completed speaker's registration card to the Secretary-Treasurer before 10:00 a.m. the day of the Board meeting.

Documents for this meeting that are available electronically may be found
on the District's web page at the following URL:
<http://www.louisvilleky.gov/APCD/Calendar/20120718BoardMeeting.htm>.

www.louisvilleky.gov

**Minutes
Regular Meeting
of the
Louisville Metro Air Pollution Control Board
July 18, 2012**

The regular meeting of the Louisville Metro Air Pollution Control Board was called to order on July 18, 2012, at 10:07 a.m. in the Board Room of the Louisville Metro Air Pollution Control District, 850 Barret Avenue, Louisville, Kentucky, by the Chairman, Dr. Robert Powell. Other Board members present were Mr. Ron Thomas, Mr. Bill Jacob, Ms. Bonnie Biemer, Mr. Steve Thomas, and Ms. Kathy Matheny. A quorum was present.

The following Louisville Metro Air Pollution Control District staff members were present: Lauren Anderson, Rachael Hamilton, Paul Aud, Thomas Nord, Terri Phelps, Cynthia Lee, Matt King, Michelle King, Steven Gravatte, Emily Tyler, Karen Thorne, Shannon Hosey, Kim Loechle, Craig Butler, Rick Williams, Colette McConville, Bob Wesely, Dr. Yiqiu Lin, Eric Burnette, Stewart McCollam, Nick Hart, and Monica Little. Also present were Assistant County Attorney Stacy Fritze Dott, and County Attorney staff member Tammy Brown.

The following guests were present: Paul Bowe, Marcus Paint; Eric Brown, GE Appliances; Brandan Burfict, LG&E and KU Energy LLC; Bhanu Calvert, DuPont; Dennis Conniff, GLI ATF; Tim Corrigan, GLI; Barbara Hall, Ford-KTP; Erica Peterson, WFPL; Sarah Scheetz, LG&E and KU Energy LLC; and Paige Mosser Theriac, TECL.

Approval of Minutes

A correction to the regular Board meeting was made on page 2, Director's Report, fifth paragraph, last sentence to include the word "surrounding" following "activities in...." The minutes of the public hearing and regular Board meeting held on June 20, 2012, were approved with the correction to the regular Board meeting minutes.

New Business

1. Proposed Board Order for Louisville Gas & Electric Company Cane Run Generating Station NO_x RACT Plan, Amendment 2

Mr. Aud recommended on behalf of the District that the Board adopt the Board Order for Louisville Gas & Electric Company Cane Run Generating Station NO_x RACT Plan, Amendment 2, as proposed.

Motion: Mr. Ron Thomas moved to adopt the Board Order with Louisville Gas & Electric Company Cane Run Generating Station, Amendment 2, as proposed.

The motion passed.

Staff Reports

A. Director

Ms. Anderson announced the District's proposed revision of the permitting and fee regulations in Chapter 2 and reported on the District's efforts to inform the public about the proposed changes,

including the creation of a Fee Regulation Advisory Group (FRAG), which would be open to all interested parties and meet on July 25, 2012, at 2:00 p.m. to review the proposed changes. With respect to the proposed fee amendments, some are necessary as part of the District's ongoing efforts to streamline the permitting process and implement an updated fee schedule. For example, the District will be proposing a new regulation, Regulation 2.18 *Prohibitory Rule For District-Origin Minor Source Permits*, and the associated fee for sources that are subsequently authorized to operate under the new regulation. Other changes are necessary to address an ongoing budget shortfall, which was subsidized through the end of FY 2012 by the Louisville Metro general fund.

Ms. Anderson said the District's fees are mandated by KRS 77.205 and regulated by the Board. In preparing the proposed regulations, the District reviewed program and permit fees from similar agencies. The proposed regulations will be presented to the Board after the informal and formal comment period takes place. Dr. Powell reiterated that fiscal responsibility was a function of the Board and encouraged the Board to review the current and proposed permitting and fee regulations.

B. Air Quality Data

Ms. Anderson reported that several air quality alerts had been issued since the previous Board meeting. There were also several exceedances of the ozone standard above the 75 ppb standard, but no exceedances of the PM_{2.5} standard during the same time period.

Ms. Anderson also reported on a Sierra Club report about sulfur dioxide (SO₂) emissions. The report, which was based on modeling, indicated there were exceedances of the one-hour 75 ppb SO₂ standard at monitors near LG&E's coal-fired Mill Creek and Cane Run Generating Stations. The District has proposed a construction permit for LG&E to install combined natural gas turbines at the Cane Run generating station and issued a construction permit to allow LG&E to upgrade all of the pollution controls at the Mill Creek station, both of which will result in greatly reduced pollution and SO₂ from coal combustion.

Ms. Matheny asked if there was a connection between the temperature and air quality issues. Ms. Anderson said there is a correlation between the temperature and air pollution, which the District regularly tracks.

Ms. Biemer generally asked what the District was doing to reduce pollution in the community. Ms. Anderson said the District continued to implement required and voluntarily measures to reduce all pollutants. Ms. Anderson reviewed the various initiatives the District utilizes to reduce pollution, including those focused on reducing PM_{2.5} and ozone levels, which continue to be of concern for the community.

The air quality monitoring report was submitted for filing. A copy is attached to the original minutes.

C. Enforcement Status Report

The enforcement status report was submitted for filing. A copy is attached to the original minutes.

D. Excess Emissions Report

The June 2012 Excess Emissions Report was submitted for filing. A copy is attached to the original minutes.

E. Lawn Care for Cleaner Air Quarterly Report

Mr. Eric Burnette, Environmental Coordinator for the Lawn Care for Cleaner Air program, presented information on the new Grow More Mow Less campaign, including new artwork. The Grow More Mow Less program was designed to encourage residents and businesses to reduce the amount of grass they mow by planting trees and using ground coverings. The report also included information on the rebate program and how pollution emissions were decreased when electric and battery powered lawn mowers were used rather than gas powered mowers.

Immediately following the Grow More Mow Less presentation, a giveaway drawing was held for a Neuton battery powered lawn mower. Ms. Victoria Nelson was the winner of the lawn mower.

The Lawn Care for Cleaner Air quarterly report was submitted for filing. A copy is attached to the original minutes.

Next Meeting

The next regular Board meeting is scheduled Wednesday, August 15, 2012, at 10:00 a.m.

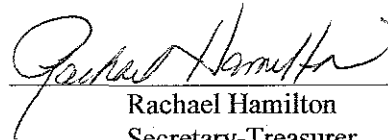
A public hearing is scheduled Wednesday, August 15, 2012, at 5:00 p.m. to receive public comments on a proposed construction permit for LG&E's Cane Run Generating Station. The public hearing will be held at Memorial Auditorium in the 2nd floor Ball Room.

Adjourn

The meeting was adjourned at 10:58 a.m.



Robert W. Powell
Chairman



Rachael Hamilton
Secretary-Treasurer

**Minutes
Public Hearing
of the
Louisville Metro Air Pollution Control Board
July 18, 2012**

A public hearing of the Louisville Metro Air Pollution Control Board was called to order on July 18, 2012, at 10:01 a.m. in the Board Room of the Louisville Metro Air Pollution Control District, 850 Barret Avenue, Louisville, Kentucky, by the Chairman, Dr. Robert Powell.

General Statement, Rules and Purpose

The Chairman read the opening announcements, rules and purpose of the public hearing, which was to review a proposed amended Board Order.

1. Proposed Board Order for Louisville Gas & Electric Company Cane Run Generating Station NO_x RACT Plan, Amendment 2

Mr. Paul Aud, Environmental Engineering Manager, stated that the Clean Air Act Requires major emitters of oxides of nitrogen (NO_x), like LG&E, to utilize reasonably available control technology (RACT) to control NO_x emissions. In addition to being reasonably available, RACT also takes the technological and economic feasibility of controlling NO_x emissions into account. Controlling NO_x emissions in the Ohio Valley is important because NO_x is a major contributor to the region's ozone problems.

LG&E Cane Run Generating Station currently operates its existing coal-fired units under an approved NO_s RACT Plan, Amendment 1. Amendment 1 is included in the current Title V permit for the facility. On June 13, 2011, LG&E submitted a construction application to the District to construct a new natural gas-fired combined cycle generating facility at the Cane Run Generating Station and retire the existing coal-fired units. The District proposed adding a second amendment to the NO_s RACT Plan to address the emissions requirements for the new natural gas-fired combined cycle electricity generating unit, auxiliary boilers, and fuel gas dew point heater. Mr. Aud stated that the emissions requirements in Amendment 1 for coal-fired units would remain in effect in the amended Board Order until the coal-fired units were shut down.

2. Public Comments were requested

No comments received

Adjournment

The public hearing adjourned at 10:06 a.m.



Robert W. Powell
Chairman



Rachael Hamilton
Secretary-Treasurer

Sierra Club Petition to Object

EXHIBIT A

(Revised Permit)



Louisville Metro Air Pollution Control District
 701 West Ormsby Avenue, Suite 303
 Louisville, Kentucky 40203-3137



Title V Operating Permit

Permit No.: 145-97-TV (R3)

Plant ID: 127

Effective Date: 7/31/2014

Expiration Date: 7/31/2019

Permission is hereby given by the Louisville Metro Air Pollution Control District to operate the process(es) and equipment described herein which are located at:

Owner: Louisville Gas & Electric Company
Source: Mill Creek Generating Station
 14460 Dixie Highway
 Louisville, KY 40272

The applicable procedures of District Regulation 2.16 regarding review by the U.S. EPA and public participation have been followed in the issuance of this permit. Based on review of the application on file with the District, permission is given to operate under the conditions stipulated herein. If a renewal permit is not issued prior to the expiration date, the owner or operator may continue to operate in accordance with the terms and conditions of this permit beyond the expiration date, provided that a complete renewal application is submitted to the District no earlier than eighteen (18) months and no later than one-hundred eighty (180) days prior to the expiration date.

Applications: See Applications and Related Documents

Permit Writer: Yiqiu Lin

Administratively Complete: 1/29/2008

Date of Public Notice: 06/05/2014; 12/24/2016

Date of Proposed Permit: 06/05/2014; 12/24/2016; 2/21/2017

Paul G. Aud


Air Pollution Control Officer
 April 05, 2017

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Title V Permit Revisions/Changes

| Revision No. | Permit No. | Issue Date | Public Notice Date | Change Type | Change Scope | Description |
|--|----------------|------------|--------------------|----------------------|---------------|---|
| Initial | 145-97-TV | 6/1/2003 | 1/19/2003 | Initial | Entire Permit | Initial Issuance |
| R1 | 145-97-TV (R1) | 7/31/2014 | 6/05/2014 | Permit renewal | Entire Permit | Permit renewal and incorporate construction permit ^a |
| a. Incorporated construction permits include 215-01, 216-01, 225-01, 142-05, 143-05, 144-05, 145-05, 37-07, 38-07, 426-07, 30399-11, 34595-12, 34658-12, 35668-12, 35673-12 | | | | | | |
| R2 | 145-97-TV (R2) | 3/16/2016 | N/A | Admin. revision | Entire Permit | Insignificant changes made to incorporate updated information ^b |
| b. Changes include the following:
1) Page 19, 22, 23, 30, and 35: Update Hg control requirements.
2) Page 40, 43, 44, 48, and 53: Update U4-C30 control efficiencies per stack test report.
3) Page 59, 63-64, 76-77, 82, 83, and 84: Add normal pressure range for U9 baghouses.
4) Page 89, 93-94, 102, 103, 108, 109, and 111: Revise TAC emission standards to exclude Category 3 & 4 TACs for existing sources and use de minimis values as emission standards.
5) Page 120, 123, and 340: Add BART requirements. | | | | | | |
| R3 | 145-97-TV (R3) | 4/05/2017 | 12/24/2016 | Admin. revision | Entire Permit | Administrative changes made to incorporate updated information ^c |
| | | | | Significant revision | Entire Permit | Significant changes made to incorporate updated information ^d |
| c. Administrative changes include the following:
1) Create Plant-Wide Requirements section to include plant-wide emission standards.
2) Convert unit comments to footnotes.
3) Update MACT requirements per technical corrections document 81 FR 20172.
4) Add footnote for new control devices startup date per submitted notifications.
5) Add normal pressure drop range for U1-4 PJFF established by testing.
6) Delete unit IA-EG since source does not have equipment covered by this emission unit.
7) Add unit IA-OT for insignificant activities that subject to specific emission standards.
8) Add de-dusting system to Unit 20, NPR.
9) Add fuel additive for NOx and Hg to Unit 21, NPR.
10) Add gypsum dewatering systems to IA Table, NPR.
11) Clarify averaging period for PM emission limits per regulation 7.08.
12) Update bypass language for PM and SO ₂ control devices.
13) Add normal pH range for U1-U4 FGD.
14) Add normal pressure drop range for U9 Flyash Transfer Bins baghouses.
d. Significant changes include the following:
1) Incorporate CSAPR applicable requirements.
2) Add 30 days average SO ₂ standards per NAAQS and modeling.
3) Incorporate Jan. 21, 2016 STAR EA Demo revised for sulfuric acid emissions. Add sulfuric acid emission limits for each EGU. | | | | | | |

Applications and Related Documents

| Documents No. | Date | Description |
|---------------|------------|---|
| 65329/65330 | 11/30/2007 | Title V Permit Renewal Application ¹ |
| 8534 | 6/3/2009 | Notification of Addition of Limestone Crusher and Ball Mill ¹ |
| 52426 | 12/14/2012 | Notification of Relocation of Central Service Shop ¹ |
| 54494 | 3/5/2013 | Revised Permit Application for U4 FGD Upgrade ¹ |
| 54933 | 3/25/2013 | Construction/Operating Application for Gypsum Pelletizing Plant ¹ |
| 55161 | 4/3/2013 | District Response Gypsum Pelletizing Plant Operating Permit ¹ |
| 57168 | 7/10/2013 | Construction/Operating Application for Limestone Silo ¹ |
| 58304 | 8/9/2013 | Request of Extension of MATS Compliance Date ¹ |
| 58437 | 8/14/2013 | Modification Application for Fly Ash Silos ¹ |
| 58896 | 8/30/2013 | Submittal of Established Parameter range for Dust Collector ¹ |
| 60778 | 11/15/2013 | Construction/Operating Application for Emergency Fire Pumps ¹ |
| 62614 | 2/21/2014 | Updated 100B Forms for Equipment Incorporated in TV Permit ¹ |
| 65445 | 4/29/2014 | Submittal of Requested Information for Coal Mills ¹ |
| 64614 | 4/30/2014 | Construction/Operating Application for Upgraded Coal Crushers ¹ |
| 65396 | 6/4/2014 | Submittal of Revised CAM Plan ¹ |
| 68244 | 12/2/2014 | Request to Use Mercury Monitoring System for Compliance ² |
| 69942 | 7/21/2014 | Request to Keep MATS SO ₂ Limit/Remove Surrogate HCl Limit ³ |
| 69947 | 3/6/2015 | Submittal of Established Normal Pressure Range for U9 ² |
| 66136 | 7/21/2014 | Application for Modification of U4 Cooling Tower Capacity ³ |
| 66138 | 7/21/2014 | Construction/Operating Application for De-dust System ³ |
| 73924 | 10/15/2015 | Request of SO ₂ Standard Established Per SO ₂ NAAQS ³ |
| 74663 | 12/17/2015 | Request of Utilizing Alternative Mercury Control ² |
| 74920 | 1/21/2016 | Revised STAR EA Demo ³ |
| 75287 | 2/16/2016 | Submittal of Certificate from Kentucky Secretary of State ³ |
| 78480 | 7/22/2016 | Submittal of Established Parameter range for PJFF ³ |
| 79057 | 8/24/2016 | District Response to I.A. Request for TV Revision ³ |
| 79300 | 9/6/2016 | Submitted Additional I.A. Information ³ |
| 79405 | 9/13/2016 | Correspondence of SO ₂ Standard Established Per SO ₂ NAAQS ³ |
| 80105 | 10/20/2016 | Submittal of Parameter Range for pH Unit 1-4 |
| 80107 | 10/20/2016 | Application for SO ₂ Standard Established Per SO ₂ NAAQS ³ |

¹ For permit 145-97-TV (R1) renewal issued 7/31/2014.

² For permit 145-97-TV (R2) administrative revision issued 3/16/2016.

³ For permit 145-97-TV (R3) administrative revision and significant revision issued 4/05/2017

| Documents No. | Date | Description |
|---|-------------|---|
| 80335 | 11/03/2016 | Revised Appropriate Parameter Range for Unit 9 Flyash Transfer Bins baghouses ³ |
| 81450, 81452,
81457 | 1/25/2017 | Sierra Club's comments on Title V permit O-0127-16-V |
| 81474, 81475,
81476, 81478,
81479 | 1/26/2017 | Sierra Club's comments on permit O-0127-16-V sent to LG&E |
| 81477 | 1/26/2017 | Notification to EPA that comments were received from Sierra Club's comments on permit O-0127-16-V |
| 81721 | 2/20/2017 | District's response to public comments on permit O-0127-16-V |
| 83159 | 3/29/2017 | Initial comments received from EPA Region IV |
| 83178 | 3/29/2017 | Additional comments received from EPA Region IV |

Abbreviations and Acronyms

| | |
|-------------------|---|
| AP-42 | - AP-42, <i>Compilation of Air Pollutant Emission Factors</i> , published by US EPA |
| APCD | - Louisville Metro Air Pollution Control District |
| BAC | - Benchmark Ambient Concentration |
| BACT | - Best Available Control Technology |
| Btu | - British thermal unit |
| CEMS | - Continuous Emission Monitoring System |
| CFR | - Code of Federal Regulations |
| CO | - Carbon monoxide |
| District | - Louisville Metro Air Pollution Control District |
| EA | - Environmental Acceptability |
| gal | - U.S. fluid gallons |
| GHG | - Greenhouse Gas |
| HAP | - Hazardous Air Pollutant |
| Hg | - Mercury |
| hr | - Hour |
| in. | - Inches |
| lbs | - Pounds |
| l | - Liter |
| LMAPCD | - Louisville Metro Air Pollution Control District |
| mmHg | - Millimeters of mercury column height |
| MM | - Million |
| NAICS | - North American Industry Classification System |
| NO _x | - Nitrogen oxides |
| PM | - Particulate Matter |
| PM ₁₀ | - Particulate Matter less than 10 microns |
| PM _{2.5} | - Particulate Matter less than 2.5 microns |
| ppm | - parts per million |
| PSD | - Prevention of Significant Deterioration |
| psia | - Pounds per square inch absolute |
| QA | - Quality Assurance |
| RACT | - Reasonably Available Control Technology |
| SIC | - Standard Industrial Classification |
| SIP | - State Implementation Plan |
| SO ₂ | - Sulfur dioxide |
| STAR | - Strategic Toxic Air Reduction |
| TAC | - Toxic Air Contaminant |
| UTM | - Universal Transverse Mercator |
| VOC | - Volatile Organic Compound |
| w.c. | - Water column |
| year | - Any period of twelve consecutive months, unless "calendar year" is specified |
| yr | - Year, or any 12 consecutive-month period, as determined by context |

Preamble

Title V of the Clean Air Act Amendments of 1990 (the Act) required EPA to create an operating permit program for implementation by state or local air permitting authorities. The purposes of this program are: (1) to require an affected company to assume full responsibility for demonstrating compliance with applicable regulations; (2) to capture all of the regulatory information pertaining to an affected company in a single document; and (3) to make permits more consistent with each other.

A company is subject to the Title V program if it meets any of several criteria related to the nature or amount of its emissions. The Title V operating permit specifies what the affected company is, how it may operate, what its applicable regulations are, how it will demonstrate compliance, and what is required if compliance is not achieved. In Jefferson County, Kentucky, the Louisville Metro Air Pollution Control District (LMAPCD or APCD) is responsible for issuing Title V permits to affected companies and enforcing local regulations and delegated federal and state regulations. EPA may enforce federal regulations but not "District Only Enforceable Regulations."

Title V offers the public an opportunity to review and comment on a company's draft permit. It is intended to help the public understand the company's compliance responsibility under the Clean Air Act. Additionally, the Title V process provides a mechanism to incorporate new applicable requirements. Such requirements are available to the public for review and comment before they are adopted.

Title V Permit General Conditions define requirements that are generally applicable to all Title V companies under the jurisdiction of LMAPCD. This avoids repeating these requirements in every section of the company's Title V permit. Company-specific conditions augment the General Conditions as necessary; these appear in the sections of the permit addressing individual emission units or emission points.

The General Conditions include references to regulatory requirements that may not currently apply to the company, but which provide guidance for potential changes at the company or in the regulations during the life of the permit. Such requirements may become applicable if the company makes certain modifications or a new applicable requirement is adopted.

When the applicability of a section or subpart of a regulation is unclear, a clarifying citation will be made in the company's Title V permit at the emission unit/point level. Comments may also be added at the emission unit/point level to give further clarification or explanation.

The owner or operator's Title V permit may include a current table of "insignificant activities."

Insignificant activities are defined in District Regulation 2.16 section 1.23, as of the date the permit was proposed for review by U.S. EPA, Region 4.

Insignificant activities identified in District Regulation 1.02, section 1.38, and Appendix A may be subject to size or production rate disclosure requirements pursuant to Regulation 2.16 section 3.5.4.1.4.

Insignificant activities identified in District Regulation 1.02, section 1.38, and Appendix A shall comply with generally applicable requirements as required by Regulation 2.16 section 4.1.9.4.

General Conditions

1. **Compliance** - The owner or operator shall comply with all applicable requirements and with all terms and conditions of this permit. Any noncompliance shall constitute a violation of the Act, State, and District regulations and shall cause the source to be subject to enforcement actions including, but not limited to, the termination, revocation and reissuance, or revision of this permit, or denial of a permit application to renew this permit. Notwithstanding any other provision in the Jefferson County portion of the Kentucky SIP approved by EPA, any credible evidence may be used for the purpose of establishing whether the owner or operator is in compliance with, has violated, or is in violation of any such plan. [Regulation 2.16, sections 4.1.3, 4.1.13.1, and 4.1.13.7]
2. **Compliance Certification** - The owner or operator shall certify, annually, or more frequently if required in applicable regulations, compliance with the terms and conditions contained in this permit, including emission limitations, standards, or work practices. This certification shall meet the requirements of Regulation 2.16, sections 3.5.11 and 4.3.5. The owner or operator shall submit the annual compliance certification (Form 9400-O) directly to the EPA and to the District, as set forth in Regulation 2.16, section 4.3.5.4, at the following addresses:

*US EPA - Region IV
Air Enforcement Branch
Atlanta Federal Center
61 Forsyth Street
Atlanta, GA 30303-8960*

*Air Pollution Control District
701 W. Ormsby Avenue, Suite 303
Louisville, Kentucky 40203-3137*

This certification must be postmarked by 15 April of the year following the year for which the certification is being submitted, or other such due date as required by another applicable regulation.

3. **Compliance Schedule** - The owner or operator shall submit a schedule of compliance for each emission unit that is not in compliance with all applicable requirements. A compliance schedule must meet the requirements of Regulation 2.16, section 3.5.9.5. A schedule of compliance shall be supplemental to, and shall not condone noncompliance with, the applicable requirements on which it is based. For each schedule of compliance, the owner or operator shall submit certified progress reports at least semi-annually, or at a more frequent period if specified in an applicable requirement or by the District in accordance with Regulation 2.16 section 4.3.4. The progress reports shall contain:
 - a. Dates for achieving the activities, milestones, or compliance required in the schedule of compliance, and dates when activities, milestones, or compliance were achieved.
 - b. An explanation of why dates in the schedule of compliance were not or will not be met, and preventive or corrective measures adopted.
4. **Duty to Supplement or Correct Application** - If the owner or operator fails to submit relevant facts or has submitted incorrect information in the permit application, they shall,

upon discovery of the occurrence, promptly submit the supplementary facts or corrected information in accordance with Regulation 2.16, section 3.4.

5. **Emergency Provision**

- a. An emergency shall constitute an affirmative defense to an enforcement action brought for noncompliance with technology-based emission limitations if the conditions in Regulation 2.16 are met. The affirmative defense of emergency shall be demonstrated through properly signed, contemporaneous operating logs, or other relevant evidence that:
 - i. An emergency occurred and that the owner or operator can identify the cause of the emergency;
 - ii. The permitted facility was at the time being properly operated;
 - iii. During the period of the emergency the owner or operator expeditiously took all reasonable steps, consistent with safe operating practices, to minimize levels of emissions that exceeded the emission standards or other requirements in this permit; and
 - iv. The owner or operator submitted notice meeting the requirements of Regulation 1.07 of the time when emissions limitations were exceeded because of the emergency. This notice must fulfill the requirement of this condition, and must contain a description of the emergency, any steps taken to mitigate emissions, and any corrective actions taken.
- b. In an enforcement proceeding, the owner or operator seeking to establish the occurrence of an emergency has the burden of proof.
- c. This condition is in addition to any emergency or upset provision contained in an applicable requirement. [Regulation 2.16, sections 4.7.1 through 4.7.4]

6. **Emission Fees Payment Requirements** - The owner or operator shall pay annual emission fees in accordance with Regulation 2.08, section 12.3. Failure to pay the emissions fees when due shall constitute a violation of District Regulations. Such failure is subject to penalties and an increase in the fee of an additional 5% per month up to a maximum of 25% of the original amount due. In addition, failure to pay emissions fees within 60 days of the due date shall automatically suspend this permit to operate until the fee is paid or a schedule for payment acceptable to the District has been established. [Regulation 2.08, section 12.2.4]

7. **Emission Offset Requirements** - The owner or operator shall comply with the requirements of Regulation 2.04.

8. **Enforceability Requirements** - Except for the conditions that are specifically designated as District-Only Enforceable Conditions, all terms and conditions of this permit, including any provisions designed to limit a source's potential to emit, are enforceable by EPA and citizens as specified under the Act. [Regulation 2.16, sections 4.2.1 and 4.2.2]

9. **Enforcement Action Defense**

- a. It shall not be a defense for the owner or operator in an enforcement action that it would have been necessary for the owner or operator to halt or reduce the

permitted activity in order to maintain compliance with the conditions of this permit.

- b. The owner or operator's failure to halt or reduce activity may be a mitigating factor in assessing penalties for noncompliance if the health, safety or environmental impacts of halting or reducing operations would be more serious than the impacts of continued operation. [Regulation 2.16, sections 4.1.13.2 and 4.1.13.3]
10. **Hazardous Air Pollutants and Sources Categories** - The owner or operator shall comply with the applicable requirements of Regulations 5.02 and 5.14.
 11. **Information Requests** - The owner or operator shall furnish to the District, within a reasonable time, information requested in writing by the District, to determine whether cause exists for revising, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The owner or operator shall also furnish, upon request, copies of records required to be kept by this permit. [Regulation 2.16, section 4.1.13.6]

If information is submitted to the District under a claim of confidentiality, the source shall submit a copy of the confidential information directly to EPA at the address shown in General Condition 35.b. [Regulation 2.07, section 10.2]
 12. **Insignificant Activities** - The owner or operator shall:
 - a. Notify the District in a timely manner of any proposed change to an insignificant activity that would require a permit revision. [Regulation 2.16, section 5]
 - b. Submit a current list of insignificant activities by April 15 of each year with the annual compliance certification, including an identification of the additions and removals of insignificant activities that occurred during the preceding year. [Regulation 2.16, section 4.3.5.3.6]
 13. **Inspection and Entry** - Upon presentation of credentials and other documents as required by law, the owner or operator shall allow the District or an authorized representative to perform the following during reasonable hours: [Regulation 2.16, section 4.3.2]
 - a. Enter the premises to inspect any emissions-related activity or records required in this permit.
 - b. Have access to and copy records required by this permit.
 - c. Inspect facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required by this permit.
 - d. Sample or monitor substances or parameters to assure compliance with this permit or any applicable requirements.
 14. **Monitoring and Related Record Keeping and Reporting Requirement** - The owner or operator shall comply with the requirements of Regulation 2.16, section 4.1.9. Unless specified elsewhere in this permit, the owner or operator shall complete required monthly record keeping within 30 days following the end of each calendar month. The owner or operator shall submit all required monitoring reports at least once every six months,

unless more frequent reporting is required by an applicable requirement. The reporting period shall be 1 January through 30 June and 1 July through 31 December of each calendar year. All reports shall be sent to the District at the address shown in paragraph 2 of these General Conditions and must be postmarked by the 60th day following the end of each reporting period, unless specified elsewhere in this permit. If surrogate operating parameters are monitored and recorded in lieu of emission monitoring, then an exceedance of multiple parameters may be deemed a single violation by the District for enforcement purposes. All reports shall include the company name, plant ID number, and the beginning and ending date of the reporting period. The compliance reports shall clearly identify any deviation from a permit requirement or a declaration that there were no such deviations. All semi-annual compliance reports shall include the statement "Based on information and belief formed after reasonable inquiry, I certify that the statements and information in this document are true, accurate, and complete" and the signature and title of a responsible official of the company.

The semi-annual compliance reports are due on or before the following dates of each calendar year:

| <u>Reporting Period</u> | <u>Report Due Date</u> |
|-------------------------|-------------------------------|
| January 1 - June 30 | August 29 |
| July 1 - December 31 | March 1 of the following year |

If a change in the responsible official (RO) occurs during the term of this permit, or if an RO is added, the owner or operator shall provide written notification (Form AP-100A) to the District within 30 calendar days of such change or addition.

15. **Off-permit Documents** - Any applicable requirements, including emission limitations, control technology requirements, or work practice standards, contained in an off-permit document cannot be changed without undergoing the permit revision procedures in Regulation 2.16, section 5. [Regulation 2.16, section 4.1.5]
16. **Operational Flexibility** - The owner or operator may make changes without permit revision in accordance with Regulation 2.16, section 5.8.
17. **Permit Amendments (Administrative)** - This permit can be administratively amended by the District in accordance with Regulation 2.16, section 5.4.
18. **Permit Application Submittal** - The owner or operator shall submit a timely and complete application for permit renewal or significant revision. If the owner or operator submits a timely and complete application then the owner or operator's failure to have a permit is not a violation until the District takes formal action on this permit application. This protection shall cease to apply if, subsequent to completeness determination, the owner or operator fails to submit, by the deadline specified in writing by the District, additional information required to process the application as required by Regulation 2.16, sections 3 and 5.2.
19. **Permit Duration** - This permit is issued for a fixed term of 5 years, in accordance with Regulation 2.16, section 4.1.8.3.
20. **Permit Renewal, Expiration and Application** - Permit renewal, expiration and application procedural requirements shall be in accordance with Regulation 2.16,

- sections 4.1.8.2 and 5.3. This permit may only be renewed in accordance with section 5.3.
21. **Permit Revisions** - No permit revision shall be required under any approved economic incentives, marketable permits, emissions trading and other similar programs or processes for changes that are provided for in the permit. [Regulation 2.16, section 4.1.16]
 22. **Permit Revision Procedures (Minor)** - Except as provided in 40 CFR Part 72, the Acid Rain Program, this permit may be revised in accordance with Regulation 2.16, section 5.5.
 23. **Permit Revision Procedures (Significant)** - A source seeking to make a significant permit revision shall meet all the Title V requirements for permit applications, issuance and Permit renewal, in accordance with Regulation 2.16, section 5.7, and all other applicable District Regulations.
 24. **Permit Termination and Revocation by the District** - The District may terminate this permit only upon written request of the owner or operator. The District may revoke a permit for cause, in accordance with Regulation 2.16, section 5.11.1 through 5.11.6. For purposes of section 5.11.1, substantial or unresolved noncompliance includes, but is not limited to:
 - a. Knowingly operating process or air pollution control equipment in a manner not allowed by an applicable requirement or that results in excess emissions of a regulated air pollutant that would endanger the public or the environment;
 - b. Failure or neglect to furnish information, analyses, plans, or specifications required by the District;
 - c. Knowingly making any false statement in any permit application;
 - d. Noncompliance with Regulation 1.07, section 4.2; or
 - e. Noncompliance with KRS Chapter 77.
 25. **Permit Shield** - The permit shield shall apply in accordance with Regulation 2.16, section 4.6.1.
 26. **Prevention of Significant Deterioration of Air Quality** - The owner or operator shall comply with the requirements of Regulation 2.05.
 27. **Property Rights** - This permit shall not convey property rights of any sort or grant exclusive privileges in accordance with Regulation 2.16, section 4.1.13.5.
 28. **Public Participation** - Except for modifications qualifying for administrative permit amendments or minor permit revision procedures, all permit proceedings shall meet the requirements of Regulations 2.07, section 1; and 2.16, sections 5.1.1.2 and 5.5.4.
 29. **Reopening For Cause** - This permit shall be reopened and revised by the District in accordance with Regulation 2.16 section 5.9.
 30. **Reopening for Cause by EPA** - This permit may be revised, revoked and reissued or terminated for cause by EPA in accordance with Regulation 2.16 section 5.10.
 31. **Risk Management Plan (112(r))** - For each process subject to section 112(r) of the Act, the owner or operator shall comply with 40 CFR Part 68 and Regulation 5.15.

- 32. **Severability Clause** - The conditions of this permit are severable. Therefore, if any condition of this permit, or the application of any condition of this permit to any specific circumstance, is determined to be invalid, the application of the condition in question to other circumstances, as well as the remainder of this permit's conditions, shall not be affected. [Regulation 2.16, section 4.1.12]
- 33. **Stack Height Considerations** - The owner or operator shall comply with the requirements of Regulation 2.10.
- 34. **Startups, Shutdowns, and Upset Conditions Requirements** - The owner or operator shall comply with the requirements of Regulation 1.07.
- 35. **Submittal of Reports, Data, Notifications, and Applications**
 - a. Applications, reports, test data, monitoring data, compliance certifications, and any other document required by this permit as set forth in Regulation 2.16 sections 3.1, 3.3, 3.4, 3.5, 4.1.13.6, 5.8.5 and 5.12 shall be submitted to:

***Air Pollution Control District
701 West Ormsby Avenue, Suite 303
Louisville, Kentucky 40203-3137***
 - b. Documents that are specifically required to be submitted to EPA, as set forth in Regulation 2.16 sections 3.3 and 5.8.5 shall be mailed to EPA at:

***US EPA - Region IV
APTMD - 12th floor
Atlanta Federal Center
61 Forsyth Street
Atlanta, GA 30303-3104***
- 36. **Other Applicable Regulations** - The owner or operator shall comply with all applicable requirements of the following:

| Regulation | Title |
|-------------------|--|
| 1.01 | General Application of Regulations and Standards |
| 1.02 | Definitions |
| 1.03 | Abbreviations and Acronyms |
| 1.04 | Performance Tests |
| 1.05 | Compliance With Emissions Standards And Maintenance Requirements |
| 1.06 | Source Self-Monitoring, Emission Inventory Development and Reporting |
| 1.07 | Excess Emissions During Startups, Shutdowns, and Upset Conditions |
| 1.08 | Administrative Procedures |
| 1.09 | Prohibition of Air Pollution |
| 1.10 | Circumvention |
| 1.11 | Control of Open Burning |
| 1.14 | Control of Fugitive Particulate Emissions |
| 2.01 | General Application (Permit Requirements) |
| 2.02 | Air Pollution Regulation Requirements and Exemptions |

| Regulation | Title |
|------------|--|
| 2.03 | Authorization to Construct or Operate; Demolition/Renovation Notices and Permit Requirements |
| 2.07 | Public Notification for Title V, PSD, and Other Offset Permits; SIP Revisions; and Use of Emission Reduction Credits |
| 2.09 | Causes for Permit Modification, Revocation, or Suspension |
| 2.10 | Stack Height Considerations |
| 2.11 | Air Quality Model Usage |
| 2.16 | Title V Operating Permits |
| 4.01 | General Provisions for Emergency Episodes |
| 4.02 | Episode Criteria |
| 4.03 | General Abatement Requirements |
| 4.07 | Episode Reporting Requirements |
| 5.02 | Adoption and Incorporation by Reference of National Emission Standards for Hazardous Air Pollutants |
| 6.01 | General Provisions (Existing Affected Facilities) |
| 6.02 | Emission Monitoring for Existing Sources |
| 7.01 | General Provisions (New Affected Facilities) |
| 7.02 | Adoption and Incorporation by Reference of Federal New Source Performance Standards |

District Only Enforceable Regulations:

| Regulation | Title |
|------------|---|
| 1.12 | Control of Nuisances |
| 1.13 | Control of Objectionable Odors |
| 2.08 | Emission Fee, Permit Fees and Permit Renewal Procedures |
| 5.00 | Definitions |
| 5.01 | General Provisions |
| 5.20 | Methodology for Determining Benchmark Ambient Concentration of a Toxic Air Contaminant |
| 5.21 | Environmental Acceptability for Toxic Air Contaminants |
| 5.22 | Procedures for Determining the Maximum Ambient Concentration of a Toxic Air Contaminant |
| 5.23 | Categories of Toxic Air Contaminants |

37. **Stratospheric Ozone Protection Requirements** - Any facility having refrigeration equipment, including air conditioning equipment, which uses a Class I or II substance (listed in 40 CFR 82, Subpart A, Appendices A and B), and any facility which maintains, services, or repairs motor vehicles using a Class I or II substance as refrigerant must comply with all requirements of 40 CFR 82, Subparts A, B, and F. Those requirements include the following restrictions:

- a. Any facility having any refrigeration equipment that normally contains fifty (50) pounds of refrigerant or more must keep servicing records documenting the date and type of all service and the quantity of any refrigerant added, according to 40 CFR 82.166;
- b. No person repairing or servicing a motor vehicle may perform any service on a motor vehicle air conditioner (MVAC) involving the refrigerant for such air conditioner unless the person has been properly trained and certified as provided in 40 CFR 82.34 and 40 CFR 82.40, and properly uses equipment approved according to 40 CFR 82.36 and 40 CFR 82.38, and complies with 40 CFR 82.42;
- c. No person may sell or distribute, or offer for sale or distribution, any substance listed as a Class I or II substance in 40 CFR 82, Subpart A, Appendices A and B, except in compliance with 40 CFR 82.34(b), 40 CFR 82.42, and/or 40 CFR 82.166;
- d. No person maintaining, servicing, repairing, or disposing of appliances may knowingly vent or otherwise release into the atmosphere any Class I or II substance used as a refrigerant in such equipment and no other person may open appliances (except MVACs as defined in 40 CFR 82.152) for service, maintenance, or repair unless the person has been properly trained and certified according to 40 CFR 82.161 and unless the person uses equipment certified for that type of appliance according to 40 CFR 82.158 and unless the person observes the practices set forth in 40 CFR 82.156 and 40 CFR 82.166;
- e. No person may dispose of appliances (except small appliances, as defined in 40 CFR 82.152) without using equipment certified for that type of appliance according to 40 CFR 82.158 and without observing the practices set forth in 40 CFR 82.156 and 40 CFR 82.166;
- f. No person may recover refrigerant from small appliances, MVACs and MVAC-like appliances (as defined in 40 CFR 82.152), except in compliance with the requirements of 40 CFR 82 Subpart F;
- g. If the permittee manufactures, transforms, imports, or exports, a Class I or II substance (listed in 40 CFR 82, Subpart A, Appendices A and B), the permittee is subject to all requirements as specified in 40 CFR 82 Subpart A, Production and Consumption Controls. [Regulation 2.16, section 4.1.5]

Plant-Wide Requirements

Facility Description:

Louisville Gas & Electric- Mill Creek Generating Station generates electric energy for local and remote distribution. Coal is the primary fuel used to fire commercial boilers for generation of electricity via steam turbines and generators.

Plant-wide Applicable Regulations:

| FEDERALLY ENFORCEABLE REGULATIONS | | |
|--|---|----------------------------|
| Regulation | Title | Applicable Sections |
| 2.16 | Title V Operating Permits | 1 through 6 |
| 40 CFR 52
Subpart A | Approval and Promulgation of Implementation Plans –
General Provisions | 52.01 through 52.39 |
| 40 CFR 68,
Subpart G | Risk Management Plan | 68.150 through 68.195 |
| 40 CFR 97,
Subpart AAAAA | TR NO _x Annual Trading Program | 97.401 through 97.435 |
| 40 CFR 97,
Subpart BBBBB | TR NO _x Ozone Season Trading Program | 97.501 through 97.535 |
| 40 CFR 97,
Subpart CCCCC | TR SO ₂ Group 1 Trading Program | 97.601 through 97.635 |

| DISTRICT ONLY ENFORCEABLE REGULATIONS | | |
|--|--|----------------------------|
| Regulation | Title | Applicable Sections |
| 5.00 | Definitions | 1, 2 |
| 5.01 | General Provisions | 1 through 2 |
| 5.20 | Methodology for Determining Benchmark Ambient
Concentration of a Toxic Air Contaminant | 1 through 6 |
| 5.21 | Environmental Acceptability for Toxic Air Contaminants | 1 through 5 |
| 5.22 | Procedures for Determining the Maximum Ambient
Concentration of a Toxic Air Contaminant | 1 through 5 |
| 5.23 | Categories of Toxic Air Contaminants | 1 through 6 |

Plant-wide Specific Conditions

S1. Standards (Regulation 2.16 Section 4.1.1)

a. SO₂

The owner or operator shall not allow SO₂ emissions from any of the boilers U1, U2, U3, or U4, to exceed 0.20 lb/MMBtu of heat input based on a rolling 30-day average.⁴ (40 CFR 52)

b. TAC

- i. The owner or operator shall not allow emissions of any TAC to exceed environmentally acceptable (EA) levels, whether specifically established by modeling or determined by the District to be *de minimis*. (Regulations 5.00 and 5.21) (See Comment 1)
- ii. The owner or operator shall submit with the application for construction for any new emission unit the STAR EA Demonstration for all Category 1 through Category 4 TACs emitted from that emission unit. (Regulation 5.21, section 4.22.1)
- iii. The owner or operator shall submit a plant-wide emissions-based EA Demonstration to the District showing compliance with the EA goals for each TAC from each process when a change occurs that increases emissions above *de minimis* or previously modeled values. (Regulation 5.21, section 4.22.3)
- iv. If the TAC does not have an established BAC or *de minimis* value, the owner or operator shall calculate and report these values. The form, located in Attachment I - Determination of Benchmark Ambient Concentration (BAC), may be used for determining BAC and *de minimis* values. (Regulation 5.20, sections 3 and 4)

c. District Regulation 5.15 Regulated Substance (40 CFR 68, Subpart G)

If any toxic substances listed in Tables 1 through 4 to 40 CFR 68.130 are present at the stationary source in an amount greater than the threshold quantity specified in Regulation 5.15, the owner or operator shall comply with the requirements

⁴ KDAQ and APCD performed AERMOD modeling for attainment of 1-hour SO₂ NAAQS at LG&E Mill Creek Station. Based on the modeled critical SO₂ emission rate and an established 30-day vs. 1-hour SO₂ emission ratio, the suggested 30-day average critical emission rate for SO₂ is 0.20 lbs/MMBtu. On October 20, 2016, LG&E submitted an application form AP-100A and requested the 0.20 lbs/MMBtu SO₂ emission standard to be incorporated into its Title V permit.

specified in Regulation 5.15, including the requirement to submit a Risk Management Plan in a method and format as specified by the District and EPA.

d. **Cross-State Air Pollution Rule (CSAPR)**

The owner or operator shall comply with CSAPR applicable requirements in 40 CFR 97, Subpart AAAAA, Subpart BBBB, and Subpart CCCCC (See Attachment G).

S2. **Monitoring and Record Keeping** (Regulation 2.16 Section 4.1.9.1 and 4.1.9.2)

a. **SO₂**

- i. See each emission unit (U1, U2, U3, and U4) for the specific monitoring and record keeping requirements.
- ii. The owner or operator shall, on a daily basis, monitor and keep records of fuel type, feed rate (or firing rate) of each boiler (U1, U2, U3, and U4).

b. **TAC**

- i. The owner or operator shall maintain records sufficient to demonstrate environmental acceptability, including, but not limited to MSDS, analysis of emissions, and/or modeling results.
- ii. If a new TAC is introduced or the content of a TAC in a raw material increases above de minimis, the owner or operator shall verify and document the environmental acceptability of the revised emissions, at the time of the change.

c. **District Regulation 5.15 Regulated Substance (40 CFR 68, Subpart G)**

If any toxic substances listed in Tables 1 through 4 to 40 CFR 68.130 are present at the stationary source in an amount greater than the threshold quantity specified in Regulation 5.15, the owner or operator shall monitor the processes and keep records required by Regulation 5.15.

d. **Cross-State Air Pollution Rule (CSAPR)**

The owner or operator shall comply with CSAPR applicable requirements in 40 CFR 97, Subpart AAAAA, Subpart BBBB, and Subpart CCCCC (See Attachment G).

S3. Reporting (Regulation 2.16 Section 4.1.1)

The owner or operator shall submit quarterly compliance reports that include the information in this section. (See Comment 2)

a. SO₂

- i. See each emission unit (U1, U2, U3, and U4) for the specific reporting requirements.
- ii. Excess emissions for affected facilities (U1, U2, U3, and U4) are defined as: (40 CFR 52)
 - 1) For affected facilities complying with the 0.20 lb/MMBtu emission standard, any 30 operating day period during which the average emissions (arithmetic average of all one-hour periods during the 30 operating days) of SO₂ as measured by a CEMS exceed the standard.

b. TAC

- i. The owner or operator shall report any conditions that were inconsistent with those conditions analyzed in the most recent Environmental Acceptability Demonstration or a negative declaration stating that operations were within the conditions analyzed. This includes, but is not limited to, control device upset conditions.
- ii. For any conditions outside the analysis, the owner or operator shall re-analyze to determine whether these conditions comply with the STAR program. Changes to the air dispersion modeling program or meteorological data used in the most recent Environmental Acceptability Demonstration do not trigger the requirement to re-analyze. (Regulation 5.21 sections 4.22 – 4.24)
- iii. The owner or operator shall submit the re-evaluated EA demonstration to the District within 6 months after a change of a raw material.

c. District Regulation 5.15 Regulated Substance (40 CFR 68, Subpart G)

If any toxic substances listed in Tables 1 through 4 to 40 CFR 68.130 are present at the stationary source in an amount greater than the threshold quantity specified in Regulation 5.15, the owner or operator shall comply with the reporting requirements specified in Regulation 5.15, including the requirement to submit a Risk Management Plan in a method and format as specified by the District and EPA.

d. **Cross-State Air Pollution Rule (CSAPR)**

The owner or operator shall comply with CSAPR applicable requirements in 40 CFR 97, Subpart AAAAA, Subpart BBBBB, and Subpart CCCCC (See Attachment G).

Comments for Plant-wide Requirements

1. LG&E Mill Creek submitted their TAC Environmental Acceptability Demonstration to the District on December 28, 2006, March 25, 2008, April 9, 2010, April 2, 2012, May 13, 2014, and January 21, 2016. Compliance with the STAR EA Goals was demonstrated in the source's EA Demonstrations. SCREEN3 air dispersion modeling was performed for each emission unit that has non-de minimis TAC emissions. The following table demonstrates that the carcinogen risk and non-carcinogen risk values, calculated using the District approved PTE for each unit and the SCREEN model results from the source's EA Demonstration, comply with the STAR EA goals required in Regulation 5.21 controlled.

| Plant-wide Sum | All existing & new | | All new P/PE | |
|---------------------------------|---------------------------------|-------|--------------|-------|
| | Industrial Total R _C | 4.16 | < 75 | 0.61 |
| Non-Ind. Total R _C | 4.16 | < 7.5 | 0.61 | < 3.8 |
| Industrial Max. R _{NC} | 0.16 | < 3.0 | | |
| Non-Ind. Max. R _{NC} | 0.16 | < 1.0 | | |

| TAC | R _{NC} Total | | U1 | | U2 | | U3 | | U4 | | U8 | | U9 | | U22 | |
|---|-----------------------|-----------------|----------------|-----------------|----------------|-----------------|----------------|-----------------|----------------|-----------------|----------------|-----------------|----------------|-----------------|----------------|-----------------|
| | Ind./Non-Ind. | Ind./Non-Ind. | Ind./Non-Ind. | Ind./Non-Ind. | Ind./Non-Ind. | Ind./Non-Ind. | Ind./Non-Ind. | Ind./Non-Ind. | Ind./Non-Ind. | Ind./Non-Ind. | Ind./Non-Ind. | Ind./Non-Ind. | Ind./Non-Ind. | Ind./Non-Ind. | Ind./Non-Ind. | |
| | R _{NC} | R _{NC} | R _C | R _{NC} | R _C | R _{NC} | R _C | R _{NC} | R _C | R _{NC} | R _C | R _{NC} | R _C | R _{NC} | R _C | R _{NC} |
| Total R_C/ Max. R_{NC} | 0.16 | 0.16 | 0.65 | | 0.65 | | 1.09 | | 1.07 | | 0.58 | | 0.10 | | 0.03 | |
| Arsenic and arsenic compounds | 0.03 | 0.03 | 0.29 | 0.00 | 0.29 | 0.00 | 0.48 | 0.01 | 0.48 | 0.01 | 0.56 | 0.01 | 0.10 | 0.002 | 0.02 | 0.00 |
| Cadmium and cadmium compounds | 0.00 | 0.00 | 0.02 | 0.00 | 0.02 | 0.00 | 0.03 | 0.00 | 0.03 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Chromium hexavalent & Cr(VI) | 0.02 | 0.02 | 0.28 | 0.00 | 0.28 | 0.00 | 0.48 | 0.00 | 0.47 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Chromium trivalent & Cr(III) | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Formaldehyde | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Nickel and nickel compounds | 0.03 | 0.03 | 0.02 | 0.01 | 0.02 | 0.01 | 0.03 | 0.01 | 0.03 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Cobalt and cobalt compounds | 0.01 | 0.01 | 0.03 | 0.00 | 0.03 | 0.00 | 0.06 | 0.00 | 0.06 | 0.00 | 0.03 | 0.001 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hydrofluoric acid [Hydrogen fluoride] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Lead compounds ¹ | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Manganese and Manganese compounds | 0.01 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Naphthalene | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Sulfuric acid | 0.16 | 0.16 | 0.00 | 0.03 | 0.00 | 0.03 | 0.00 | 0.05 | 0.00 | 0.05 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

2. The compliance reports are due on or before the following dates of each calendar year:

| <u>Reporting Period</u> | <u>Report Due Date</u> |
|---|---------------------------|
| January 1 st through March 31 th | May 30 th |
| April 1 st through June 30 th | August 29 th |
| July 1 st through September 30 th | November 29 th |
| October 1 st through December 31 st | March 1 st |

Emission Unit U1: Electric Utility Steam Generating Unit (EGU) – Unit 1**U1 Applicable Regulations:**

| FEDERALLY ENFORCEABLE REGULATIONS | | |
|--|---|--|
| Regulation | Title | Applicable Sections |
| 6.02 | Emission Monitoring for Existing Sources | 1, 2, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18 |
| 6.07 | Standards of Performance for Existing Indirect Heat Exchangers | 1, 2, 3, 4 |
| 6.09 | Standards of Performance for Existing Process Operations | 1, 2, 3, 5 |
| 6.42 | Reasonably Available Control Technology Requirements for Major Volatile Organic Compound- and Nitrogen Oxides-Emitting Facilities | 1, 2, 3, 4, 5 |
| 6.47 | Federal Acid Rain Program for Existing Sources Incorporated by Reference | 1, 2, 3, 4, 5 |
| 40 CFR 64 | Compliance Assurance Monitoring for Major Stationary Sources | 64.1 through 64.10 |
| 40 CFR 72 | Permits Regulation | Subparts A, B, C, D, E, F, G, H, I |
| 40 CFR 73 | Sulfur Dioxide Allowance System | Subparts A, B, C, D, E, F, G |
| 40 CFR 75 | Continuous Emission Monitoring | Subparts A, B, C, D, E, F, G |
| 40 CFR 76 | Acid Rain Nitrogen Oxides Emission Reduction Program | 76.1, 76.2, 76.3, 76.4, 76.5, 76.7, 76.8, 76.9, 76.11, 76.13, 76.14, 76.15, Appendix A, Appendix B |
| 40 CFR 77 | Excess Emissions | 77.1, 77.2, 77.3, 77.4, 77.5, 77.6 |
| 40 CFR 78 | Appeals Procedures for Acid Rain Program | 78.1, 78.2, 78.3, 78.4, 78.5, 78.6, 78.8, 78.9, 78.10, 78.11, 78.13, 78.14, 78.15, 78.16, 78.17, 78.18, 78.19, 78.20 |
| 40 CFR 63, Subpart UUUUU | National Emission Standards for Hazardous Air Pollutants: Coal- and Oil-Fired Electric Utility Steam Generating Units (EGU MACT) | 63.9980 through 63.10042 |

| DISTRICT ONLY ENFORCEABLE REGULATIONS | | |
|--|---|----------------------------|
| Regulation | Title | Applicable Sections |
| 5.00 | Definitions | 1, 2 |
| 5.01 | General Provisions | 1 through 2 |
| 5.02 | Adoption of National Emission Standards for Hazardous Air Pollutants | 1, 3.95 and 4 |
| 5.14 | Hazardous Air Pollutants and Source Categories | 1, 2 |
| 5.20 | Methodology for Determining Benchmark Ambient Concentration of a Toxic Air Contaminant | 1 through 6 |
| 5.21 | Environmental Acceptability for Toxic Air Contaminants | 1 through 5 |
| 5.22 | Procedures for Determining the Maximum Ambient Concentration of a Toxic Air Contaminant | 1 through 5 |
| 5.23 | Categories of Toxic Air Contaminants | 1 through 6 |

U1 Equipment:

| Emission Point | Description | Applicable Regulation | Control ID | Stack ID |
|---|--|---|---|------------------|
| E1 | One (1) tangentially fired boiler, rated capacity 3,085 MMBtu/hr, make Combustion Engineering, using pulverized coal as a primary fuel and natural gas as secondary fuel. | 5.00, 5.01, 5.02, 5.14, 5.20, 5.21, 5.22, 5.23, 6.02, 6.07, 6.42, 6.47, 40 CFR 64, 40 CFR 72-73, 40 CFR 75-78, 40 CFR 63, UUUUU | C1, C2 ^a | S1 ^a |
| | | | C1, C26 ^b , C27 ^b | S33 ^b |
| E2 | Four (4) coal silos, make Fisher-Klosterman, controlled by a centrifugal dust collector and equipped with four (4) coal mills, make Combustion Engineering Raymond Bowl Mills. | 5.00, 5.01, 5.14, 5.20, 5.21, 5.22, 5.23, 6.09 | C3 | S5 |
| <p>Note a: The existing FGD (C2, S1) will shut down prior to April 16, 2016, which is the compliance date when this unit has to comply with 40 CFR 63, Subpart UUUUU.</p> <p>Note b: The new FGD and HAP PM control (C26, C27, and S33) will replace C2 and S1. These new control devices need to be in full operation no later than April 16, 2016, which is the compliance date when this unit has to comply with 40 CFR 63, Subpart UUUUU.⁵</p> | | | | |

⁵ On June 3, 2015, LG&E submitted a notification for initial startup of PJFF (C26) and FGD (C27) for U1. These control devices went into service on May 27, 2015.

U1 Control Devices:

Prior to compliance with 40 CFR 63, Subpart UUUUU, Unit 1 has following control devices:

| ID | Description | Performance Indicator | Stack ID |
|----|---|--|----------|
| C1 | One (1) custom-built electrostatic precipitator (ESP) for PM control, make Western Precipitator Division | PM emission data from PM CEMS (if PM CEMS is not used to demonstrate compliance) | S1 |
| C2 | One (1) Flue Gas Desulfurization (FGD) unit for SO ₂ control using limestone scrubbing liquor, make Combustion Engineering | N/A ⁶ | |
| C3 | One (1) centrifugal dust collector, make Fisher-Klosterman | N/A ⁷ | S5 |

After compliance with 40 CFR 63, Subpart UUUUU, Unit 1 has following control devices:

| ID | Description | Performance Indicator | Stack ID |
|-----|--|--|----------|
| C1 | One (1) custom-built electrostatic precipitator (ESP) for PM control, make Western Precipitator Division | N/A ⁶ | S33 |
| C26 | One (1) HAP particulate matter control system, consists of: one (1) powdered activated carbon (PAC) injection system; one (1) dry sorbent injection system; liquid additive system(s); and one (1) pulse-jet fabric filter (PJFF) baghouse used for collecting PM from the boiler and PAC and dry sorbent injection system. PJFF baghouse make Clyde Bergemann Power Group, model Structural Pulse Jet | PM Control:
PM emission data from PM CEMS (if PM CEMS is not used to demonstrate compliance)

Hg control:
(1) Minimum PAC injection rate; ⁸
(2) pH of reactant in FGD, 4.8-6.4;
(3) Hg emission data from Sorbent Traps | |
| C27 | One (1) combined Flue Gas desulfurization (FGD) unit for SO ₂ control using limestone scrubbing liquor, make Babcock Power Environmental | N/A ⁶ | |

⁶ This unit is equipped with CEMS for NO_x, SO₂, and PM. According to the District's letter dated November 1, 2005, parametric monitoring of the ESP, FGD, and PJFF for this unit is removed as such monitoring would no longer be required for demonstration of compliance. On July 22, 2016, LG&E reported the normal pressure drop range for U1 PJFF, 2 – 6 inches of water, established during 90 consecutive operating days.

⁷ For the coal silos (E2), the owner or operator has shown, by worst-case calculations without allowance for a control device, that the hourly uncontrolled PM emission standard cannot be exceeded; therefore, no additional monitoring, recordkeeping, or reporting is required to demonstrate compliance with the applicable PM standards specified in Regulation 6.09 is required for this emission point.

⁸ In a letter dated October 4, 2016, LG&E demonstrated that in certain circumstance EGUs at this plant can meet the MACT mercury standard at zero PAC injection rate. Therefore the source is allowed to use flexible mercury control measures, including PAC injection or liquid additive system, to achieve compliance with MACT mercury standard.

| ID | Description | Performance Indicator | Stack ID |
|-----------|--|------------------------------|-----------------|
| C3 | One (1) centrifugal dust collector, make Fisher-Klosterman | N/A ⁷ | S5 |

U1 Specific Conditions

S1. Standards⁹ (Regulation 2.16, section 4.1.1)

a. NO_x

- i. The owner or operator shall not allow the average NO_x emissions to exceed the alternate contemporaneous emission limitation of 0.40 lb/MMBtu of heat input on an annual average basis, as specified in Acid Rain Permit No.176-97-AR (R4) which is attached and considered part of the Title V Operating Permit. (Regulation 6.47, section 3.5 referencing 40 CFR Part 76)
- ii. The owner or operator shall not exceed the NO_x RACT emissions standard of 0.47 lb/MMBtu of heat input based on a rolling 30-day average. (See NO_x RACT, Attachment D) (Regulation 6.42, section 4.3)
- iii. The owner or operator shall install, maintain, calibrate and operate a continuous emission monitoring system (CEMS) for the measurement or calculation of nitrogen oxides in the flue gas. (Regulation 6.02, section 6.1.3) (NO_x RACT Plan) (Regulation 6.47, section 3.4 referencing 40 CFR 75.10(a)(2))

b. SO₂

- i. The owner or operator shall not exceed 1.2 lb/MMBtu per hour heat input based on a three hour rolling average. (Regulation 6.07, section 4.1)
- ii. The owner or operator shall comply with the SO₂ emission allowances specified in Acid Rain Permit No.176-97-AR (R4). (See Acid Rain Permit Attachment) (Regulation 6.47, section 3.2 referencing 40 CFR Part 73)
- iii. The owner or operator shall operate and maintain the FGD, as recommended by the manufacturer, at all times the respective boiler is in normal operation, including periods of startup, shutdown, and malfunction, in a manner consistent with good air pollution control practice to meet the standards.¹⁰ (Regulation 2.16, section 4.1.1)

⁹ The emission standards, monitoring, record keeping, and reporting requirements only apply to the boiler E1 (not the coal silos E2) if not indicated.

¹⁰ The SO₂ emissions cannot meet the standards uncontrolled. The owner or operator is required to operate the control devices to meet the applicable limits for SO₂.

- iv. The owner or operator shall install, maintain, calibrate and operate a continuous emission monitoring system (CEMS) for the measurement of sulfur dioxide in the flue gas. (Regulation 6.02, section 6.1.2) (Regulation 6.47, section 3.4 referencing 40 CFR 75.10(a)(1))

c. PM

- i. The owner or operator shall not exceed an allowable particulate emission rate of 0.11 lbs/MMBtu heat input based on a three hour rolling average. (Regulation 6.07, section 3.1)
- ii. The owner or operator shall operate and maintain the PM control devices, as recommended by the manufacturer, at all times the respective boiler is in operation, including periods of startup, shutdown, and malfunction, in a manner consistent with good air pollution control practice to meet the standards. Following commissioning of the PJFF baghouses, the owner or operator may elect to operate, turn down, or turn off the ESP to ensure the efficient operation of the PJFF baghouse.¹¹ (Regulation 2.16, section 4.1.1)
- iii. The company shall follow one of the two options below to demonstrate compliance with PM standards:

| Compliance Options | PM | Opacity | Control Device Performance indication |
|--------------------|-------------------|--------------------------------|---------------------------------------|
| Option 1 | Certified PM CEMS | VE/Method 9, or Certified COMS | N/A |
| Option 2 | Annual testing | Certified COMS | PM CEMS |

- iv. For coal silos (E2), the owner or operator shall not exceed an allowable particulate emission rate of 82.95 lbs/hr from four coal silos combined based on actual operating hours in a calendar day.¹² (Regulation 6.09, section 3.2)

d. Opacity

- i. The owner or operator shall not cause the emission into the open air of particulate matter from any indirect heat exchanger which is greater than 20% opacity, except emissions into the open air of particulate matter from any indirect heat exchanger during building a new fire, cleaning the fire

¹¹ The PM emissions cannot meet the standards uncontrolled. The owner or operator is required to operate the control devices to meet the applicable limits for PM.

¹² For the coal silos (E2), the owner or operator has shown, by worst-case calculations without allowance for a control device, that the hourly uncontrolled PM emission standard cannot be exceeded; therefore, no additional monitoring, recordkeeping, or reporting is required to demonstrate compliance with the applicable PM standards specified in Regulation 6.09 is required for this emission point.

box, or blowing soot for a period or periods aggregating not more than ten minutes in any 60 minutes which are less than 40% opacity. (Regulation 6.07, section 3.2 and 3.3)

- ii. The company shall follow one of the two options in the table under Specific Condition S1.c.iii to demonstrate compliance with opacity standards.
- iii. For the coal silos (E2), the owner or operator shall not allow visible emissions to equal or exceed 20% opacity. (Regulation 6.09, section 3.1)

e. **TAC**

- i. The owner or operator shall not allow TAC emissions from boiler E1 to exceed the TAC emission standards determined based upon the EA Demonstration provided to the District.¹³ (Regulation 5.21, section 4.2 and section 4.3) (See Comment 1)

| TAC Name | CAS # | TAC Limits Determination | |
|----------------------------|------------|--------------------------------------|-----------------|
| | | (lbs/yr) | Basis of Limits |
| Naphthalene | 91-20-3 | 16.6 | Controlled PTE |
| Formaldehyde | 50-00-0 | 70.3 | Controlled PTE |
| Hydrogen fluoride | 7664-39-3 | 13,385 | Controlled PTE |
| Arsenic compounds | 7440-38-2 | 266 | Controlled PTE |
| Cadmium compounds | 7440-43-9 | 42.1 | Controlled PTE |
| Chromium VI | 7440-47-3 | 94.5 | Controlled PTE |
| Chromium III | 16065-83-1 | 216 | Controlled PTE |
| Cobalt compounds | 7440-48-4 | 56.2 | Controlled PTE |
| Lead compounds | 7439-92-1 | 332 | Controlled PTE |
| Manganese compounds | 7439-96-5 | 424 | Controlled PTE |
| Nickel compounds | 7440-02-0 | 307 | Controlled PTE |
| Sulfuric acid | 7664-93-9 | 118,679 | Controlled PTE |
| Benzene | 71-43-2 | De minimis values
(See Comment 1) | De Minimis |
| Bromoform | 75-25-2 | | De Minimis |
| Chloroform | 67-66-3 | | De Minimis |
| Methylene chloride | 75-09-2 | | De Minimis |
| Tetrachloroethylene (Perc) | 127-18-4 | | De Minimis |
| Toluene | 108-88-3 | | De Minimis |
| Xylene | 1330-20-7 | | De Minimis |
| Hydrochloric acid | 7647-01-0 | | De Minimis |

- ii. See Plant-wide Requirements S1.b.

¹³ This table for TAC emission standards has been revised to exclude Category 3 and 4 TACs for existing sources and use “de minimis values”, instead of actual numbers for current de minimis levels, as emission standards.

f. **HAP** (40 CFR 63, Subpart UUUUU)

The owner or operator shall comply with 40 CFR 63, Subpart UUUUU (See Attachment A) no later than April 16, 2016.¹⁴

g. **BART** (40 CFR 52, Subpart S)

The owner or operator shall continue to utilize PJFF baghouse and/or existing ESP to control PM emissions for this unit.¹⁵ (40 CFR 52.920(e) refer to Kentucky Regional Haze SIP)

S2. **Monitoring and Record Keeping** (Regulation 2.16, sections 4.1.9.1 and 4.1.9.2)

The owner or operator shall maintain the following records for a minimum of 5 years and make the records readily available to the District upon request.

a. **NO_x**

- i. The owner or operator shall demonstrate compliance with NO_x RACT Plan limits by continuous emissions monitors (CEMs) as specified in the NO_x RACT Plan. (See NO_x RACT Attachment) (Regulation 6.42, section 4.3)
- ii. The owner or operator shall keep a record identifying all deviations from the requirements of the NO_x RACT Plan.
- iii. The owner or operator shall comply with the NO_x compliance plan requirements specified in the attached Acid Rain Permit, No.176-97-AR (R4). These record keeping requirements shall be determined in accordance with the Title IV Phase II Acid Rain Permit and are specified in 40 CFR Part 75 Subpart F. (See Appendix A to NO_x RACT Plan) (Regulation 6.47, section 3.4 and 3.5 referencing 40 CFR Parts 75 and 76)
- iv. The owner or operator shall record on an hourly basis all NO_x emission data specified in 40 CFR Part 75, section 75.57(d). For each NO_x emission rate (in lb/mmBtu) measured by a NO_x-diluent monitoring system, or, if applicable, for each NO_x concentration (in ppm) measured by a NO_x concentration monitoring system used to calculate NO_x mass emissions under 40 CFR 75.71(a)(2), record the following data as measured and

¹⁴ According to 40 CFR 63.9984(b), compliance date for an existing EGU is April 16, 2015. LG&E requested a year extension and the District has approved the request for the extension per (40 CFR 63.6(i)(4)(i)). Therefore the compliance date for the EGUs under this construction is April 16, 2016.

¹⁵ On March 30, 2012, EPA finalized a limited approval and a limited disapproval of the Kentucky state implementation plan submitted on June 25, 2008 and May 28, 2010. According to 40 CFR 52.920(e), the owner or operator shall meet BART requirements summarized in Table 7.5.3-2 of the Commonwealth's May 28, 2010 submittal.

reported from the certified primary monitor, certified back-up monitor, or other approved method of emissions determination:

- 1) Component-system identification code, as provided in 40 CFR 75.53 (including identification code for the moisture monitoring system, if applicable); (40 CFR 75.57(d)(1))
- 2) Date and hour; (40 CFR 75.57(d)(2))
- 3) Hourly average NO_x concentration (ppm, rounded to the nearest tenth) and hourly average NO_x concentration (ppm, rounded to the nearest tenth) adjusted for bias if bias adjustment factor required, as provided in 40 CFR 75.24(d); (40 CFR 75.57(d)(3))
- 4) Hourly average diluent gas concentration (for NO_x -diluent monitoring systems, only, in units of percent O₂ or percent CO₂, rounded to the nearest tenth); (40 CFR 75.57(d)(4))
- 5) If applicable, the hourly average moisture content of the stack gas (percent H₂O, rounded to the nearest tenth). If the continuous moisture monitoring system consists of wet- and dry-basis oxygen analyzers, also record both the hourly wet- and dry-basis oxygen readings (in percent O₂, rounded to the nearest tenth); (40 CFR 75.57(d)(5))
- 6) Hourly average NO_x emission rate (for NO_x -diluent monitoring systems only, in units of lb/mmBtu, rounded to the nearest thousandth); (40 CFR 75.57(d)(6))
- 7) Hourly average NO_x emission rate (for NO_x -diluent monitoring systems only, in units of lb/mmBtu, rounded to the nearest thousandth), adjusted for bias if bias adjustment factor is required, as provided in 40 CFR 75.24(d). The requirement to report hourly NO_x emission rates to the nearest thousandth shall not affect NO_x compliance determinations under part 76 of this chapter; compliance with each applicable emission limit under part 76 shall be determined to the nearest hundredth pound per million Btu; (40 CFR 75.57(d)(7))
- 8) Percent monitoring system data availability (recorded to the nearest tenth of a percent), for the NO_x -diluent or NO_x concentration monitoring system, and, if applicable, for the moisture monitoring system, calculated pursuant to 40 CFR 75.32; (40 CFR 75.57(d)(8))

- 9) Method of determination for hourly average NO_x emission rate or NO_x concentration and (if applicable) for the hourly average moisture percentage, using Codes 1–55 in Table 4a of 40 CFR 75.57; and (40 CFR 75.57(d)(9))
 - 10) Identification codes for emissions formulas used to derive hourly average NO_x emission rate and total NO_x mass emissions, as provided in 40 CFR 75.53, and (if applicable) the F-factor used to convert NO_x concentrations into emission rates. (40 CFR 75.57(d)(10))
- v. A CEMS for measuring either oxygen (O₂) or carbon dioxide (CO₂) in the flue gases shall be installed, calibrated, maintained, and operated by the owner or operator. (Regulation 6.02, section 6.1.3) (NO_x RACT Plan)
 - vi. The owner or operator shall monitor the NO_x emissions, the NO_x allowances, as specified in the Clean Air Interstate Rule or the applicable NO_x cap and trade program(s) in effect.
 - vii. The owner or operator shall comply with the following in order to demonstrate compliance with the emission standard as required by 40 CFR 52: For performance evaluations under 40 CFR 60.13(c) and calibration checks under 40 CFR 60.13(d), the following procedures shall be used:
 - 1) Methods 6, 7, and 3B of appendix A of this part, as applicable, shall be used for the performance evaluations of SO₂ and NO_x continuous monitoring systems. Acceptable alternative methods for Methods 6, 7, and 3B of appendix A of this part are given in 40 CFR 60.46(d).
 - 2) Sulfur dioxide or nitric oxide, as applicable, shall be used for preparing calibration gas mixtures under Performance Specification 2 of appendix B to this part.
 - 3) For affected facilities burning fossil fuel(s), the span value for a continuous monitoring system measuring the opacity of emissions shall be 80, 90, or 100 percent. For a continuous monitoring system measuring sulfur oxides or NO_x the span value shall be determined using one of the following procedures:
 - (a) Except as provided under paragraph 40 CFR 60.45(c)(3)(ii), SO₂ and NO_x span values shall be determined as follows:

| Fossil fuel | In parts per million | |
|-------------|--------------------------------|--------------------------------|
| | Span value for SO ₂ | Span value for NO _x |
| Gas | Not Applicable | 500. |
| Liquid | 1,000 | 500. |
| Solid | 1,500 | 1,000. |

- (b) As an alternative to meeting the requirements of paragraph 40 CFR 60.45(c)(3)(i), the owner or operator of an affected facility may elect to use the SO₂ and NO_x span values determined according to sections 2.1.1 and 2.1.2 in appendix A to part 75 of this chapter.
- viii. The owner or operator shall comply with the following in order to demonstrate compliance with the emission standard as required by 40 CFR 52: The conversion procedures in 40 CFR 60.45(e) and (f) shall be used to convert the continuous monitoring data into units of the applicable standards.
- 1) For any CEMS installed under paragraph (a) of this section, the following conversion procedures shall be used to convert the continuous monitoring data into units of the applicable standards (ng/J, lb/MMBtu):

- (a) When a CEMS for measuring O₂ is selected, the measurement of the pollutant concentration and O₂ concentration shall each be on a consistent basis (wet or dry). Alternative procedures approved by the Administrator shall be used when measurements are on a wet basis. When measurements are on a dry basis, the following conversion procedure shall be used:

$$E = CF \left(\frac{20.9}{(20.9 - \%O_2)} \right)$$

Where E, C, F, and %O₂ are determined under paragraph (f) of this section.

- (b) When a CEMS for measuring CO₂ is selected, the measurement of the pollutant concentration and CO₂ concentration shall each be on a consistent basis (wet or dry) and the following conversion procedure shall be used:

$$E = CF_c \left(\frac{100}{\%CO_2} \right)$$

Where E, C, F_c and %CO₂ are determined under paragraph (f) of this section.

- 2) The values used in the equations under paragraphs (e)(1) and (2) of this section are derived as follows:
- (a) E = pollutant emissions, ng/J (lb/MMBtu).
 - (b) C = pollutant concentration, ng/dscm (lb/dscf), determined by multiplying the average concentration (ppm) for each one-hour period by 4.15×10^{-4} M ng/dscm per ppm (2.59×10^{-9} M lb/dscf per ppm) where M = pollutant molecular weight, g/g-mole (lb/lb-mole). M = 64.07 for SO₂ and 46.01 for NO_x.
 - (c) %O₂, %CO₂= O₂ or CO₂ volume (expressed as percent), determined with equipment specified under paragraph (a) of this section.
 - (d) F, F_c = a factor representing a ratio of the volume of dry flue gases generated to the calorific value of the fuel combusted (F), and a factor representing a ratio of the volume of CO₂ generated to the calorific value of the fuel combusted (F_c), respectively. Values of F and F_c are given as follows:
 - (i) For anthracite coal as classified according to ASTM D388 (incorporated by reference, see 40 CFR 60.17), $F = 2,723 \times 10^{-17}$ dscm/J (10,140 dscf/MMBtu) and $F_c = 0.532 \times 10^{-17}$ scm CO₂/J (1,980 scf CO₂/MMBtu).
 - (ii) For subbituminous and bituminous coal as classified according to ASTM D388 (incorporated by reference, see 40 CFR 60.17), $F = 2.637 \times 10^{-7}$ dscm/J (9,820 dscf/MMBtu) and $F_c = 0.486 \times 10^{-7}$ scm CO₂/J (1,810 scf CO₂/MMBtu).
 - (iii) For liquid fossil fuels including crude, residual, and distillate oils, $F = 2.476 \times 10^{-7}$ dscm/J (9,220 dscf/MMBtu) and $F_c = 0.384 \times 10^{-7}$ scm CO₂/J (1,430 scf CO₂/MMBtu).
 - (iv) For gaseous fossil fuels, $F = 2.347 \times 10^{-7}$ dscm/J (8,740 dscf/MMBtu). For natural gas, propane, and butane fuels, $F_c = 0.279 \times 10^{-7}$ scm CO₂/J (1,040 scf CO₂/MMBtu) for natural gas, 0.322×10^{-7} scm CO₂/J (1,200 scf CO₂/MMBtu) for propane, and 0.338×10^{-7} scm CO₂/J (1,260 scf CO₂/MMBtu) for butane.
 - (v) For bark $F = 2.589 \times 10^{-7}$ dscm/J (9,640

dscf/MMBtu) and $F_c = 0.500 \times 10^{-7}$ scm CO₂/J (1,840 scf CO₂/MMBtu). For wood residue other than bark $F = 2.492 \times 10^{-7}$ dscm/J (9,280 dscf/MMBtu) and $F_c = 0.494 \times 10^{-7}$ scm CO₂/J (1,860 scf CO₂/MMBtu).

(vi) For lignite coal as classified according to ASTM D388 (incorporated by reference, see 40 CFR 60.17), $F = 2.659 \times 10^{-7}$ dscm/J (9,900 dscf/MMBtu) and $F_c = 0.516 \times 10^{-7}$ scm CO₂/J (1,920 scf CO₂/MMBtu).

(e) The owner or operator may use the following equation to determine an F factor (dscm/J or dscf/MMBtu) on a dry basis (if it is desired to calculate F on a wet basis, consult the Administrator) or F_c factor (scm CO₂/J, or scf CO₂/MMBtu) on either basis in lieu of the F or F_c factors specified in paragraph (f)(4) of this section:

$$F = 10^6 \frac{[227.2 (\%H) + 95.5 (\%C) + 35.6 (\%S) + 8.7 (\%N) - 28.7 (\%O)]}{GCV}$$

$$F_c = \frac{2.0 \times 10^{-3} (\%C)}{GCV \text{ (SI units)}}$$

$$F = 10^6 \frac{[3.64 (\%H) + 1.53 (\%C) + 0.57 (\%S) + 0.14 (\%N) - 0.46 (\%O)]}{GCV \text{ (English units)}}$$

$$F_c = \frac{20.0 (\%C)}{GCV \text{ (SI units)}}$$

$$F_c = \frac{321 \times 10^3 (\%C)}{GCV \text{ (English units)}}$$

- (i) %H, %C, %S, %N, and %O are content by weight of hydrogen, carbon, sulfur, nitrogen, and O₂ (expressed as percent), respectively, as determined on the same basis as GCV by ultimate analysis of the fuel fired, using ASTM D3178 or D3176 (solid fuels), or computed from results using ASTM D1137, D1945, or D1946 (gaseous fuels) as applicable. (These five methods are incorporated by reference, see 40 CFR 60.17.)
- (ii) GCV is the gross calorific value (kJ/kg, Btu/lb) of the fuel combusted determined by the ASTM test methods D2015 or D5865 for solid fuels and D1826

for gaseous fuels as applicable. (These three methods are incorporated by reference, see 40 CFR 60.17.)

- (iii) For affected facilities which fire both fossil fuels and nonfossil fuels, the F or F_c value shall be subject to the Administrator's approval.
- (f) For affected facilities firing combinations of fossil fuels or fossil fuels and wood residue, the F or F_c factors determined by paragraphs (f)(4) or (f)(5) of this section shall be prorated in accordance with the applicable formula as follows:

$$F = \sum_{i=1}^n X_i F_i \quad \text{or} \quad F_c = \sum_{i=1}^n X_i (F_c)_i$$

Where:

X_i = Fraction of total heat input derived from each type of fuel (e.g. natural gas, bituminous coal, wood residue, etc.);

F_i or (F_c)_i = Applicable F or F_c factor for each fuel type determined in accordance with paragraphs (f)(4) and (f)(5) of this section; and

n = Number of fuels being burned in combination.

b. SO₂

- i. The owner or operator shall maintain hourly records of SO₂ emissions as specified in Regulation 6.02, section 6.1.2.
- ii. The owner or operator shall record on an hourly basis all SO₂ emission data specified in 40 CFR 75.57(c):
 - 1) For SO₂ concentration during unit operation, as measured and reported from each certified primary monitor, certified back-up monitor, or other approved method of emissions determination: (40 CFR 75.57(c)(1))
 - (a) Component-system identification code, as provided in 40 CFR 75.53; (40 CFR 75.57(c)(1)(i))
 - (b) Date and hour; (40 CFR 75.57(c)(1)(ii))
 - (c) Hourly average SO₂ concentration (ppm, rounded to the nearest tenth); (40 CFR 75.57(c)(1)(iii))

- (d) Hourly average SO₂ concentration (ppm, rounded to the nearest tenth), adjusted for bias if bias adjustment factor is required, as provided in 40 CFR 75.24(d); (40 CFR 75.57(c)(1)(iv))
 - (e) Percent monitor data availability (recorded to the nearest tenth of a percent), calculated pursuant to 40 CFR 75.32; and (40 CFR 75.57(c)(1)(v))
 - (f) Method of determination for hourly average SO₂ concentration using Codes 1–55 in Table 4a of 40 CFR 75.57. (40 CFR 75.57(c)(1)(vi))
- 2) For flow rate during unit operation, as measured and reported from each certified primary monitor, certified back-up monitor, or other approved method of emissions determination: (40 CFR 75.57(c)(2))
- (a) Component-system identification code, as provided in 40 CFR 75.53; (40 CFR 75.57(c)(2)(i))
 - (b) Date and hour; (40 CFR 75.57(c)(2)(ii))
 - (c) Hourly average volumetric flow rate (in scfh, rounded to the nearest thousand); (40 CFR 75.57(c)(2)(iii))
 - (d) Hourly average volumetric flow rate (in scfh, rounded to the nearest thousand), adjusted for bias if bias adjustment factor required, as provided in 40 CFR 75.24(d); (40 CFR 75.57(c)(2)(iv))
 - (e) Percent monitor data availability (recorded to the nearest tenth of a percent) for the flow monitor, calculated pursuant to 40 CFR 75.32; and (40 CFR 75.57(c)(2)(v))
 - (f) Method of determination for hourly average flow rate using Codes 1–55 in Table 4a of 40 CFR 75.57. (40 CFR 75.57(c)(2)(vi))
- 3) For SO₂ mass emission rate during unit operation, as measured and reported from the certified primary monitoring system(s), certified redundant or non-redundant back-up monitoring system(s), or other approved method(s) of emissions determination: (40 CFR 75.57(c)(4))
- (a) Date and hour; (40 CFR 75.57(c)(4)(i))

- (b) Hourly SO₂ mass emission rate (lb/hr, rounded to the nearest tenth); (40 CFR 75.57(c)(4)(ii))
 - (c) Hourly SO₂ mass emission rate (lb/hr, rounded to the nearest tenth), adjusted for bias if bias adjustment factor required, as provided in 40 CFR 75.24(d); and (40 CFR 75.57(c)(4)(iii))
 - (d) Identification code for emissions formula used to derive hourly SO₂ mass emission rate from SO₂ concentration and flow and (if applicable) moisture data in paragraphs (c)(1), (c)(2), and (c)(3) of 40 CFR 75.57, as provided in 40 CFR 75.53. (40 CFR 75.57(c)(4)(iv))
- iii. The owner or operator shall comply with the following in order to demonstrate compliance with the emission standard as required by 40 CFR 52: For performance evaluations under 40 CFR 60.13(c) and calibration checks under 40 CFR 60.13(d), the following procedures shall be used:
- 1) Methods 6, 7, and 3B of appendix A of this part, as applicable, shall be used for the performance evaluations of SO₂ and NO_x continuous monitoring systems. Acceptable alternative methods for Methods 6, 7, and 3B of appendix A of this part are given in 40 CFR 60.46(d).
 - 2) Sulfur dioxide or nitric oxide, as applicable, shall be used for preparing calibration gas mixtures under Performance Specification 2 of appendix B to this part.
 - 3) For affected facilities burning fossil fuel(s), the span value for a continuous monitoring system measuring the opacity of emissions shall be 80, 90, or 100 percent. For a continuous monitoring system measuring sulfur oxides or NO_x the span value shall be determined using one of the following procedures:
 - (a) Except as provided under paragraph 40 CFR 60.45(c)(3)(ii), SO₂ and NO_x span values shall be determined as follows:

| Fossil fuel | In parts per million | |
|-------------|--------------------------------|--------------------------------|
| | Span value for SO ₂ | Span value for NO _x |
| Gas | Not Applicable | 500. |
| Liquid | 1,000 | 500. |
| Solid | 1,500 | 1,000. |

- (b) As an alternative to meeting the requirements of paragraph 40 CFR 60.45(c)(3)(i), the owner or operator of an affected facility may elect to use the SO₂ and NO_x span values determined according to sections 2.1.1 and 2.1.2 in appendix A to part 75 of this chapter.
- iv. The owner or operator shall comply with the following in order to demonstrate compliance with the emission standard as required by 40 CFR 52: The conversion procedures in 40 CFR 60.45(e) and (f) shall be used to convert the continuous monitoring data into units of the applicable standards.
- 1) For any CEMS installed under paragraph (a) of this section, the following conversion procedures shall be used to convert the continuous monitoring data into units of the applicable standards (ng/J, lb/MMBtu):

- (a) When a CEMS for measuring O₂ is selected, the measurement of the pollutant concentration and O₂ concentration shall each be on a consistent basis (wet or dry). Alternative procedures approved by the Administrator shall be used when measurements are on a wet basis. When measurements are on a dry basis, the following conversion procedure shall be used:

$$E = CF \left(\frac{20.9}{(20.9 - \%O_2)} \right)$$

Where E, C, F, and %O₂ are determined under paragraph (f) of this section.

- (b) When a CEMS for measuring CO₂ is selected, the measurement of the pollutant concentration and CO₂ concentration shall each be on a consistent basis (wet or dry) and the following conversion procedure shall be used:

$$E = CF_c \left(\frac{100}{\%CO_2} \right)$$

Where E, C, F_c and %CO₂ are determined under paragraph (f) of this section.

- 2) The values used in the equations under paragraphs (e)(1) and (2) of this section are derived as follows:
- (a) E = pollutant emissions, ng/J (lb/MMBtu).

- (b) C = pollutant concentration, ng/dscm (lb/dscf), determined by multiplying the average concentration (ppm) for each one-hour period by 4.15×10^{-4} M ng/dscm per ppm (2.59×10^{-9} M lb/dscf per ppm) where M = pollutant molecular weight, g/g-mole (lb/lb-mole). $M = 64.07$ for SO_2 and 46.01 for NO_x .
- (c) % O_2 , % CO_2 = O_2 or CO_2 volume (expressed as percent), determined with equipment specified under paragraph (a) of this section.
- (d) F , F_c = a factor representing a ratio of the volume of dry flue gases generated to the calorific value of the fuel combusted (F), and a factor representing a ratio of the volume of CO_2 generated to the calorific value of the fuel combusted (F_c), respectively. Values of F and F_c are given as follows:
- (i) For anthracite coal as classified according to ASTM D388 (incorporated by reference, see 40 CFR 60.17), $F = 2,723 \times 10^{-17}$ dscm/J (10,140 dscf/MMBtu) and $F_c = 0.532 \times 10^{-17}$ scm CO_2 /J (1,980 scf CO_2 /MMBtu).
 - (ii) For subbituminous and bituminous coal as classified according to ASTM D388 (incorporated by reference, see 40 CFR 60.17), $F = 2.637 \times 10^{-7}$ dscm/J (9,820 dscf/MMBtu) and $F_c = 0.486 \times 10^{-7}$ scm CO_2 /J (1,810 scf CO_2 /MMBtu).
 - (iii) For liquid fossil fuels including crude, residual, and distillate oils, $F = 2.476 \times 10^{-7}$ dscm/J (9,220 dscf/MMBtu) and $F_c = 0.384 \times 10^{-7}$ scm CO_2 /J (1,430 scf CO_2 /MMBtu).
 - (iv) For gaseous fossil fuels, $F = 2.347 \times 10^{-7}$ dscm/J (8,740 dscf/MMBtu). For natural gas, propane, and butane fuels, $F_c = 0.279 \times 10^{-7}$ scm CO_2 /J (1,040 scf CO_2 /MMBtu) for natural gas, 0.322×10^{-7} scm CO_2 /J (1,200 scf CO_2 /MMBtu) for propane, and 0.338×10^{-7} scm CO_2 /J (1,260 scf CO_2 /MMBtu) for butane.
 - (v) For bark $F = 2.589 \times 10^{-7}$ dscm/J (9,640 dscf/MMBtu) and $F_c = 0.500 \times 10^{-7}$ scm CO_2 /J (1,840 scf CO_2 /MMBtu). For wood residue other than bark $F = 2.492 \times 10^{-7}$ dscm/J (9,280 dscf/MMBtu) and $F_c = 0.494 \times 10^{-7}$ scm CO_2 /J (1,860 scf CO_2 /MMBtu).
 - (vi) For lignite coal as classified according to ASTM D388 (incorporated by reference, see 40 CFR

60.17), $F = 2.659 \times 10^{-7}$ dscm/J (9,900 dscf/MMBtu) and $F_c = 0.516 \times 10^{-7}$ scm CO₂/J (1,920 scf CO₂/MMBtu).

- (e) The owner or operator may use the following equation to determine an F factor (dscm/J or dscf/MMBtu) on a dry basis (if it is desired to calculate F on a wet basis, consult the Administrator) or F_c factor (scm CO₂/J, or scf CO₂/MMBtu) on either basis in lieu of the F or F_c factors specified in paragraph (f)(4) of this section:

$$F = 10^6 \frac{[227.2 (\%H) + 95.5 (\%C) + 35.6 (\%S) + 8.7 (\%N) - 28.7 (\%O)]}{GCV}$$

$$F_c = \frac{2.0 \times 10^{-3} (\%C)}{GCV \text{ (SI units)}}$$

$$F = 10^6 \frac{[3.64 (\%H) + 1.53 (\%C) + 0.57 (\%S) + 0.14 (\%N) - 0.46 (\%O)]}{GCV \text{ (English units)}}$$

$$F_c = \frac{20.0 (\%C)}{GCV \text{ (SI units)}}$$

$$F_c = \frac{321 \times 10^3 (\%C)}{GCV \text{ (English units)}}$$

- (i) %H, %C, %S, %N, and %O are content by weight of hydrogen, carbon, sulfur, nitrogen, and O₂ (expressed as percent), respectively, as determined on the same basis as GCV by ultimate analysis of the fuel fired, using ASTM D3178 or D3176 (solid fuels), or computed from results using ASTM D1137, D1945, or D1946 (gaseous fuels) as applicable. (These five methods are incorporated by reference, see 40 CFR 60.17.)
- (ii) GVC is the gross calorific value (kJ/kg, Btu/lb) of the fuel combusted determined by the ASTM test methods D2015 or D5865 for solid fuels and D1826 for gaseous fuels as applicable. (These three methods are incorporated by reference, see 40 CFR 60.17.)
- (iii) For affected facilities which fire both fossil fuels and nonfossil fuels, the F or F_c value shall be subject to the Administrator's approval.

- (f) For affected facilities firing combinations of fossil fuels or fossil fuels and wood residue, the F or F_c factors determined by paragraphs (f)(4) or (f)(5) of this section shall be prorated in accordance with the applicable formula as follows:

$$F = \sum_{i=1}^n X_i F_i \quad \text{or} \quad F_c = \sum_{i=1}^n X_i (F_c)_i$$

Where:

X_i = Fraction of total heat input derived from each type of fuel (e.g. natural gas, bituminous coal, wood residue, etc.);

F_i or (F_c)_i = Applicable F or F_c factor for each fuel type determined in accordance with paragraphs (f)(4) and (f)(5) of this section; and

n = Number of fuels being burned in combination.

c. PM

- i. The company shall follow one of the two options below to demonstrate compliance with PM standards:
- 1) Option 1: the owner or operator shall install, maintain, calibrate, and operate a PM CEMS for each steam generating unit.^{16,17} (Regulation 2.16, section 4.1.1) (40 CFR 64)
 - (a) The use of PM CEMS as the measurement technique must be appropriate for the stack conditions.
 - (b) The PM CEMS must be installed, operated and maintained in accordance with the manufacturer's recommendations.
 - (c) The PM CEMS must be certified in accordance with Performance Specification 11, Specifications and Test Procedures for Particulate Matter Continuous Emission

¹⁶ According to LG&E's request, PM CEMS have been installed, calibrated, maintained, and operated for Unit 1. LG&E requested permission to remove COMS for Unit 3 and 4 under provisions in 40 CFR 60.13(i)(1), "Alternative monitoring requirements when installation of a continuous monitoring system or monitoring device specified by this part would not provide accurate measurements due to liquid water or other interferences caused by substances in the effluent gases." LG&E's proposal for Unit 3 and 4 was accepted in a letter from EPA dated Feb. 28, 2007. The District accordingly approved LG&E's request for removing COMS for Unit 1 and 2 providing PM CEMS are appropriately installed for these units.

¹⁷ The coal-fired boilers are subject to 40 CFR Part 64 - Compliance Assurance Monitoring (CAM) for Major Stationary Source since SO₂, PM, and NO_x emissions from each of the boilers may be greater than the major source threshold and control devices are required to achieve compliance with standards. On 5/21/2014, LG&E submitted a revised CAM Plan in which SO₂ and NO_x CEMS are used for compliance demonstration. PM CEMS is used to demonstrate compliance or provide an indication of continuous PM control.

Monitoring Systems at Stationary Sources, found in 40 CFR 60, Appendix B.

- (d) A quality assurance/quality control program must be implemented in accordance with procedures in 40 CFR 60, Appendix F, Procedure 2 (Quality Assurance Requirements for Particulate Matter Continuous Emission Monitoring Systems at Stationary Sources).
 - (e) Compliance with the particulate matter emission limit will be based upon three-hour rolling average periods during source operation.
 - (f) Quarterly excess emission reports must be submitted, and PM excess emissions shall be reported based upon three-hour rolling averages during source operation.
- 2) Option 2: the owner or operator shall conduct an annual EPA Reference Method 5 performance test following the testing requirements in Attachment B, Specific Condition b.ii.
- ii. If certified PM CEMS (Option 1) is used to demonstrate compliance with PM standards, the owner or operator shall record on an hourly basis all PM emission data, in lb/MMBtu, from PM CEMS.¹⁸ (40 CFR 64)
 - iii. If annual PM testing (Option 2) is used to demonstrate compliance with PM standards, the owner or operator shall use PM CEMS as a performance indicator of continuous normal operation of the PM control devices and do the following:¹⁸ (40 CFR 64)
 - 1) The owner or operator shall monitor and record all PM emission data from PM CEMS, which is used as the indicator of normal operation of the PM control devices.
 - 2) The owner or operator shall maintain daily records of any periods of time where the process was operating and the PM control devices were not operating or a declaration that the PM control devices operated at all times that day when the process was operating.

¹⁸ The coal-fired boilers are subject to 40 CFR Part 64 - Compliance Assurance Monitoring (CAM) for Major Stationary Source since SO₂, PM, and NO_x emissions from each of the boilers may be greater than the major source threshold and control devices are required to achieve compliance with standards. On 5/21/2014, LG&E submitted a revised CAM Plan in which SO₂ and NO_x CEMS are used for compliance demonstration. PM CEMS is used to demonstrate compliance or provide an indication of continuous PM control.

- 3) If there is any time that the PM control devices are bypassed or not in operation when the process is operating, then the owner or operator shall keep a record of the following for each bypass event:
 - (a) Date;
 - (b) Start time and stop time;
 - (c) Identification of the control devices and process equipment;
 - (d) PM emissions during the bypass in lb/hr;
 - (e) Summary of the cause or reason for each bypass event;
 - (f) Corrective action taken to minimize the extent or duration of the bypass event; and
 - (g) Measures implemented to prevent reoccurrence of the situation that resulted in the bypass event.

d. Opacity

- i. If certified COMS is used to demonstrate compliance with opacity standards, the owner or operator shall record on an hourly basis all opacity from COMS.¹⁹
- ii. If VE/Method 9 is used to demonstrate compliance with opacity standards, in order for the owner or operator to use its VE observations to satisfy the opacity monitoring requirement, the following conditions must be met:¹⁹ (EPA Letter, 2007)
 - 1) On a weekly basis, the owner or operator shall attempt to perform VE observations in accordance with procedures in EPA Method 9.
 - 2) On the weeks when it is possible to collect unit-specific VE data, at least one hour of Method 9 data shall be collected for each unit.
 - 3) Records of the Method 9 readings shall be submitted with the quarterly excess emission reports for PM emissions.
- iii. The owner or operator shall keep a record of every Method 9 test performed or the reason why it could not be performed that day.
- iv. For coal silos (E2):

¹⁹ According to LG&E's request, PM CEMS have been installed, calibrated, maintained, and operated for Unit 1. LG&E requested permission to remove COMS for Unit 3 and 4 under provisions in 40 CFR 60.13(i)(1), "Alternative monitoring requirements when installation of a continuous monitoring system or monitoring device specified by this part would not provide accurate measurements due to liquid water or other interferences caused by substances in the effluent gases." LG&E's proposal for Unit 3 and 4 was accepted in a letter from EPA dated Feb. 28, 2007. The District accordingly approved LG&E's request for removing COMS for Unit 1 and 2 providing PM CEMS are appropriately installed for these units.

- 1) The owner or operator shall conduct a weekly one-minute visible emissions survey, during normal operation, of the PM Emission Points (stacks). For Emission Points without observed visible emissions during twelve consecutive operating weeks, the owner or operator may elect to conduct a monthly one-minute visible emission survey, during normal operation.
 - 2) At Emission Points where visible emissions are observed, the owner or operator shall initiate corrective action within eight hours of the initial observation. If the visible emissions persist, the owner or operator shall perform or cause to be performed a Method 9 for stack emissions within 24 hours of the initial observation. If the opacity standard is exceeded, the owner or operator shall report the exceedance to the District, according to Regulation 1.07, and take all practicable steps to eliminate the exceedance.
 - 3) The owner or operator shall maintain records, monthly, of the results of all visible emissions surveys and tests. Records of the results of any visible emissions survey shall include the date of the survey, the name of the person conducting the survey, whether or not visible emissions were observed, and what if any corrective action was performed. If an emission point is not being operated during a given month, then no visible emission survey needs to be performed and a negative declaration shall be entered in the record.
- e. **TAC**
- i. The owner or operator shall monthly calculate and record TAC emissions for this unit in order to demonstrate compliance with the TAC emission standards.
 - ii. See Plant-wide Requirements S2.b.
- f. **HAP** (40 CFR 63, Subpart UUUUU)
- i. The owner or operator shall comply with 40 CFR 63, Subpart UUUUU (See Attachment A) no later than April 16, 2016.

- ii. The owner or operator shall establish a site-specific minimum activated carbon injection rate for PAC injection system according to Attachment B, Specific Condition a.i.²⁰ The owner or operator shall monitor and record the activated carbon injection rate during each operating day.
- iii. The owner or operator shall monitor and record all Hg emission data from the Hg sorbent traps, which is used as the indicator of normal operation of the Hg control measures.
- iv. The owner or operator shall monitor and record the pH of the reactant material in the FGD and any other parameters verified as having a direct effect on Hg emissions during each operating day, which is (are) used as the indicator(s) of normal operation of Hg control measures.²¹
- v. The owner or operator shall maintain records of which Hg control devices/measure was being used during each operating day.

g. **BART** (40 CFR 52, Subpart S)

The owner or operator shall maintain daily records of any periods of time where the process was operating and both PJFF baghouse and ESP were not operating or a declaration that the PJFF baghouse and/or ESP operated at all times that day when the process was operating.

S3. **Reporting** (Regulation 2.16, section 4.1.9.3)

The owner or operator shall submit quarterly compliance reports that include the information in this section.

a. **NO_x**

- i. The owner or operator shall identify all periods of exceeding a NO_x emission standard during a quarterly reporting period. The quarterly compliance report shall include the following:
 - 1) Emission Unit ID number and emission point ID number;
 - 2) Identification of all periods during which a deviation occurred;
 - 3) A description, including the magnitude, of the deviation;
 - 4) If known, the cause of the deviation;

²⁰ In a letter dated October 4, 2016, LG&E demonstrated that in certain circumstance EGUs at this plant can meet the MACT mercury standard at zero PAC injection rate. Therefore the source is allowed to use flexible mercury control measures, including PAC injection or liquid additive system, to achieve compliance with MACT mercury standard.

²¹ LG&E has established normal pH range per monitoring records during consecutive 180 days. On 10/20/2016, LG&E reported that the normal pH range for this unit is 4.8 – 6.4.

- 5) A description of all corrective actions taken to abate the deviation; and
 - 6) If no deviations occur during a quarterly reporting period, the report shall contain a negative declaration.
- ii. The owner or operator shall submit a written report of excess emissions and the nature and cause of the excess emissions if known. The averaging period used for data reporting should correspond to the averaging period specified in the emission test method used to determine compliance with an emission standard for the pollutant/source category in question. All quarterly reports shall be postmarked by the 30th day following the end of each calendar quarter. The required report shall include: (Regulation 6.02, section 16.1)
- 1) For gaseous measurements, the summary shall consist of hourly averages in the units of the applicable standard. The hourly averages shall not appear in the written summary, but shall be made available electronically.²² (Regulation 6.02, section 16.3)
 - 2) The data and time identifying each period during which the continuous monitoring system was inoperative, except for zero and span checks, and the nature of system repairs or adjustment shall be reported. Proof of continuous monitoring system performance whenever system repairs or adjustments have been made is required. (Regulation 6.02, section 16.4)
 - 3) When no excess emissions have occurred and the continuous monitoring systems have been inoperative, repaired, or adjusted, such information shall be included in the report. (Regulation 6.02, section 16.5)
 - 4) Owners or operators of affected facilities shall maintain a file of all information reported in the quarterly summaries, and all other data collected either by the continuous monitoring system or as necessary to convert monitoring data to the units of the applicable standard for a minimum of two years from the date of collection of such data or submission of such summaries. (Regulation 6.02, section 16.6)
- iii. The owner or operator shall comply with the reporting requirements for the Acid Rain Permit No.176-97-AR (R4), specified in 40 CFR 75, Subpart G. Notifications, Monitoring Plans, Initial Certification and Recertification Applications, Quarterly Reports, Opacity Reports, Petitions to the Administrator²³, and Retired Unit Petitions shall be

²² The hourly averages are only required to be made available in electronic summary, not in written summary.

submitted as specified in Subpart G - reporting requirements. (See Attachment E)

- iv. The owner or operator shall comply with the reporting requirements for the Title IV NO_x Budget Emission Limitation, 0.40 lb/MMBtu, as specified in 40 CFR Part 76.
- v. Excess emissions for affected facilities using a CEMS for measuring NO_x are defined as: (Regulation 2.16, section 4.1.9.3)
 - 1) Any annual average period during which the average emissions (arithmetic average of all one-hour period during the 12 month period) of NO_x as measured by a CEMS exceed the applicable standard.
 - 2) Any 30 operating day period during which the average emissions (arithmetic average of all one-hour periods during the 30 operating days) of NO_x as measured by a CEMS exceed the applicable standard.

b. SO₂

- i. The owner or operator shall identify all periods of exceeding a SO₂ emission standard during a quarterly reporting period. The report shall include the following:
 - 1) Emission Unit ID number and emission point ID number;
 - 2) Identification of all periods during which a deviation occurred;
 - 3) A description, including the magnitude, of the deviation;
 - 4) If known, the cause of the deviation;
 - 5) A description of all corrective actions taken to abate the deviation; and
 - 6) If no deviations occur during a quarterly reporting period, the report shall contain a negative declaration.
- ii. The owner or operator shall submit a written report of excess emissions and the nature and cause of the excess emissions if known. See Specific Condition S3.a.ii.
- iii. The owner or operator shall comply with the reporting requirements for the Acid Rain Permit No.176-97-AR (R4), specified in 40 CFR 75, Subpart G. Notifications, monitoring Plans, Initial Certification and Recertification Applications, Quarterly Reports, Opacity Reports, Petitions to the Administrator, and Retired Unit Petitions shall be

²³ In this permit, Administrator means the District.

submitted as specified in Subpart G - Reporting Requirements. (See Attachment E)

iv. Excess emissions for affected facilities using a CEMS for measuring SO₂ are defined as: (Regulation 2.16, section 4.1.9.3)

- 1) Any three-hour period during which the average emissions (arithmetic average of three contiguous one-hour periods) of SO₂ as measured by a CEMS exceed the applicable standard; or
- 2) Any 30 operating day period during which the average emissions (arithmetic average of all one-hour periods during the 30 operating days) of SO₂ as measured by a CEMS exceed the applicable standard.

c. **PM**

i. The owner or operator shall identify all periods of exceeding a PM emission standard during a quarterly reporting period. The report shall include the following:

- 1) Emission Unit ID number and emission point ID number;
- 2) The date and duration (including the start and stop time) during which a deviation occurred;
- 3) The magnitude of excess emissions;
- 4) Description of the deviation and summary information on the cause or reason for excess emissions;
- 5) Corrective action taken to minimize the extent and duration of each excess emissions event;
- 6) Measures implemented to prevent reoccurrence of the situation that resulted in excess PM emissions; or
- 7) If no deviations occur during a quarterly reporting period, the report shall contain a negative declaration.

ii. The owner or operator shall submit a written report of excess emissions and the nature and cause of the excess emissions if known. See Specific Condition S3.a.ii.

d. **Opacity**

i. The owner or operator shall identify all periods of exceeding an opacity standard during a quarterly reporting period. The report shall include the following:

- 1) Any deviation from the requirement to perform daily (or monthly, if required) visible emission surveys or Method 9 tests and documented reason;
 - 2) Any deviation from the requirement to record the results of each VE survey and Method 9 test performed and documented reason;
 - 3) The number, date, and time of each VE Survey where visible emissions were observed and the results of the Method 9 test performed;
 - 4) Identification of all periods of exceeding an opacity standard;
 - 5) Description of any corrective action taken for each exceedance of the opacity standard; or
 - 6) If no deviations occur during a quarterly reporting period, the report shall contain a negative declaration.
- ii. The owner or operator shall comply with the reporting requirements for the Acid Rain Permit No.176-97-AR (R4), specified in 40 CFR 75, Subpart G. Notifications, monitoring Plans, Initial Certification and Recertification Applications, Quarterly Reports, Opacity Reports, Petitions to the Administrator, and Retired Unit Petitions shall be submitted as specified in Subpart G - reporting requirements. (See Attachment E) (Regulation 6.47, section 3.4 and 3.5 referencing 40 CFR Parts 75 and 76)
- iii. For coal silos (E2):
- The owner or operator shall identify all periods of exceeding an opacity standard during a quarterly reporting period. The report shall include the following:
- 1) Emission Unit ID number, Stack ID number, and/or Emission point ID number;
 - 2) The beginning and ending date of the reporting period;
 - 3) The date, time and results of each exceedance of the opacity standard;
 - 4) Description of any corrective action taken for each exceedance.
- e. **TAC**
- i. The owner or operator shall identify all periods of exceeding a TAC emission standard during a quarterly reporting period. The report shall include the following:
- 1) Emission Unit ID number and emission point ID number;
 - 2) Identification of all periods during which a deviation occurred;
 - 3) A description, including the magnitude, of the deviation;
 - 4) If known, the cause of the deviation;

- 5) A description of all corrective actions taken to abate the deviation; and
 - 6) If no deviations occur during a quarterly reporting period, the report shall contain a negative declaration.
- ii. See Plant-wide Requirements S2.b.
- f. **HAP** (40 CFR 63, Subpart UUUUU)
- i. The owner or operator shall comply with 40 CFR 63, Subpart UUUUU (See Attachment A) no later than April 16, 2016.
 - ii. Report normal pH range of reactant material in the FGD and normal range of any other parameters verified as having a direct effect on Hg emission within 30 days of establishing the normal range.
 - iii. The owner or operator shall identify all periods of the activated carbon injection rate are less than the minimum injection rate, or the pH of the reactant material in the FGD are out of normal range, or anytime other verified parameters are outside of their normal range, and any corrective action taken for each exceedance.
- g. **BART** (40 CFR 52, Subpart S)
- The owner or operator shall report any periods of time where the process was operating and both PJFF baghouse and ESP were not operating.
- S4. **Testing** (Regulation 2.16, section 4.1.9.1)
- a. **Control efficiency determination**
- The owner or operator shall conduct performance test for the new EGU control device C26 and C27, according to the testing requirements in Attachment B, C and G.^{24,25} (Regulation 2.16, section 4.1.9.1)

U1 Comments

1. Boiler (E1) has TAC emission standards since its EA Demonstration was based on controlled PTE. If the controlled PTE for the TAC is less than de minimis level, use De Minimis as limit. If the controlled PTE for the TAC is greater than de minimis level,

²⁴ Per an EPA rule change ("Restructuring of the Stationary Source Audit Program." Federal Register 75:176 (September 13, 2010) pp 55636-55657), if an audit sample is required by the test method, sources became responsible for obtaining the audit samples directly from accredited audit sample suppliers, not the regulatory agencies.

²⁵ This unit was modified under construction permit 34595-12-C. According to permit 34595-12-C, the source is required to conduct stack tests to obtain actual emission factors and control efficiencies.

modeling results were used to calculate risk value to compare to the EA Goals. In this case, controlled PTE is used as limit. TAC emissions for the coal silos (E2) are de minimis according to Regulation 5.21, section 2.1. The TAC emission limits determined by de minimis values shall be updated each time when the District revises the BAC/de minimis values for these TACs. The current de minimis values per TAC list revised on 10/14/2013 are as the following:

| TAC Name | CAS # | De minimis values | |
|----------------------------|-----------|-------------------|-----------|
| | | (lb/hr) | (lb/yr) |
| Benzene | 71-43-2 | 0.243 | 216 |
| Bromoform | 75-25-2 | 0.4914 | 437 |
| Chloroform | 67-66-3 | 0.02322 | 20.6 |
| Methylene chloride | 75-09-2 | 54 | 48,000 |
| Tetrachloroethylene (Perc) | 127-18-4 | 2.079 | 1,848 |
| Toluene | 108-88-3 | 2700 | 2,400,000 |
| Xylene | 1330-20-7 | 54 | 48,000 |
| Hydrochloric acid | 7647-01-0 | 10.8 | 9,600 |

Emission Unit U2: Electric Utility Steam Generating Unit (EGU) – Unit 2**U2 Applicable Regulations:**

| FEDERALLY ENFORCEABLE REGULATIONS | | |
|--|---|--|
| Regulation | Title | Applicable Sections |
| 6.02 | Emission Monitoring for Existing Sources | 1, 2, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18 |
| 6.07 | Standards of Performance for Existing Indirect Heat Exchangers | 1, 2, 3, 4 |
| 6.09 | Standards of Performance for Existing Process Operations | 1, 2, 3, 5 |
| 6.42 | Reasonably Available Control Technology Requirements for Major Volatile Organic Compound- and Nitrogen Oxides-Emitting Facilities | 1, 2, 3, 4, 5 |
| 6.47 | Federal Acid Rain Program for Existing Sources Incorporated by Reference | 1, 2, 3, 4, 5 |
| 40 CFR 64 | Compliance Assurance Monitoring for Major Stationary Sources | 64.1 through 64.10 |
| 40 CFR 72 | Permits Regulation | Subparts A, B, C, D, E, F, G, H, I |
| 40 CFR 73 | Sulfur Dioxide Allowance System | Subparts A, B, C, D, E, F, G |
| 40 CFR 75 | Continuous Emission Monitoring | Subparts A, B, C, D, E, F, G |
| 40 CFR 76 | Acid Rain Nitrogen Oxides Emission Reduction Program | 76.1, 76.2, 76.3, 76.4, 76.5, 76.7, 76.8, 76.9, 76.11, 76.13, 76.14, 76.15, Appendix A, Appendix B |
| 40 CFR 77 | Excess Emissions | 77.1, 77.2, 77.3, 77.4, 77.5, 77.6 |
| 40 CFR 78 | Appeals Procedures for Acid Rain Program | 78.1, 78.2, 78.3, 78.4, 78.5, 78.6, 78.8, 78.9, 78.10, 78.11, 78.13, 78.14, 78.15, 78.16, 78.17, 78.18, 78.19, 78.20 |
| 40 CFR 63, Subpart UUUUU | National Emission Standards for Hazardous Air Pollutants: Coal- and Oil-Fired Electric Utility Steam Generating Units (EGU MACT) | 63.9980 through 63.10042 |

| DISTRICT ONLY ENFORCEABLE REGULATIONS | | |
|--|---|----------------------------|
| Regulation | Title | Applicable Sections |
| 5.00 | Definitions | 1, 2 |
| 5.01 | General Provisions | 1 through 2 |
| 5.02 | Adoption of National Emission Standards for Hazardous Air Pollutants | 1, 3.95 and 4 |
| 5.14 | Hazardous Air Pollutants and Source Categories | 1, 2 |
| 5.20 | Methodology for Determining Benchmark Ambient Concentration of a Toxic Air Contaminant | 1 through 6 |
| 5.21 | Environmental Acceptability for Toxic Air Contaminants | 1 through 5 |
| 5.22 | Procedures for Determining the Maximum Ambient Concentration of a Toxic Air Contaminant | 1 through 5 |
| 5.23 | Categories of Toxic Air Contaminants | 1 through 6 |

U2 Equipment:

| Emission Point | Description | Applicable Regulation | Control ID | Stack ID |
|--|--|---|---|------------------|
| E3 | One (1) tangentially fired boiler, rated capacity 3,085 MMBtu/hr, make Combustion Engineering, using pulverized coal as a primary fuel and natural gas as secondary fuel. | 5.00, 5.01, 5.02, 5.14, 5.20, 5.21, 5.22, 5.23, 6.02, 6.07, 6.42, 6.47, 40 CFR 64, 40 CFR 72-73, 40 CFR 75-78, 40 CFR 63, UUUUU | C4, C5 ^a | S2 ^a |
| | | | C4, C27 ^b , C28 ^b | S33 ^b |
| E4 | Four (4) coal silos, make American Air Filter, controlled by a centrifugal dust collector and equipped with four (4) coal mills, make Combustion Engineering Raymond Bowl Mills. | 5.00, 5.01, 5.20, 5.21, 5.22, 5.23, 6.09 | C6 | S6 |
| <p>Note a: The existing FGD (C5, S2) will shut down before April 16, 2016, the compliance date when this unit has to comply with 40 CFR 63, Subpart UUUUU.</p> <p>Note b: The new FGD and HAP PM control (C27, C28, and S33) will replace C5 and S2. These new control devices need to be in full operation no later than April 16, 2016, the compliance date when this unit has to comply with 40 CFR 63, Subpart UUUUU.²⁶</p> | | | | |

²⁶ On June 3, 2015, LG&E submitted a notification for initial startup of PJFF (C28) and FGD (C27) for U2. These control devices went into service on May 27, 2015.

U2 Control Devices:

Before compliance with 40 CFR 63, Subpart UUUUU, Unit 2 uses the following control devices:

| ID | Description | Performance Indicator | Stack ID |
|----|---|--|----------|
| C4 | One (1) custom-built electrostatic precipitator (ESP) for PM control, make Western Precipitator Division | PM emission data from PM CEMS (if PM CEMS is not used to demonstrate compliance) | S2 |
| C5 | One (1) Flue Gas Desulfurization (FGD) unit for SO ₂ control using limestone scrubbing liquor, make Combustion Engineering | N/A ²⁷ | |
| C6 | One (1) centrifugal dust collector, make American Air Filter | N/A ²⁸ | S6 |

After compliance with 40 CFR 63, Subpart UUUUU, Unit 2 uses the following control devices:

| ID | Description | Performance Indicator | Stack ID |
|-----|---|---|----------|
| C4 | One (1) custom-built electrostatic precipitator (ESP) for PM control, make Western Precipitator Division | N/A ²⁷ | S33 |
| C27 | One (1) combined Flue Gas Desulfurization (FGD) unit for SO ₂ control using limestone scrubbing liquor, make Babcock Power Environmental | N/A ²⁷ | |
| C28 | One (1) HAP particulate matter control system, consists of: one (1) powdered activated carbon (PAC) injection system; one (1) dry sorbent injection system; liquid additive system(s); and one (1) pulse-jet fabric filter (PJFF) baghouse used for collecting PM from the boiler and PAC and dry sorbent injection system. PJFF make Clyde Bergemann Power Group, model Structural Pulse Jet | PM Control:
PM emission data from PM CEMS (if PM CEMS is not used to demonstrate compliance)

Hg control:
(1) Minimum PAC injection rate; ²⁹
(2) pH of reactant in FGD, 4.8-6.4;
(3) Hg emission data from Sorbent Traps | |

²⁷ This unit is equipped with CEMS for NO_x, SO₂, and PM. According to the District's letter dated November 1, 2005, parametric monitoring of the ESP, FGD, and PJFF for this unit is removed as such monitoring would no longer be required for demonstration of compliance. On July 22, 2016, LG&E reported the normal pressure drop range for U2 PJFF, 2 – 6 inches of water, established during 90 consecutive operating days.

²⁸ For the coal silos (E4), the owner or operator has shown, by worst-case calculations without allowance for a control device, that the hourly uncontrolled PM emission standard cannot be exceeded; therefore, no additional monitoring, recordkeeping, or reporting is required to demonstrate compliance with the applicable PM standards specified in Regulation 6.09 is required for this emission point.

²⁹ In a letter dated October 4, 2016, LG&E demonstrated that in certain circumstance EGUs at this plant can meet the MACT mercury standard at zero PAC injection rate. Therefore the source is allowed to use flexible mercury control measures, including PAC injection or liquid additive system, to achieve compliance with MACT mercury standard.

| ID | Description | Performance Indicator | Stack ID |
|-----------|--|------------------------------|-----------------|
| C6 | One (1) centrifugal dust collector, make American Air Filter | N/A ²⁸ | S6 |

U2 Specific Conditions

S1. Standards³⁰ (Regulation 2.16, section 4.1.1)

a. NO_x

- i. The owner or operator shall not allow the average NO_x emissions to exceed the alternate contemporaneous emission limitation of 0.40 lb/MMBtu of heat input on an annual average basis, as specified in Acid Rain Permit No.176-97-AR (R4) which is attached and considered part of the Title V Operating Permit. (Regulation 6.47, section 3.5 referencing 40 CFR Part 76)
- ii. The owner or operator shall not exceed the NO_x RACT emissions standard of 0.47 lb/MMBtu of heat input based on a rolling 30-day average. (See NO_x RACT, Attachment D) (Regulation 6.42, section 4.3)
- iii. The owner or operator shall install, maintain, calibrate and operate a continuous emission monitoring system (CEMS) for the measurement or calculation of nitrogen oxides in the flue gas. (Regulation 6.02, section 6.1.3) (NO_x RACT Plan) (Regulation 6.47, section 3.4 referencing 40 CFR 75.10(a)(2))

b. SO₂

- i. The owner or operator shall not exceed 1.2 lb/MMBtu per hour heat input based on a three hour rolling average. (Regulation 6.07, section 4.1)
- ii. The owner or operator shall comply with the SO₂ emission allowances specified in Acid Rain Permit No.176-97-AR (R4). (See Acid Rain Permit Attachment) (Regulation 6.47, section 3.2 referencing 40 CFR Part 73)
- iii. The owner or operator shall operate and maintain the FGD, as recommended by the manufacturer, at all times the respective boiler is in operation, including periods of startup, shutdown, and malfunction, in a manner consistent with good air pollution control practice to meet the standards.³¹ (Regulation 2.16, section 4.1.1)

³⁰ The emission standards, monitoring, record keeping, and reporting requirements only apply to the boiler E3 (not the coal silos E4) if not indicated.

³¹ The SO₂ emissions cannot meet the standards uncontrolled. The owner or operator is required to operate the control devices to meet the applicable limits for SO₂.

- iv. The owner or operator shall install, maintain, calibrate and operate a continuous emission monitoring system (CEMS) for the measurement of sulfur dioxide in the flue gas. (Regulation 6.02, section 6.1.2) (Regulation 6.47, section 3.4 referencing 40 CFR 75.10(a)(1))

c. PM

- i. The owner or operator shall not exceed an allowable particulate emission rate of 0.11 lbs/MMBtu heat input based on a three hour rolling average. (Regulation 6.07, section 3.1)
- ii. The owner or operator shall operate and maintain the PM control devices, as recommended by the manufacturer, at all times the respective boiler is in operation, including periods of startup, shutdown, and malfunction, in a manner consistent with good air pollution control practice to meet the standards. Following commissioning of the PJFF baghouses, the owner or operator may elect to operate, turn down, or turn off the ESP to ensure the efficient operation of the PJFF baghouse.³² (Regulation 2.16, section 4.1.1)
- iii. The company shall follow one of the two options below to demonstrate compliance with PM standards:

| Compliance Options | PM | Opacity | Control Device Performance indication |
|--------------------|-------------------|--------------------------------|---------------------------------------|
| Option 1 | Certified PM CEMS | VE/Method 9, or Certified COMS | N/A |
| Option 2 | Annual testing | Certified COMS | PM CEMS |

- iv. For the coal silos (E4), the owner or operator shall not exceed an allowable particulate emission rate of 82.95 lbs/hr from four coal silos combined based on actual operating hours in a calendar day.³³ (Regulation 6.09, section 3.2)

d. Opacity

- i. The owner or operator shall not cause the emission into the open air of particulate matter from any indirect heat exchanger which is greater than 20% opacity, except emissions into the open air of particulate matter from any indirect heat exchanger during building a new fire, cleaning the fire

³² The PM emissions cannot meet the standards uncontrolled. The owner or operator is required to operate the control devices to meet the applicable limits for PM.

³³ For the coal silos (E4), the owner or operator has shown, by worst-case calculations without allowance for a control device, that the hourly uncontrolled PM emission standard cannot be exceeded; therefore, no additional monitoring, recordkeeping, or reporting is required to demonstrate compliance with the applicable PM standards specified in Regulation 6.09 is required for this emission point.

box, or blowing soot for a period or periods aggregating not more than ten minutes in any 60 minutes which are less than 40% opacity. (Regulation 6.07, section 3.2 and 3.3)

- ii. The company shall follow one of the two options in the table under Specific Condition S1.c.iii to demonstrate compliance with opacity standards.
- iii. For the coal silos (E4), the owner or operator shall not allow visible emissions to equal or exceed 20% opacity. (Regulation 6.09, section 3.1)

e. **TAC**

- i. The owner or operator shall not allow TAC emissions from boiler E3 to exceed the TAC emission standards determined based upon the EA Demonstration provided to the District.³⁴ (Regulation 5.21, section 4.2 and section 4.3) (See Comment 1)

| TAC Name | CAS # | TAC Limits Determination | |
|----------------------------|------------|--------------------------------------|-----------------|
| | | (lbs/yr) | Basis of Limits |
| Naphthalene | 91-20-3 | 16.6 | Controlled PTE |
| Formaldehyde | 50-00-0 | 70.3 | Controlled PTE |
| Hydrogen fluoride | 7664-39-3 | 13,385 | Controlled PTE |
| Arsenic compounds | 7440-38-2 | 266 | Controlled PTE |
| Cadmium compounds | 7440-43-9 | 42.1 | Controlled PTE |
| Chromium VI | 7440-47-3 | 94.5 | Controlled PTE |
| Chromium III | 16065-83-1 | 216 | Controlled PTE |
| Cobalt compounds | 7440-48-4 | 56.2 | Controlled PTE |
| Lead compounds | 7439-92-1 | 332 | Controlled PTE |
| Manganese compounds | 7439-96-5 | 424 | Controlled PTE |
| Nickel compounds | 7440-02-0 | 307 | Controlled PTE |
| Sulfuric acid | 7664-93-9 | 118,679 | Controlled PTE |
| Benzene | 71-43-2 | De minimis values
(See Comment 1) | De Minimis |
| Bromoform | 75-25-2 | | De Minimis |
| Chloroform | 67-66-3 | | De Minimis |
| Methylene chloride | 75-09-2 | | De Minimis |
| Tetrachloroethylene (Perc) | 127-18-4 | | De Minimis |
| Toluene | 108-88-3 | | De Minimis |
| Xylene | 1330-20-7 | | De Minimis |
| Hydrochloric acid | 7647-01-0 | | De Minimis |

- ii. See Plant-wide Requirements S1.b.

³⁴ This table for TAC emission standards has been revised to exclude Category 3 and 4 TACs for existing sources and use “de minimis values”, instead of actual numbers for current de minimis levels, as emission standards.

f. **HAP** (40 CFR 63, Subpart UUUUU)

The owner or operator shall comply with 40 CFR 63, Subpart UUUUU (See Attachment A) no later than April 16, 2016.³⁵

g. **BART** (40 CFR 52, Subpart S)

The owner or operator shall continue to utilize PJFF baghouse and/or existing ESP to control PM emissions for this unit.³⁶ (40 CFR 52.920(e) refer to Kentucky Regional Haze SIP)

S2. Monitoring and Record Keeping (Regulation 2.16, sections 4.1.9.1 and 4.1.9.2)

The owner or operator shall maintain the following records for a minimum of 5 years and make the records readily available to the District upon request.

a. **NO_x**

- i. The owner or operator shall demonstrate compliance with NO_x RACT Plan limits by continuous emissions monitors (CEMs) as specified in the NO_x RACT Plan. (See NO_x RACT Attachment) (Regulation 6.42, section 4.3)
- ii. The owner or operator shall keep a record identifying all deviations from the requirements of the NO_x RACT Plan.
- iii. The owner or operator shall comply with the NO_x compliance plan requirements specified in the attached Acid Rain Permit, No.176-97-AR (R4). These record keeping requirements shall be determined in accordance with the Title IV Phase II Acid Rain Permit and are specified in 40 CFR Part 75 Subpart F. (See Appendix A to NO_x RACT Plan) (Regulation 6.47, section 3.4 and 3.5 referencing 40 CFR Parts 75 and 76)
- iv. The owner or operator shall record on an hourly basis all NO_x emission data specified in 40 CFR Part 75, section 75.57(d). For each NO_x emission rate (in lb/mmBtu) measured by a NO_x-diluent monitoring system, or, if applicable, for each NO_x concentration (in ppm) measured by a NO_x concentration monitoring system used to calculate NO_x mass emissions under 40 CFR 75.71(a)(2), record the following data as measured and

³⁵ According to 40 CFR 63.9984(b), the compliance date for an existing EGU is April 16, 2015. LG&E requested a year extension and the District has approved the request for the extension per (40 CFR 63.6(i)(4)(i)). Therefore the compliance date for the EGUs under this construction is April 16, 2016.

³⁶ On March 30, 2012, EPA finalized a limited approval and a limited disapproval of the Kentucky state implementation plan submitted on June 25, 2008 and May 28, 2010. According to 40 CFR 52.920(e), the owner or operator shall meet BART requirements summarized in Table 7.5.3-2 of the Commonwealth's May 28, 2010 submittal.

reported from the certified primary monitor, certified back-up monitor, or other approved method of emissions determination:

- 1) Component-system identification code, as provided in 40 CFR 75.53 (including identification code for the moisture monitoring system, if applicable); (40 CFR 75.57(d)(1))
- 2) Date and hour; (40 CFR 75.57(d)(2))
- 3) Hourly average NO_x concentration (ppm, rounded to the nearest tenth) and hourly average NO_x concentration (ppm, rounded to the nearest tenth) adjusted for bias if bias adjustment factor required, as provided in 40 CFR 75.24(d); (40 CFR 75.57(d)(3))
- 4) Hourly average diluent gas concentration (for NO_x -diluent monitoring systems, only, in units of percent O₂ or percent CO₂, rounded to the nearest tenth); (40 CFR 75.57(d)(4))
- 5) If applicable, the hourly average moisture content of the stack gas (percent H₂O, rounded to the nearest tenth). If the continuous moisture monitoring system consists of wet- and dry-basis oxygen analyzers, also record both the hourly wet- and dry-basis oxygen readings (in percent O₂, rounded to the nearest tenth); (40 CFR 75.57(d)(5))
- 6) Hourly average NO_x emission rate (for NO_x -diluent monitoring systems only, in units of lb/mmBtu, rounded to the nearest thousandth); (40 CFR 75.57(d)(6))
- 7) Hourly average NO_x emission rate (for NO_x -diluent monitoring systems only, in units of lb/mmBtu, rounded to the nearest thousandth), adjusted for bias if bias adjustment factor is required, as provided in 40 CFR 75.24(d). The requirement to report hourly NO_x emission rates to the nearest thousandth shall not affect NO_x compliance determinations under part 76 of this chapter; compliance with each applicable emission limit under part 76 shall be determined to the nearest hundredth pound per million Btu; (40 CFR 75.57(d)(7))
- 8) Percent monitoring system data availability (recorded to the nearest tenth of a percent), for the NO_x -diluent or NO_x concentration monitoring system, and, if applicable, for the moisture monitoring system, calculated pursuant to 40 CFR 75.32; (40 CFR 75.57(d)(8))

- 9) Method of determination for hourly average NO_x emission rate or NO_x concentration and (if applicable) for the hourly average moisture percentage, using Codes 1–55 in Table 4a of 40 CFR 75.57; and (40 CFR 75.57(d)(9))
 - 10) Identification codes for emissions formulas used to derive hourly average NO_x emission rate and total NO_x mass emissions, as provided in 40 CFR 75.53, and (if applicable) the F-factor used to convert NO_x concentrations into emission rates. (40 CFR 75.57(d)(10))
- v. A CEMS for measuring either oxygen (O₂) or carbon dioxide (CO₂) in the flue gases shall be installed, calibrated, maintained, and operated by the owner or operator. (Regulation 6.02, section 6.1.3) (NO_x RACT Plan)
 - vi. The owner or operator shall monitor the NO_x emissions, the NO_x allowances, as specified in the Clean Air Interstate Rule or the applicable NO_x cap and trade program(s) in effect.
 - vii. The owner or operator shall comply with the following in order to demonstrate compliance with the emission standard as required by 40 CFR 52: For performance evaluations under 40 CFR 60.13(c) and calibration checks under 40 CFR 60.13(d), the following procedures shall be used:
 - 1) Methods 6, 7, and 3B of appendix A of this part, as applicable, shall be used for the performance evaluations of SO₂ and NO_x continuous monitoring systems. Acceptable alternative methods for Methods 6, 7, and 3B of appendix A of this part are given in 40 CFR 60.46(d).
 - 2) Sulfur dioxide or nitric oxide, as applicable, shall be used for preparing calibration gas mixtures under Performance Specification 2 of appendix B to this part.
 - 3) For affected facilities burning fossil fuel(s), the span value for a continuous monitoring system measuring the opacity of emissions shall be 80, 90, or 100 percent. For a continuous monitoring system measuring sulfur oxides or NO_x the span value shall be determined using one of the following procedures:
 - (a) Except as provided under paragraph 40 CFR 60.45(c)(3)(ii), SO₂ and NO_x span values shall be determined as follows:

| Fossil fuel | In parts per million | |
|-------------|--------------------------------|--------------------------------|
| | Span value for SO ₂ | Span value for NO _x |
| Gas | Not Applicable | 500. |
| Liquid | 1,000 | 500. |
| Solid | 1,500 | 1,000. |

- (b) As an alternative to meeting the requirements of paragraph 40 CFR 60.45(c)(3)(i), the owner or operator of an affected facility may elect to use the SO₂ and NO_x span values determined according to sections 2.1.1 and 2.1.2 in appendix A to part 75 of this chapter.
- viii. The owner or operator shall comply with the following in order to demonstrate compliance with the emission standard as required by 40 CFR 52: The conversion procedures in 40 CFR 60.45(e) and (f) shall be used to convert the continuous monitoring data into units of the applicable standards.
- 1) For any CEMS installed under paragraph (a) of this section, the following conversion procedures shall be used to convert the continuous monitoring data into units of the applicable standards (ng/J, lb/MMBtu):

- (a) When a CEMS for measuring O₂ is selected, the measurement of the pollutant concentration and O₂ concentration shall each be on a consistent basis (wet or dry). Alternative procedures approved by the Administrator shall be used when measurements are on a wet basis. When measurements are on a dry basis, the following conversion procedure shall be used:

$$E = CF \left(\frac{20.9}{(20.9 - \%O_2)} \right)$$

Where E, C, F, and %O₂ are determined under paragraph (f) of this section.

- (b) When a CEMS for measuring CO₂ is selected, the measurement of the pollutant concentration and CO₂ concentration shall each be on a consistent basis (wet or dry) and the following conversion procedure shall be used:

$$E = CF_c \left(\frac{100}{\%CO_2} \right)$$

Where E, C, F_c and %CO₂ are determined under paragraph (f) of this section.

- 2) The values used in the equations under paragraphs (e)(1) and (2) of this section are derived as follows:
- (a) E = pollutant emissions, ng/J (lb/MMBtu).
 - (b) C = pollutant concentration, ng/dscm (lb/dscf), determined by multiplying the average concentration (ppm) for each one-hour period by 4.15×10^{-4} M ng/dscm per ppm (2.59×10^{-9} M lb/dscf per ppm) where M = pollutant molecular weight, g/g-mole (lb/lb-mole). M = 64.07 for SO₂ and 46.01 for NO_x.
 - (c) %O₂, %CO₂= O₂ or CO₂ volume (expressed as percent), determined with equipment specified under paragraph (a) of this section.
 - (d) F, F_c = a factor representing a ratio of the volume of dry flue gases generated to the calorific value of the fuel combusted (F), and a factor representing a ratio of the volume of CO₂ generated to the calorific value of the fuel combusted (F_c), respectively. Values of F and F_c are given as follows:
 - (i) For anthracite coal as classified according to ASTM D388 (incorporated by reference, see 40 CFR 60.17), $F = 2,723 \times 10^{-17}$ dscm/J (10,140 dscf/MMBtu) and $F_c = 0.532 \times 10^{-17}$ scm CO₂/J (1,980 scf CO₂/MMBtu).
 - (ii) For subbituminous and bituminous coal as classified according to ASTM D388 (incorporated by reference, see 40 CFR 60.17), $F = 2.637 \times 10^{-7}$ dscm/J (9,820 dscf/MMBtu) and $F_c = 0.486 \times 10^{-7}$ scm CO₂/J (1,810 scf CO₂/MMBtu).
 - (iii) For liquid fossil fuels including crude, residual, and distillate oils, $F = 2.476 \times 10^{-7}$ dscm/J (9,220 dscf/MMBtu) and $F_c = 0.384 \times 10^{-7}$ scm CO₂/J (1,430 scf CO₂/MMBtu).
 - (iv) For gaseous fossil fuels, $F = 2.347 \times 10^{-7}$ dscm/J (8,740 dscf/MMBtu). For natural gas, propane, and butane fuels, $F_c = 0.279 \times 10^{-7}$ scm CO₂/J (1,040 scf CO₂/MMBtu) for natural gas, 0.322×10^{-7} scm CO₂/J (1,200 scf CO₂/MMBtu) for propane, and 0.338×10^{-7} scm CO₂/J (1,260 scf CO₂/MMBtu) for butane.
 - (v) For bark $F = 2.589 \times 10^{-7}$ dscm/J (9,640

dscf/MMBtu) and $F_c = 0.500 \times 10^{-7}$ scm CO₂/J (1,840 scf CO₂/MMBtu). For wood residue other than bark $F = 2.492 \times 10^{-7}$ dscm/J (9,280 dscf/MMBtu) and $F_c = 0.494 \times 10^{-7}$ scm CO₂/J (1,860 scf CO₂/MMBtu).

(vi) For lignite coal as classified according to ASTM D388 (incorporated by reference, see 40 CFR 60.17), $F = 2.659 \times 10^{-7}$ dscm/J (9,900 dscf/MMBtu) and $F_c = 0.516 \times 10^{-7}$ scm CO₂/J (1,920 scf CO₂/MMBtu).

(e) The owner or operator may use the following equation to determine an F factor (dscm/J or dscf/MMBtu) on a dry basis (if it is desired to calculate F on a wet basis, consult the Administrator) or F_c factor (scm CO₂/J, or scf CO₂/MMBtu) on either basis in lieu of the F or F_c factors specified in paragraph (f)(4) of this section:

$$F = 10^6 \frac{[227.2 (\%H) + 95.5 (\%C) + 35.6 (\%S) + 8.7 (\%N) - 28.7 (\%O)]}{GCV}$$

$$F_c = \frac{2.0 \times 10^{-3} (\%C)}{GCV \text{ (SI units)}}$$

$$F = 10^6 \frac{[3.64 (\%H) + 1.53 (\%C) + 0.57 (\%S) + 0.14 (\%N) - 0.46 (\%O)]}{GCV \text{ (English units)}}$$

$$F_c = \frac{20.0 (\%C)}{GCV \text{ (SI units)}}$$

$$F_c = \frac{321 \times 10^3 (\%C)}{GCV \text{ (English units)}}$$

(i) %H, %C, %S, %N, and %O are content by weight of hydrogen, carbon, sulfur, nitrogen, and O₂ (expressed as percent), respectively, as determined on the same basis as GCV by ultimate analysis of the fuel fired, using ASTM D3178 or D3176 (solid fuels), or computed from results using ASTM D1137, D1945, or D1946 (gaseous fuels) as applicable. (These five methods are incorporated by reference, see 40 CFR 60.17.)

(ii) GCV is the gross calorific value (kJ/kg, Btu/lb) of the fuel combusted determined by the ASTM test methods D2015 or D5865 for solid fuels and D1826

for gaseous fuels as applicable. (These three methods are incorporated by reference, see 40 CFR 60.17.)

- (iii) For affected facilities which fire both fossil fuels and nonfossil fuels, the F or F_c value shall be subject to the Administrator's approval.
- (f) For affected facilities firing combinations of fossil fuels or fossil fuels and wood residue, the F or F_c factors determined by paragraphs (f)(4) or (f)(5) of this section shall be prorated in accordance with the applicable formula as follows:

$$F = \sum_{i=1}^n X_i F_i \quad \text{or} \quad F_c = \sum_{i=1}^n X_i (F_c)_i$$

Where:

X_i= Fraction of total heat input derived from each type of fuel (e.g. natural gas, bituminous coal, wood residue, etc.);

F_i or (F_c)_i= Applicable F or F_c factor for each fuel type determined in accordance with paragraphs (f)(4) and (f)(5) of this section; and

n = Number of fuels being burned in combination.

b. SO₂

- i. The owner or operator shall maintain hourly records of SO₂ emissions as specified in Regulation 6.02, section 6.1.2.
- ii. The owner or operator shall record on an hourly basis all SO₂ emission data specified in 40 CFR 75.57(c):
 - 1) For SO₂ concentration during unit operation, as measured and reported from each certified primary monitor, certified back-up monitor, or other approved method of emissions determination: (40 CFR 75.57(c)(1))
 - (a) Component-system identification code, as provided in 40 CFR 75.53; (40 CFR 75.57(c)(1)(i))
 - (b) Date and hour; (40 CFR 75.57(c)(1)(ii))
 - (c) Hourly average SO₂ concentration (ppm, rounded to the nearest tenth); (40 CFR 75.57(c)(1)(iii))

- (d) Hourly average SO₂ concentration (ppm, rounded to the nearest tenth), adjusted for bias if bias adjustment factor is required, as provided in 40 CFR 75.24(d); (40 CFR 75.57(c)(1)(iv))
 - (e) Percent monitor data availability (recorded to the nearest tenth of a percent), calculated pursuant to 40 CFR 75.32; and (40 CFR 75.57(c)(1)(v))
 - (f) Method of determination for hourly average SO₂ concentration using Codes 1–55 in Table 4a of 40 CFR 75.57. (40 CFR 75.57(c)(1)(vi))
- 2) For flow rate during unit operation, as measured and reported from each certified primary monitor, certified back-up monitor, or other approved method of emissions determination: (40 CFR 75.57(c)(2))
- (a) Component-system identification code, as provided in 40 CFR 75.53; (40 CFR 75.57(c)(2)(i))
 - (b) Date and hour; (40 CFR 75.57(c)(2)(ii))
 - (c) Hourly average volumetric flow rate (in scfh, rounded to the nearest thousand); (40 CFR 75.57(c)(2)(iii))
 - (d) Hourly average volumetric flow rate (in scfh, rounded to the nearest thousand), adjusted for bias if bias adjustment factor required, as provided in 40 CFR 75.24(d); (40 CFR 75.57(c)(2)(iv))
 - (e) Percent monitor data availability (recorded to the nearest tenth of a percent) for the flow monitor, calculated pursuant to 40 CFR 75.32; and (40 CFR 75.57(c)(2)(v))
 - (f) Method of determination for hourly average flow rate using Codes 1–55 in Table 4a of 40 CFR 75.57. (40 CFR 75.57(c)(2)(vi))
- 3) For SO₂ mass emission rate during unit operation, as measured and reported from the certified primary monitoring system(s), certified redundant or non-redundant back-up monitoring system(s), or other approved method(s) of emissions determination: (40 CFR 75.57(c)(4))
- (a) Date and hour; (40 CFR 75.57(c)(4)(i))

- (b) Hourly SO₂ mass emission rate (lb/hr, rounded to the nearest tenth); (40 CFR 75.57(c)(4)(ii))
 - (c) Hourly SO₂ mass emission rate (lb/hr, rounded to the nearest tenth), adjusted for bias if bias adjustment factor required, as provided in 40 CFR 75.24(d); and (40 CFR 75.57(c)(4)(iii))
 - (d) Identification code for emissions formula used to derive hourly SO₂ mass emission rate from SO₂ concentration and flow and (if applicable) moisture data in paragraphs (c)(1), (c)(2), and (c)(3) of 40 CFR 75.57, as provided in 40 CFR 75.53. (40 CFR 75.57(c)(4)(iv))
- iii. The owner or operator shall comply with the following in order to demonstrate compliance with the emission standard as required by 40 CFR 52: For performance evaluations under 40 CFR 60.13(c) and calibration checks under 40 CFR 60.13(d), the following procedures shall be used:
- 1) Methods 6, 7, and 3B of appendix A of this part, as applicable, shall be used for the performance evaluations of SO₂ and NO_x continuous monitoring systems. Acceptable alternative methods for Methods 6, 7, and 3B of appendix A of this part are given in 40 CFR 60.46(d).
 - 2) Sulfur dioxide or nitric oxide, as applicable, shall be used for preparing calibration gas mixtures under Performance Specification 2 of appendix B to this part.
 - 3) For affected facilities burning fossil fuel(s), the span value for a continuous monitoring system measuring the opacity of emissions shall be 80, 90, or 100 percent. For a continuous monitoring system measuring sulfur oxides or NO_x the span value shall be determined using one of the following procedures:
 - (a) Except as provided under paragraph 40 CFR 60.45(c)(3)(ii), SO₂ and NO_x span values shall be determined as follows:

| Fossil fuel | In parts per million | |
|-------------|--------------------------------|--------------------------------|
| | Span value for SO ₂ | Span value for NO _x |
| Gas | Not Applicable | 500. |
| Liquid | 1,000 | 500. |
| Solid | 1,500 | 1,000. |

- (b) As an alternative to meeting the requirements of paragraph 40 CFR 60.45(c)(3)(i), the owner or operator of an affected facility may elect to use the SO₂ and NO_x span values determined according to sections 2.1.1 and 2.1.2 in appendix A to part 75 of this chapter.
- iv. The owner or operator shall comply with the following in order to demonstrate compliance with the emission standard as required by 40 CFR 52: The conversion procedures in 40 CFR 60.45(e) and (f) shall be used to convert the continuous monitoring data into units of the applicable standards.
- 1) For any CEMS installed under paragraph (a) of this section, the following conversion procedures shall be used to convert the continuous monitoring data into units of the applicable standards (ng/J, lb/MMBtu):

- (a) When a CEMS for measuring O₂ is selected, the measurement of the pollutant concentration and O₂ concentration shall each be on a consistent basis (wet or dry). Alternative procedures approved by the Administrator shall be used when measurements are on a wet basis. When measurements are on a dry basis, the following conversion procedure shall be used:

$$E = CF \left(\frac{20.9}{(20.9 - \%O_2)} \right)$$

Where E, C, F, and %O₂ are determined under paragraph (f) of this section.

- (b) When a CEMS for measuring CO₂ is selected, the measurement of the pollutant concentration and CO₂ concentration shall each be on a consistent basis (wet or dry) and the following conversion procedure shall be used:

$$E = CF_c \left(\frac{100}{\%CO_2} \right)$$

Where E, C, F_c and %CO₂ are determined under paragraph (f) of this section.

- 2) The values used in the equations under paragraphs (e)(1) and (2) of this section are derived as follows:
- (a) E = pollutant emissions, ng/J (lb/MMBtu).

- (b) C = pollutant concentration, ng/dscm (lb/dscf), determined by multiplying the average concentration (ppm) for each one-hour period by 4.15×10^{-4} M ng/dscm per ppm (2.59×10^{-9} M lb/dscf per ppm) where M = pollutant molecular weight, g/g-mole (lb/lb-mole). $M = 64.07$ for SO_2 and 46.01 for NO_x .
- (c) $\% \text{O}_2$, $\% \text{CO}_2 = \text{O}_2$ or CO_2 volume (expressed as percent), determined with equipment specified under paragraph (a) of this section.
- (d) F , F_c = a factor representing a ratio of the volume of dry flue gases generated to the calorific value of the fuel combusted (F), and a factor representing a ratio of the volume of CO_2 generated to the calorific value of the fuel combusted (F_c), respectively. Values of F and F_c are given as follows:
- (i) For anthracite coal as classified according to ASTM D388 (incorporated by reference, see 40 CFR 60.17), $F = 2,723 \times 10^{-17}$ dscm/J (10,140 dscf/MMBtu) and $F_c = 0.532 \times 10^{-17}$ scm CO_2 /J (1,980 scf CO_2 /MMBtu).
 - (ii) For subbituminous and bituminous coal as classified according to ASTM D388 (incorporated by reference, see 40 CFR 60.17), $F = 2.637 \times 10^{-7}$ dscm/J (9,820 dscf/MMBtu) and $F_c = 0.486 \times 10^{-7}$ scm CO_2 /J (1,810 scf CO_2 /MMBtu).
 - (iii) For liquid fossil fuels including crude, residual, and distillate oils, $F = 2.476 \times 10^{-7}$ dscm/J (9,220 dscf/MMBtu) and $F_c = 0.384 \times 10^{-7}$ scm CO_2 /J (1,430 scf CO_2 /MMBtu).
 - (iv) For gaseous fossil fuels, $F = 2.347 \times 10^{-7}$ dscm/J (8,740 dscf/MMBtu). For natural gas, propane, and butane fuels, $F_c = 0.279 \times 10^{-7}$ scm CO_2 /J (1,040 scf CO_2 /MMBtu) for natural gas, 0.322×10^{-7} scm CO_2 /J (1,200 scf CO_2 /MMBtu) for propane, and 0.338×10^{-7} scm CO_2 /J (1,260 scf CO_2 /MMBtu) for butane.
 - (v) For bark $F = 2.589 \times 10^{-7}$ dscm/J (9,640 dscf/MMBtu) and $F_c = 0.500 \times 10^{-7}$ scm CO_2 /J (1,840 scf CO_2 /MMBtu). For wood residue other than bark $F = 2.492 \times 10^{-7}$ dscm/J (9,280 dscf/MMBtu) and $F_c = 0.494 \times 10^{-7}$ scm CO_2 /J (1,860 scf CO_2 /MMBtu).
 - (vi) For lignite coal as classified according to ASTM D388 (incorporated by reference, see 40 CFR

60.17), $F = 2.659 \times 10^{-7}$ dscm/J (9,900 dscf/MMBtu) and $F_c = 0.516 \times 10^{-7}$ scm CO₂/J (1,920 scf CO₂/MMBtu).

- (e) The owner or operator may use the following equation to determine an F factor (dscm/J or dscf/MMBtu) on a dry basis (if it is desired to calculate F on a wet basis, consult the Administrator) or F_c factor (scm CO₂/J, or scf CO₂/MMBtu) on either basis in lieu of the F or F_c factors specified in paragraph (f)(4) of this section:

$$F = 10^6 \frac{[227.2 (\%H) + 95.5 (\%C) + 35.6 (\%S) + 8.7 (\%N) - 28.7 (\%O)]}{GCV}$$

$$F_c = \frac{2.0 \times 10^{-3} (\%C)}{GCV \text{ (SI units)}}$$

$$F = 10^6 \frac{[3.64 (\%H) + 1.53 (\%C) + 0.57 (\%S) + 0.14 (\%N) - 0.46 (\%O)]}{GCV \text{ (English units)}}$$

$$F_c = \frac{20.0 (\%C)}{GCV \text{ (SI units)}}$$

$$F_c = \frac{321 \times 10^3 (\%C)}{GCV \text{ (English units)}}$$

- (i) %H, %C, %S, %N, and %O are content by weight of hydrogen, carbon, sulfur, nitrogen, and O₂ (expressed as percent), respectively, as determined on the same basis as GCV by ultimate analysis of the fuel fired, using ASTM D3178 or D3176 (solid fuels), or computed from results using ASTM D1137, D1945, or D1946 (gaseous fuels) as applicable. (These five methods are incorporated by reference, see 40 CFR 60.17.)
- (ii) GVC is the gross calorific value (kJ/kg, Btu/lb) of the fuel combusted determined by the ASTM test methods D2015 or D5865 for solid fuels and D1826 for gaseous fuels as applicable. (These three methods are incorporated by reference, see 40 CFR 60.17.)
- (iii) For affected facilities which fire both fossil fuels and nonfossil fuels, the F or F_c value shall be subject to the Administrator's approval.

- (f) For affected facilities firing combinations of fossil fuels or fossil fuels and wood residue, the F or F_c factors determined by paragraphs (f)(4) or (f)(5) of this section shall be prorated in accordance with the applicable formula as follows:

$$F = \sum_{i=1}^n X_i F_i \quad \text{or} \quad F_c = \sum_{i=1}^n X_i (F_c)_i$$

Where:

X_i= Fraction of total heat input derived from each type of fuel (e.g. natural gas, bituminous coal, wood residue, etc.);

F_i or (F_c)_i= Applicable F or F_c factor for each fuel type determined in accordance with paragraphs (f)(4) and (f)(5) of this section; and

n = Number of fuels being burned in combination.

c. PM

- i. The company shall follow one of the two options below to demonstrate compliance with PM standards:
- 1) Option 1: the owner or operator shall install, maintain, calibrate, and operate a PM CEMS for each steam generating unit.^{37,38} (Regulation 2.16, section 4.1.1) (40 CFR 64)
 - (a) The use of PM CEMS as the measurement technique must be appropriate for the stack conditions.
 - (b) The PM CEMS must be installed, operated and maintained in accordance with the manufacturer's recommendations.
 - (c) The PM CEMS must be certified in accordance with Performance Specification 11, Specifications and Test Procedures for Particulate Matter Continuous Emission

³⁷ According to LG&E's request, PM CEMS have been installed, calibrated, maintained, and operated for Unit 1. LG&E requested permission to remove COMS for Unit 3 and 4 under provisions in 40 CFR 60.13(i)(1), "Alternative monitoring requirements when installation of a continuous monitoring system or monitoring device specified by this part would not provide accurate measurements due to liquid water or other interferences caused by substances in the effluent gases." LG&E's proposal for Unit 3 and 4 was accepted in a letter from EPA dated Feb. 28, 2007. The District accordingly approved LG&E's request for removing COMS for Unit 1 and 2 providing PM CEMS are appropriately installed for these units.

³⁸ The coal-fired boilers are subject to 40 CFR Part 64 - Compliance Assurance Monitoring (CAM) for Major Stationary Source since SO₂, PM, and NO_x emissions from each of the boilers may be greater than the major source threshold and control devices are required to achieve compliance with standards. On 5/21/2014, LG&E submitted a revised CAM Plan in which SO₂ and NO_x CEMS are used for compliance demonstration. PM CEMS is used to demonstrate compliance or provide an indication of continuous PM control.

Monitoring Systems at Stationary Sources, found in 40 CFR 60, Appendix B.

- (d) A quality assurance/quality control program must be implemented in accordance with procedures in 40 CFR 60, Appendix F, Procedure 2 (Quality Assurance Requirements for Particulate Matter Continuous Emission Monitoring Systems at Stationary Sources).
 - (e) Compliance with the particulate matter emission limit will be based upon three-hour rolling average periods during source operation.
 - (f) Quarterly excess emission reports must be submitted, and PM excess emissions shall be reported based upon three-hour rolling averages during source operation.
- 2) Option 2: the owner or operator shall conduct an annual EPA Reference Method 5 performance test following the testing requirements in Attachment B, Specific Condition b.ii.
- ii. If certified PM CEMS (Option 1) is used to demonstrate compliance with PM standards, the owner or operator shall record on an hourly basis all PM emission data, in lb/MMBtu, from PM CEMS.³⁹ (40 CFR 64)
 - iii. If annual PM testing (Option 2) is used to demonstrate compliance with PM standards, the owner or operator shall use PM CEMS as a performance indicator of continuous normal operation of the PM control devices and do the following:³⁹ (40 CFR 64)
 - 1) The owner or operator shall monitor and record all PM emission data from PM CEMS, which is used as the indicator of normal operation of the PM control devices.
 - 2) The owner or operator shall maintain daily records of any periods of time where the process was operating and the PM control devices were not operating or a declaration that the PM control devices operated at all times that day when the process was operating.

³⁹ The coal-fired boilers are subject to 40 CFR Part 64 - Compliance Assurance Monitoring (CAM) for Major Stationary Source since SO₂, PM, and NO_x emissions from each of the boilers may be greater than the major source threshold and control devices are required to achieve compliance with standards. On 5/21/2014, LG&E submitted a revised CAM Plan in which SO₂ and NO_x CEMS are used for compliance demonstration. PM CEMS is used to demonstrate compliance or provide an indication of continuous PM control.

- 3) If there is any time that the PM control devices are bypassed or not in operation when the process is operating, then the owner or operator shall keep a record of the following for each bypass event:
 - (a) Date;
 - (b) Start time and stop time;
 - (c) Identification of the control devices and process equipment;
 - (d) PM emissions during the bypass in lb/hr;
 - (e) Summary of the cause or reason for each bypass event;
 - (f) Corrective action taken to minimize the extent or duration of the bypass event; and
 - (g) Measures implemented to prevent reoccurrence of the situation that resulted in the bypass event.

d. Opacity

- i. If certified COMS is used to demonstrate compliance with opacity standards, the owner or operator shall record on an hourly basis all opacity from COMS.⁴⁰
- ii. If VE/Method 9 is used to demonstrate compliance with opacity standards, in order for the owner or operator to use its VE observations to satisfy the opacity monitoring requirement, the following conditions must be met:⁴⁰ (EPA Letter, 2007)
 - 1) On a weekly basis, the owner or operator shall attempt to perform VE observations in accordance with procedures in EPA Method 9.
 - 2) On the weeks when it is possible to collect unit-specific VE data, at least one hour of Method 9 data shall be collected for each unit.
 - 3) Records of the Method 9 readings shall be submitted with the quarterly excess emission reports for PM emissions.
- iii. The owner or operator shall keep a record of every Method 9 test performed or the reason why it could not be performed that day.
- iv. For coal silos (E4):

⁴⁰ According to LG&E's request, PM CEMS have been installed, calibrated, maintained, and operated for Unit 1. LG&E requested permission to remove COMS for Unit 3 and 4 under provisions in 40 CFR 60.13(i)(1), "Alternative monitoring requirements when installation of a continuous monitoring system or monitoring device specified by this part would not provide accurate measurements due to liquid water or other interferences caused by substances in the effluent gases." LG&E's proposal for Unit 3 and 4 was accepted in a letter from EPA dated Feb. 28, 2007. The District accordingly approved LG&E's request for removing COMS for Unit 1 and 2 providing PM CEMS are appropriately installed for these units.

- 1) The owner or operator shall conduct a weekly one-minute visible emissions survey, during normal operation, of the PM Emission Points (stacks). For Emission Points without observed visible emissions during twelve consecutive operating weeks, the owner or operator may elect to conduct a monthly one-minute visible emission survey, during normal operation.
- 2) At Emission Points where visible emissions are observed, the owner or operator shall initiate corrective action within eight hours of the initial observation. If the visible emissions persist, the owner or operator shall perform or cause to be performed a Method 9 for stack emissions within 24 hours of the initial observation. If the opacity standard is exceeded, the owner or operator shall report the exceedance to the District, according to Regulation 1.07, and take all practicable steps to eliminate the exceedance.
- 3) The owner or operator shall maintain records, monthly, of the results of all visible emissions surveys and tests. Records of the results of any visible emissions survey shall include the date of the survey, the name of the person conducting the survey, whether or not visible emissions were observed, and what if any corrective action was performed. If an emission point is not being operated during a given month, then no visible emission survey needs to be performed and a negative declaration shall be entered in the record.

e. **TAC**

- i. The owner or operator shall monthly calculate and record TAC emissions for this unit in order to demonstrate compliance with the TAC emission standards.
- ii. See Plant-wide Requirements S2.b.

f. **HAP** (40 CFR 63, Subpart UUUUU)

- i. The owner or operator shall comply with 40 CFR 63, Subpart UUUUU (See Attachment A) no later than April 16, 2016.
- ii. The owner or operator shall establish a site-specific minimum activated carbon injection rate for PAC injection system according to Attachment B, Specific Condition a.i. The owner or operator shall monitor and record the activated carbon injection rate during each operating day.⁴¹

⁴¹ In a letter dated October 4, 2016, LG&E demonstrated that in certain circumstance EGUs at this plant can meet the MACT mercury standard at zero PAC injection rate. Therefore the source is allowed to use flexible mercury control measures, including PAC injection or liquid additive system, to achieve compliance with MACT mercury standard.

- iii. The owner or operator shall monitor and record all Hg emission data from the Hg sorbent traps, which is used as the indicator of normal operation of the Hg control measures.
 - iv. The owner or operator shall monitor and record the pH of the reactant material in the FGD and any other parameters verified as having a direct effect on Hg emissions during each operating day, which is (are) used as the indicator(s) of normal operation of Hg control measures.⁴²
 - v. The owner or operator shall maintain records of which Hg control devices/measure was being used during each operating day.
- g. **BART (40 CFR 52, Subpart S)**

The owner or operator shall maintain daily records of any periods of time where the process was operating and both PJFF baghouse and ESP were not operating or a declaration that the PJFF baghouse and/or ESP operated at all times that day when the process was operating.

S3. **Reporting** (Regulation 2.16, section 4.1.9.3)

The owner or operator shall submit quarterly compliance reports that include the information in this section.

- a. **NO_x**
 - i. The owner or operator shall identify all periods of exceeding a NO_x emission standard during a quarterly reporting period. The quarterly compliance report shall include the following:
 - 1) Emission Unit ID number and emission point ID number;
 - 2) Identification of all periods during which a deviation occurred;
 - 3) A description, including the magnitude, of the deviation;
 - 4) If known, the cause of the deviation;
 - 5) A description of all corrective actions taken to abate the deviation; and
 - 6) If no deviations occur during a quarterly reporting period, the report shall contain a negative declaration.
 - ii. The owner or operator shall submit a written report of excess emissions and the nature and cause of the excess emissions if known. The averaging period used for data reporting should correspond to the averaging period specified in the emission test method used to determine compliance with

⁴² LG&E has established normal pH range per monitoring records during consecutive 180 days. On 10/20/2016, LG&E reported that the normal pH range for this unit is 4.8 – 6.4.

an emission standard for the pollutant/source category in question. All quarterly reports shall be postmarked by the 30th day following the end of each calendar quarter. The required report shall include: (Regulation 6.02, section 16.1)

- 1) For gaseous measurements, the summary shall consist of hourly averages in the units of the applicable standard. The hourly averages shall not appear in the written summary, but shall be made available electronically. (Regulation 6.02, section 16.3)
 - 2) The data and time identifying each period during which the continuous monitoring system was inoperative, except for zero and span checks, and the nature of system repairs or adjustment shall be reported. Proof of continuous monitoring system performance whenever system repairs or adjustments have been made is required. (Regulation 6.02, section 16.4)
 - 3) When no excess emissions have occurred and the continuous monitoring systems have been inoperative, repaired, or adjusted, such information shall be included in the report. (Regulation 6.02, section 16.5)
 - 4) Owners or operators of affected facilities shall maintain a file of all information reported in the quarterly summaries, and all other data collected either by the continuous monitoring system or as necessary to convert monitoring data to the units of the applicable standard for a minimum of two years from the date of collection of such data or submission of such summaries. (Regulation 6.02, section 16.6)
- iii. The owner or operator shall comply with the reporting requirements for the Acid Rain Permit No.176-97-AR (R4), specified in 40 CFR 75, Subpart G. Notifications, Monitoring Plans, Initial Certification and Recertification Applications, Quarterly Reports, Opacity Reports, Petitions to the Administrator, and Retired Unit Petitions shall be submitted as specified in Subpart G - reporting requirements. (See Attachment E)
 - iv. The owner or operator shall comply with the reporting requirements for the Title IV NO_x Budget Emission Limitation, 0.40 lb/MMBtu, as specified in 40 CFR Part 76.
 - v. Excess emissions for affected facilities using a CEMS for measuring NO_x are defined as: (Regulation 2.16, section 4.1.9.3)

- 1) Any annual average period during which the average emissions (arithmetic average of all one-hour period during the 12 month period) of NO_x as measured by a CEMS exceed the applicable standard.
 - 2) Any 30 operating day period during which the average emissions (arithmetic average of all one-hour periods during the 30 operating days) of NO_x as measured by a CEMS exceed the applicable standard.
- b. **SO₂**
- i. The owner or operator shall identify all periods of exceeding a SO₂ emission standard during a quarterly reporting period. The report shall include the following:
 - 1) Emission Unit ID number and emission point ID number;
 - 2) Identification of all periods during which a deviation occurred;
 - 3) A description, including the magnitude, of the deviation;
 - 4) If known, the cause of the deviation;
 - 5) A description of all corrective actions taken to abate the deviation; and
 - 6) If no deviations occur during a quarterly reporting period, the report shall contain a negative declaration.
 - ii. The owner or operator shall submit a written report of excess emissions and the nature and cause of the excess emissions if known. See Specific Condition S3.a.ii.
 - iii. The owner or operator shall comply with the reporting requirements for the Acid Rain Permit No.176-97-AR (R4), specified in 40 CFR 75, Subpart G. Notifications, monitoring Plans, Initial Certification and Recertification Applications, Quarterly Reports, Opacity Reports, Petitions to the Administrator, and Retired Unit Petitions shall be submitted as specified in Subpart G - reporting requirements. (See Attachment E)
 - iv. Excess emissions for affected facilities using a CEMS for measuring SO₂ are defined as: (Regulation 2.16, section 4.1.9.3)
 - 1) Any three-hour period during which the average emissions (arithmetic average of three contiguous one-hour periods) of SO₂ as measured by a CEMS exceed the applicable standard; or
 - 2) Any 30 operating day period during which the average emissions (arithmetic average of all one-hour periods during the 30 operating

days) of SO₂ as measured by a CEMS exceed the applicable standard.

c. PM

- i. The owner or operator shall identify all periods of exceeding a PM emission standard during a quarterly reporting period. The report shall include the following:
 - 1) Emission Unit ID number and emission point ID number;
 - 2) The date and duration (including the start and stop time) during which a deviation occurred;
 - 3) The magnitude of excess emissions;
 - 4) Description of the deviation and summary information on the cause or reason for excess emissions;
 - 5) Corrective action taken to minimize the extent and duration of each excess emissions event;
 - 6) Measures implemented to prevent reoccurrence of the situation that resulted in excess PM emissions; or
 - 7) If no deviations occur during a quarterly reporting period, the report shall contain a negative declaration.
- ii. The owner or operator shall submit a written report of excess emissions and the nature and cause of the excess emissions if known. See Specific Condition S3.a.ii.

d. Opacity

- i. The owner or operator shall identify all periods of exceeding an opacity standard during a quarterly reporting period. The report shall include the following:
 - 1) Any deviation from the requirement to perform daily (or monthly, if required) visible emission surveys or Method 9 tests and documented reason;
 - 2) Any deviation from the requirement to record the results of each VE survey and Method 9 test performed and documented reason;
 - 3) The number, date, and time of each VE Survey where visible emissions were observed and the results of the Method 9 test performed;
 - 4) Identification of all periods of exceeding an opacity standard;
 - 5) Description of any corrective action taken for each exceedance of the opacity standard; or
 - 6) If no deviations occur during a quarterly reporting period, the report shall contain a negative declaration.

ii. The owner or operator shall comply with the reporting requirements for the Acid Rain Permit No.176-97-AR (R4), specified in 40 CFR 75, Subpart G. Notifications, monitoring Plans, Initial Certification and Recertification Applications, Quarterly Reports, Opacity Reports, Petitions to the Administrator, and Retired Unit Petitions shall be submitted as specified in Subpart G - reporting requirements. (See Attachment E) (Regulation 6.47, section 3.4 and 3.5 referencing 40 CFR Parts 75 and 76)

iii. For coal silos (E4):

The owner or operator shall identify all periods of exceeding an opacity standard during a quarterly reporting period. The report shall include the following:

- 1) Emission Unit ID number, Stack ID number, and/or Emission point ID number;
- 2) The beginning and ending date of the reporting period;
- 3) The date, time and results of each exceedance of the opacity standard;
- 4) Description of any corrective action taken for each exceedance.

e. **TAC**

i. The owner or operator shall identify all periods of exceeding a TAC emission standard during a quarterly reporting period. The report shall include the following:

- 1) Emission Unit ID number and emission point ID number;
- 2) Identification of all periods during which a deviation occurred;
- 3) A description, including the magnitude, of the deviation;
- 4) If known, the cause of the deviation;
- 5) A description of all corrective actions taken to abate the deviation; and
- 6) If no deviations occur during a quarterly reporting period, the report shall contain a negative declaration.

ii. See Plant-wide Requirements S2.b.

f. **HAP** (40 CFR 63, Subpart UUUUU)

i. The owner or operator shall comply with 40 CFR 63, Subpart UUUUU (See Attachment A) no later than April 16, 2016.

- ii. Report normal pH range of reactant material in the FGD and normal range of any other parameters verified as having a direct effect on Hg emission within 30 days of establishing the normal range.
- iii. The owner or operator shall identify all periods of the activated carbon injection rate are less than the minimum injection rate, or the pH of the reactant material in the FGD are out of normal range, or anytime other verified parameters are outside of their normal range, and any corrective action taken for each exceedance.

g. **BART** (40 CFR 52, Subpart S)

The owner or operator shall report any periods of time where the process was operating and both PJFF baghouse and ESP were not operating.

S4. **Testing** (Regulation 2.16, section 4.1.9.1)

a. **Control efficiency determination**

The owner or operator shall conduct performance test for the new EGU control device C27 and C28, according to the testing requirements in Attachment B, C, and G and Attachment C.^{43,44} (Regulation 2.16, section 4.1.9.1)

U2 Comments

1. Boiler (E3) has TAC emission standards since its EA Demonstration was based on controlled PTE. If the controlled PTE for the TAC is less than de minimis level, De Minimis is listed as the basis for the limit. If the controlled PTE for the TAC is greater than de minimis level, modeling results were used to calculate risk value to compare to the EA Goals. In this case, controlled PTE is used as the basis for the limit. TAC emissions for the coal silos (E4) are de minimis according to Regulation 5.21, section 2.1. The TAC emission limits determined by de minimis values shall be updated each time when the District revises the BAC/de minimis values for these TACs. The current de minimis values per TAC list revised on 10/14/2013 are as the following:

| TAC Name | CAS # | De minimis values | |
|----------|---------|-------------------|---------|
| | | (lb/hr) | (lb/yr) |
| Benzene | 71-43-2 | 0.243 | 216 |

⁴³ Per an EPA rule change ("Restructuring of the Stationary Source Audit Program." Federal Register 75:176 (September 13, 2010) pp 55636-55657), if an audit sample is required by the test method, sources became responsible for obtaining the audit samples directly from accredited audit sample suppliers, not the regulatory agencies.

⁴⁴ This unit was modified under construction permit 34595-12-C. According to permit 34595-12-C, the source is required to conduct stack tests to obtain the actual emission factors and control efficiencies.

| TAC Name | CAS # | De minimis values | |
|----------------------------|-----------|-------------------|-----------|
| | | (lb/hr) | (lb/yr) |
| Bromoform | 75-25-2 | 0.4914 | 437 |
| Chloroform | 67-66-3 | 0.02322 | 20.6 |
| Methylene chloride | 75-09-2 | 54 | 48,000 |
| Tetrachloroethylene (Perc) | 127-18-4 | 2.079 | 1,848 |
| Toluene | 108-88-3 | 2700 | 2,400,000 |
| Xylene | 1330-20-7 | 54 | 48,000 |
| Hydrochloric acid | 7647-01-0 | 10.8 | 9,600 |

Emission Unit U3: Electric Utility Steam Generating Unit (EGU) – Unit 3**U3 Applicable Regulations:**

| FEDERALLY ENFORCEABLE REGULATIONS | | |
|--|---|--|
| Regulation | Title | Applicable Sections |
| 6.02 | Emission Monitoring for Existing Sources | 1, 2, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18 |
| 6.09 | Standards of Performance for Existing Process Operations | 1, 2, 3, 5 |
| 6.42 | Reasonably Available Control Technology Requirements for Major Volatile Organic Compound- and Nitrogen Oxides-Emitting Facilities | 1, 2, 3, 4, 5 |
| 6.47 | Federal Acid Rain Program for Existing Sources Incorporated by Reference | 1, 2, 3, 4, 5 |
| 7.06 | Standards of Performance for New Indirect Heat Exchangers | 1, 2, 3, 4.1.2, 4.2, 5.1.2, 6, 7, 8 |
| 7.08 | Standards of Performance for New Process Operations | 1, 2, 3, 5 |
| 40 CFR 60, Subpart D | Standards of Performance for Fossil-Fuel Fired Steam Generators for Which Construction is Commenced After August 17, 1971 | 60.40, 60.41, 60.42(a), 60.43, 60.44, 60.45, 60.46 |
| 40 CFR 64 | Compliance Assurance Monitoring for Major Stationary Sources | 64.1 through 64.10 |
| 40 CFR 68 | Chemical Accident Prevention Provisions | 68.1 through 68.220 |
| 40 CFR 72 | Permits Regulation | Subparts A, B, C, D, E, F, G, H, I |
| 40 CFR 73 | Sulfur Dioxide Allowance System | Subparts A, B, C, D, E, F, G |
| 40 CFR 75 | Continuous Emission Monitoring | Subparts A, B, C, D, E, F, G |
| 40 CFR 76 | Acid Rain Nitrogen Oxides Emission Reduction Program | 76.1, 76.2, 76.3, 76.4, 76.5, 76.7, 76.8, 76.9, 76.11, 76.13, 76.14, 76.15, Appendix A, Appendix B |
| 40 CFR 77 | Excess Emissions | 77.1, 77.2, 77.3, 77.4, 77.5, 77.6 |
| 40 CFR 78 | Appeals Procedures for Acid Rain Program | 78.1, 78.2, 78.3, 78.4, 78.5, 78.6, 78.8, 78.9, 78.10, 78.11, 78.13, 78.14, 78.15, 78.16, 78.17, 78.18, 78.19, 78.20 |
| 40 CFR 63, Subpart UUUUU | National Emission Standards for Hazardous Air Pollutants: Coal- and Oil-Fired Electric Utility Steam Generating Units (EGU MACT) | 63.9980 through 63.10042 |

| DISTRICT ONLY ENFORCEABLE REGULATIONS | | |
|--|---|----------------------------|
| Regulation | Title | Applicable Sections |
| 5.00 | Definitions | 1, 2 |
| 5.01 | General Provisions | 1 through 2 |
| 5.02 | Adoption of National Emission Standards for Hazardous Air Pollutants | 1, 3.95 and 4 |
| 5.14 | Hazardous Air Pollutants and Source Categories | 1, 2 |
| 5.15 | Chemical Accident Prevention Provisions | 1, 2 |
| 5.20 | Methodology for Determining Benchmark Ambient Concentration of a Toxic Air Contaminant | 1 through 6 |
| 5.21 | Environmental Acceptability for Toxic Air Contaminants | 1 through 5 |
| 5.22 | Procedures for Determining the Maximum Ambient Concentration of a Toxic Air Contaminant | 1 through 5 |
| 5.23 | Categories of Toxic Air Contaminants | 1 through 6 |
| 7.02 | Federal New Source Performance Standards Incorporated by Reference | 1.1, 1.8, 2, 3, 4, 5 |

U3 Equipment:⁴⁵

| Emission Point | Description | Applicable Regulation | Control ID | Stack ID |
|-----------------------|---|--|---|-----------------|
| E5 | One (1) dry bottom, wall-fired boiler, rated capacity 4,204 MMBtu/hr, make Babcock & Wilcox, using pulverized coal as a primary fuel and natural gas as secondary fuel. | 5.00, 5.01, 5.02, 5.14, 5.20, 5.21, 5.22, 5.23, 6.02, 6.42, 6.47, 7.02, 7.06
40 CFR 60, D
40 CFR 64,
40 CFR 72-73,
40 CFR 75-78,
40 CFR 63, UUUUU | C7, C8 ^a ,
C22 | S3 ^a |
| | | | C7, C22,
C29 ^b , C39 ^b | S4 ^b |
| E6 | Four (4) coal silos, make American Air Filter, controlled by a centrifugal dust collector and equipped with four (4) coal mills, make Babcock & Wilcox. | 5.00, 5.01, 5.20, 5.21, 5.22, 5.23, 6.09 | C9 | S7 |

⁴⁵ This unit was modified under construction permit 215-01 (SCR), 225-01 (Ammonia tanks), and 34595-12-C.

| Emission Point | Description | Applicable Regulation | Control ID | Stack ID |
|---|-------------|-----------------------|------------|----------|
| <p>Note a: The existing FGD and stack (C8, S3) will shut down before April 16, 2016, the compliance date when this unit has to comply with 40 CFR 63, Subpart UUUUU.</p> <p>Note b: The new FGD, HAP PM control and existing stack (C29, C39, and S4) will replace C8 and S3. These new control devices need to be in full operation no later than April 16, 2016, the compliance date when this unit has to comply with 40 CFR 63, Subpart UUUUU.⁴⁶</p> | | | | |

U3 Control Devices:

Before compliance with 40 CFR 63, Subpart UUUUU, Unit 3 uses the following control devices:

| ID | Description | Performance Indicator | Stack ID |
|-----|---|--|----------|
| C7 | One (1) custom-built electrostatic precipitator (ESP) for PM control, make Western Precipitator Division | PM emission data from PM CEMS (if PM CEMS is not used to demonstrate compliance) | S3 |
| C8 | One (1) Flue Gas Desulfurization (FGD) unit for SO ₂ control using limestone scrubbing liquor, make Combustion Engineering | N/A ⁴⁷ | |
| C9 | One (1) centrifugal dust collector, make American Air Filter | N/A ⁴⁸ | S7 |
| C22 | One (1) Selective Catalytic Reduction (SCR), make Babcock Borsig Power, and the associated ammonia storage tanks. ⁴⁹ | N/A ⁴⁷ | S3 |

After compliance with 40 CFR 63, Subpart UUUUU, Unit 3 uses the following control devices:

| ID | Description | Performance Indicator | Stack ID |
|----|--|-----------------------|----------|
| C7 | One (1) custom-built electrostatic precipitator (ESP) for PM control, make Western Precipitator Division | N/A ⁴⁷ | S4 |

⁴⁶ On June 20, 2016, LG&E submitted a notification for initial startup of PJFF (C29) and FGD (C39) for U3. These control devices went into service on June 8, 2016.

⁴⁷ This unit is equipped with CEMS for NO_x, SO₂, and PM. According to the District's letter dated November 1, 2005, parametric monitoring of the ESP, FGD, and PJFF for this unit is removed as such monitoring would no longer be required for demonstration of compliance. On July 22, 2016, LG&E reported the normal pressure drop range for U3 PJFF, 2 – 6 inches of water, established during 90 consecutive operating days.

⁴⁸ For the coal silos (E6), the owner or operator has shown, by worst-case calculations without allowance for a control device, that the hourly uncontrolled PM emission standard cannot be exceeded; therefore, no additional monitoring, recordkeeping, or reporting is required to demonstrate compliance with the applicable PM standards specified in Regulation 6.09 and 7.08 is required for this emission point.

⁴⁹ The two ammonia storage tanks are housed in a roof-covered building which has secondary containment for about 66,000 gallons of liquid ammonia (110% of one tank) if a release occurs. The ammonia, under pressure, will be a liquid but will convert to a gas after it is released. The building and tanks contain alarms and leak detection devices. Ammonia from either tank can be used by either Unit 3 or Unit 4 SCR System.

| ID | Description | Performance Indicator | Stack ID |
|-----|--|---|----------|
| C39 | One (1) Flue Gas Desulfurization (FGD) unit for SO ₂ control using limestone scrubbing liquor, make Babcock Power Environmental | N/A ⁴⁷ | |
| C9 | One (1) centrifugal dust collector, make American Air Filter | N/A ⁴⁸ | S7 |
| C22 | One (1) Selective Catalytic Reduction (SCR), make Babcock Borsig Power | N/A ⁴⁷ | S4 |
| C29 | One (1) HAP particulate matter control system, consists of: one (1) powdered activated carbon (PAC) injection system; one (1) dry sorbent injection system; liquid additive system(s); and one (1) pulse-jet fabric filter (PJFF) baghouse used for collecting PM from the boiler and PAC and dry sorbent injection system. PJFF make Clyde Bergemann Power Group, model Structural Pulse Jet. | PM Control:
PM emission data from PM CEMS (if PM CEMS is not used to demonstrate compliance)

Hg control:
(1) Minimum PAC injection rate; ⁵⁰
(2) pH of reactant in FGD, 4.8-6.4;
(3) Hg emission data from Sorbent Traps | |

⁵⁰ In a letter dated October 4, 2016, LG&E demonstrated that in certain circumstance EGUs at this plant can meet the MACT mercury standard at zero PAC injection rate. Therefore the source is allowed to use flexible mercury control measures, including PAC injection or liquid additive system, to achieve compliance with MACT mercury standard.

U3 Specific Conditions

S1. Standards⁵¹ (Regulation 2.16, section 4.1.1)

a. NO_x

- i. The owner or operator shall not allow the average NO_x emissions to exceed the alternate contemporaneous emission limitation of 0.46 lb/MMBtu of heat input on an annual average basis, as specified in Acid Rain Permit No.176-97-AR (R4). (See Acid Rain Permit Attachment) (Regulation 6.47, section 3.5 referencing 40 CFR Part 76)
- ii. The owner or operator shall not exceed the NO_x RACT emissions standard of 0.52 lb/MMBtu of heat input based on a rolling 30-day average. (See NO_x RACT Attachment) (Regulation 6.42, section 4.3)
- iii. When combusting natural gas, the owner or operator shall not cause to be discharged into the atmosphere any gases which contain nitrogen oxides expressed as nitrogen dioxide in excess of 86 ng/J (0.20 lb/MMBtu) heat input on a 3-hour rolling average. (Regulation 7.06, section 6.1.1) (40 CFR 60.44(a)(1))
- iv. When combusting coal, the owner or operator shall not cause to be discharged into the atmosphere any gases which contain nitrogen oxides expressed as nitrogen dioxide in excess of 300 ng/J (0.70 lb/MMBtu) heat input on a 3-hour rolling average. (Regulation 7.06, section 6.1.3) (40 CFR 60.44(a)(3))
- v. When natural gas and coal are burned simultaneously in any combination, the applicable standard is determined by proration using the following equation: (40 CFR 60.44(b))

$$PS_{NOx} = \frac{x(86) + z(300)}{(x + z)}$$

Where,

PS_{NOx} = Prorates standard for NO_x when burning different fuels simultaneously, in ng/J heat input derived from all fossil fuels fired;

x = Percentage of total heat input from gaseous fossil fuel

z = Percentage of total heat from solid fossil fuel (except lignite)

- vi. The owner or operator shall install, maintain, calibrate and operate a continuous emission monitoring system (CEMS) for the measurement or

⁵¹ The emission standards, monitoring, record keeping, and reporting requirements only apply to the boiler E5 (not the coal silos E6) if not indicated.

calculation of nitrogen oxides in the flue gas. (Regulation 6.02, section 6.1.3) (NO_x RACT Plan) (Regulation 6.47, section 3.4 referencing 40 CFR 75.10(a)(2))

b. **SO₂**

- i. The owner or operator shall not exceed 0.8 lb/MMBtu heat input for combustion of natural gas and 1.2 lb/MMBtu heat input for combustion of coal based on a three hour rolling average. (Regulation 7.06, section 5.1.2) (40 CFR 60.43(a)(2))
- ii. When natural gas and coal fuels are burned simultaneously in any combination, the applicable standard is determined by proration using the following equation: (Regulation 2.16, section 4.1.1)

$$PS_{SO_2} = \frac{x(0.8) + z(1.2)}{(x + z)}$$

Where,

PS_{SO₂} = Prorates standard for SO₂ when burning different fuels simultaneously, in lb/MMBtu heat input derived from all fossil fuels fired;

x = Percentage of total heat input from gaseous fossil fuel

z = Percentage of total heat from solid fossil fuel (except lignite)

- iii. Compliance shall be based on the total heat input from all fossil fuels burned, including gaseous fuels. (40 CFR 60.43(c))
- iv. The owner or operator shall comply with the annual SO₂ emission allowances specified in Acid Rain Permit No.176-97-AR (R4). (See Acid Rain Permit Attachment) (Regulation 6.47, section 3.2 referencing 40 CFR Part 73)
- v. The owner or operator shall operate and maintain the FGD, as recommended by the manufacturer, at all times the respective boiler is in operation, including periods of startup, shutdown, and malfunction, in a manner consistent with good air pollution control practice to meet the standards.⁵² (Regulation 2.16, section 4.1.1)
- vi. The owner or operator shall install, maintain, calibrate and operate a continuous emission monitoring system (CEMS) for the measurement of sulfur dioxide in the flue gas. (Regulation 6.02, section 6.1.2) (Regulation 6.47, section 3.4 referencing 40 CFR 75.10(a)(1))

⁵² The SO₂ emissions cannot meet the standards uncontrolled. The owner or operator is required to operate the control devices to meet the applicable limits for SO₂.

c. **PM**

- i. The owner or operator shall not exceed an allowable particulate emission rate of 0.10 lbs/MMBtu heat input based on a three hour rolling average. (Regulation 7.06, section 4.1.2)
- ii. The owner or operator shall not cause to be discharged into the atmosphere from any affected facility any gases that Contain PM in excess of 43 ng/J heat input (0.10 lb/MMBtu) derived from fossil fuel. (40 CFR 60.42(a)(1))
- iii. The owner or operator shall operate and maintain the PM control devices, as recommended by the manufacturer, at all times the respective boiler is in operation, including periods of startup, shutdown, and malfunction, in a manner consistent with good air pollution control practice to meet the standards. Following commissioning of the PJFF baghouses, the owner or operator may elect to operate, turn down, or turn off the ESP to ensure the efficient operation of the PJFF baghouse.⁵³ (Regulation 2.16, section 4.1.1)
- iv. The company shall follow one of the two options below to demonstrate compliance with PM standards:

| Compliance Options | PM | Opacity | Control Device Performance indication |
|--------------------|-------------------|--------------------------------|---------------------------------------|
| Option 1 | Certified PM CEMS | VE/Method 9, or Certified COMS | N/A |
| Option 2 | Annual testing | Certified COMS | PM CEMS |

- v. For the coal silos (E6), the owner or operator shall not exceed an allowable particulate emission rate of 82.95 lbs/hr from four coal silos combined based on actual operating hours in a calendar day.⁵⁴ (Regulation 6.09, section 3.2)

d. **Opacity**

- i. The owner or operator shall not cause the emission into the open air of particulate matter from any indirect heat exchanger which is greater than 20% opacity, except for emissions from an indirect heat exchanger during building a new fire for the period required to bring the boiler up to

⁵³ The PM emissions cannot meet the standards uncontrolled. The owner or operator is required to operate the control devices to meet the applicable limits for PM.

⁵⁴ For the coal silos (E6), the owner or operator has shown, by worst-case calculations without allowance for a control device, that the hourly uncontrolled PM emission standard cannot be exceeded; therefore, no additional monitoring, recordkeeping, or reporting is required to demonstrate compliance with the applicable PM standards specified in Regulation 6.09 and 7.08 is required for this emission point.

operating conditions provided the method used is that recommended by the manufacturer and the time does not exceed the manufacturer's recommendations. (Regulation 7.06, section 4.2)

- ii. The company shall follow one of the two options in the table under Specific Condition S1.c.iv to demonstrate compliance with opacity standards.
- iii. The owner or operator shall not cause the emission into the open air of particulate matter that exhibit greater than 20% opacity except for one six-minute period per hour of not more than 27%. (40 CFR 60.42(a)(2))
- iv. For the coal silos (E6), the owner or operator shall not allow visible emissions to equal or exceed 20% opacity. (Regulation 6.09, section 3.1) (Regulation 7.08, section 3.1.1)

e. **TAC**

- i. The owner or operator shall not allow TAC emissions from boiler E5 to exceed the TAC emission standards determined based upon the EA Demonstration provided to the District.⁵⁵ (Regulation 5.21, section 4.2 and section 4.3) (See Comment 1)

| TAC Name | CAS # | TAC Limits Determination | |
|----------------------------|------------|--------------------------------------|-----------------|
| | | (lbs/yr) | Basis of Limits |
| Naphthalene | 91-20-3 | 22.6 | Controlled PTE |
| Formaldehyde | 50-00-0 | 95.8 | Controlled PTE |
| Hydrogen fluoride | 7664-39-3 | 18,240 | Controlled PTE |
| Arsenic compounds | 7440-38-2 | 363 | Controlled PTE |
| Cadmium compounds | 7440-43-9 | 57.4 | Controlled PTE |
| Chromium VI | 7440-47-3 | 128.7 | Controlled PTE |
| Chromium III | 16065-83-1 | 295 | Controlled PTE |
| Cobalt compounds | 7440-48-4 | 76.5 | Controlled PTE |
| Lead compounds | 7439-92-1 | 453 | Controlled PTE |
| Manganese compounds | 7439-96-5 | 578 | Controlled PTE |
| Nickel compounds | 7440-02-0 | 418 | Controlled PTE |
| Sulfuric acid | 7664-93-9 | 161,726 | Controlled PTE |
| Benzene | 71-43-2 | De minimis values
(See Comment 1) | De Minimis |
| Bromoform | 75-25-2 | | De Minimis |
| Chloroform | 67-66-3 | | De Minimis |
| Methylene chloride | 75-09-2 | | De Minimis |
| Tetrachloroethylene (Perc) | 127-18-4 | | De Minimis |

⁵⁵ This table for TAC emission standards has been revised to exclude Category 3 and 4 TACs for existing sources and use "de minimis values", instead of actual numbers for current de minimis levels, as emission standards.

| TAC Name | CAS # | TAC Limits Determination | |
|-------------------|-----------|--------------------------|-----------------|
| | | (lbs/yr) | Basis of Limits |
| Toluene | 108-88-3 | | De Minimis |
| Xylene | 1330-20-7 | | De Minimis |
| Hydrochloric acid | 7647-01-0 | | De Minimis |

ii. See Plant-wide Requirements S1.b.

f. **HAP** (40 CFR 63, Subpart UUUUU)

The owner or operator shall comply with 40 CFR 63, Subpart UUUUU (See Attachment A) no later than April 16, 2016.⁵⁶

g. **112(r) Regulated Substances** (Regulation 5.15)

If anhydrous ammonia is present at the stationary source in an amount greater than the threshold quantity specified in Regulation 5.15, the owner or operator shall comply with the requirements specified in Regulation 5.15, including the requirement to submit a Risk Management Plan in a method and format as specified by the District and EPA.⁵⁷ (Construction Permit 225-01-C)

h. **BART** (40 CFR 52, Subpart S)

i. The owner or operator shall install sorbent injection to control SO₃ emissions and continue to utilize PJFF baghouse and/or existing ESP to control PM emissions for this unit.⁵⁸ (40 CFR 52.920(e) refer to Kentucky Regional Haze SIP)

ii. The owner or operator shall not allow H₂SO₄ emissions from this unit to exceed 64.3 lbs/hr based on actual operating hours in a calendar day. (40 CFR 52.920(e) refer to Kentucky Regional Haze SIP)

S2. Monitoring and Record Keeping (Regulation 2.16, sections 4.1.9.1 and 4.1.9.2)

⁵⁶ According to 40 CFR 63.9984(b), the compliance date for an existing EGU is April 16, 2015. LG&E requested a year extension and the District has approved the request for the extension per (40 CFR 63.6(i)(4)(i)). Therefore the compliance date for the EGUs under this construction is April 16, 2016.

⁵⁷ The two ammonia storage tanks are housed in a roof-covered building which has secondary containment for about 66,000 gallons of liquid ammonia (110% of one tank) if a release occurs. The ammonia, under pressure, will be a liquid but will convert to a gas after it is released. The building and tanks contain alarms and leak detection devices. Ammonia from either tank can be used by either Unit 3 or Unit 4 SCR System.

⁵⁸ On March 30, 2012, EPA finalized a limited approval and a limited disapproval of the Kentucky state implementation plan submitted on June 25, 2008 and May 28, 2010. According to 40 CFR 52.920(e), the owner or operator shall meet BART requirements summarized in Table 7.5.3-2 of the Commonwealth's May 28, 2010 submittal. A sorbent injection system has been installed for this unit in 2015.

The owner or operator shall maintain the following records for a minimum of 5 years and make the records readily available to the District upon request.

- a. **NO_x**
- i. The owner or operator shall demonstrate compliance with NO_x RACT Plan limits by continuous emissions monitors (CEMs) as specified in the NO_x RACT Plan. (See NO_x RACT Attachment) (Regulation 6.42, section 4.3)
 - ii. The owner or operator shall keep a record identifying all deviations from the requirements of the NO_x RACT Plan.
 - iii. The owner or operator shall comply with the NO_x compliance plan requirements specified in the attached Acid Rain Permit, No.176-97-AR (R4). These record keeping requirements shall be determined in accordance with the Title IV Phase II Acid Rain Permit and are specified in 40 CFR Part 75 Subpart F. (See Appendix A to NO_x RACT Plan) (Regulation 6.47, section 3.4 and 3.5 referencing 40 CFR Parts 75 and 76)
 - iv. The owner or operator shall record on an hourly basis all NO_x emission data specified in 40 CFR Part 75, section 75.57(d). For each NO_x emission rate (in lb/mmBtu) measured by a NO_x-diluent monitoring system, or, if applicable, for each NO_x concentration (in ppm) measured by a NO_x concentration monitoring system used to calculate NO_x mass emissions under 40 CFR 75.71(a)(2), record the following data as measured and reported from the certified primary monitor, certified back-up monitor, or other approved method of emissions determination:
 - 1) Component-system identification code, as provided in 40 CFR 75.53 (including identification code for the moisture monitoring system, if applicable); (40 CFR 75.57(d)(1))
 - 2) Date and hour; (40 CFR 75.57(d)(2))
 - 3) Hourly average NO_x concentration (ppm, rounded to the nearest tenth) and hourly average NO_x concentration (ppm, rounded to the nearest tenth) adjusted for bias if bias adjustment factor required, as provided in 40 CFR 75.24(d); (40 CFR 75.57(d)(3))
 - 4) Hourly average diluent gas concentration (for NO_x -diluent monitoring systems, only, in units of percent O₂ or percent CO₂, rounded to the nearest tenth); (40 CFR 75.57(d)(4))
 - 5) If applicable, the hourly average moisture content of the stack gas (percent H₂O, rounded to the nearest tenth). If the continuous moisture monitoring system consists of wet- and dry-basis oxygen

- analyzers, also record both the hourly wet- and dry-basis oxygen readings (in percent O₂, rounded to the nearest tenth); (40 CFR 75.57(d)(5))
- 6) Hourly average NO_x emission rate (for NO_x -diluent monitoring systems only, in units of lb/mmBtu, rounded to the nearest thousandth); (40 CFR 75.57(d)(6))
 - 7) Hourly average NO_x emission rate (for NO_x -diluent monitoring systems only, in units of lb/mmBtu, rounded to the nearest thousandth), adjusted for bias if bias adjustment factor is required, as provided in 40 CFR 75.24(d). The requirement to report hourly NO_x emission rates to the nearest thousandth shall not affect NO_x compliance determinations under part 76 of this chapter; compliance with each applicable emission limit under part 76 shall be determined to the nearest hundredth pound per million Btu; (40 CFR 75.57(d)(7))
 - 8) Percent monitoring system data availability (recorded to the nearest tenth of a percent), for the NO_x -diluent or NO_x concentration monitoring system, and, if applicable, for the moisture monitoring system, calculated pursuant to 40 CFR 75.32; (40 CFR 75.57(d)(8))
 - 9) Method of determination for hourly average NO_x emission rate or NO_x concentration and (if applicable) for the hourly average moisture percentage, using Codes 1–55 in Table 4a of 40 CFR 75.57; and (40 CFR 75.57(d)(9))
 - 10) Identification codes for emissions formulas used to derive hourly average NO_x emission rate and total NO_x mass emissions, as provided in 40 CFR 75.53, and (if applicable) the F-factor used to convert NO_x concentrations into emission rates. (40 CFR 75.57(d)(10))
- v. A CEMS for measuring either oxygen (O₂) or carbon dioxide (CO₂) in the flue gases shall be installed, calibrated, maintained, and operated by the owner or operator. The owner or operator shall use the conversion procedures specified in Regulation 7.06, sections 7.5 and 7.6 for NO_x, SO₂, and PM. (Regulation 7.06, section 7.4)
 - vi. The owner or operator shall monitor the NO_x emissions, the NO_x allowances, as specified in the Clean Air Interstate Rule or the applicable NO_x cap and trade program(s) in effect.

vii. For performance evaluations under 40 CFR 60.13(c) and calibration checks under 40 CFR 60.13(d), the following procedures shall be used: (40 CFR 60.45(c))

- 1) Methods 6, 7, and 3B of appendix A of this part, as applicable, shall be used for the performance evaluations of SO₂ and NO_x continuous monitoring systems. Acceptable alternative methods for Methods 6, 7, and 3B of appendix A of this part are given in 40 CFR 60.46(d). (40 CFR 60.45(c)(1))
- 2) Sulfur dioxide or nitric oxide, as applicable, shall be used for preparing calibration gas mixtures under Performance Specification 2 of appendix B to this part. (40 CFR 60.45(c)(2))
- 3) For affected facilities burning fossil fuel(s), the span value for a continuous monitoring system measuring the opacity of emissions shall be 80, 90, or 100 percent. For a continuous monitoring system measuring sulfur oxides or NO_x the span value shall be determined using one of the following procedures: (40 CFR 60.45(c)(3))
 - (a) Except as provided under paragraph 40 CFR 60.45(c)(3)(ii), SO₂ and NO_x span values shall be determined as follows: (40 CFR 60.45(c)(3)(i))

| Fossil fuel | In parts per million | |
|-------------|--------------------------------|--------------------------------|
| | Span value for SO ₂ | Span value for NO _x |
| Gas | Not Applicable | 500. |
| Liquid | 1,000 | 500. |
| Solid | 1,500 | 1,000. |

(b) As an alternative to meeting the requirements of paragraph 40 CFR 60.45(c)(3)(i), the owner or operator of an affected facility may elect to use the SO₂ and NO_x span values determined according to sections 2.1.1 and 2.1.2 in appendix A to part 75 of this chapter. (40 CFR 60.45(c)(3)(ii))

viii. The conversion procedures in 40 CFR 60.45(e) and (f) shall be used to convert the continuous monitoring data into units of the applicable standards. (40 CFR 60.45(e) and (f))

- 1) For any CEMS installed under paragraph (a) of this section, the following conversion procedures shall be used to convert the continuous monitoring data into units of the applicable standards (ng/J, lb/MMBtu): (40 CFR 60.45(e))

- (a) When a CEMS for measuring O₂ is selected, the measurement of the pollutant concentration and O₂ concentration shall each be on a consistent basis (wet or dry). Alternative procedures approved by the Administrator shall be used when measurements are on a wet basis. When measurements are on a dry basis, the following conversion procedure shall be used: (40 CFR 60.45(e)(1))

$$E = CF \left(\frac{20.9}{(20.9 - \%O_2)} \right)$$

Where E, C, F, and %O₂ are determined under paragraph (f) of this section.

- (b) When a CEMS for measuring CO₂ is selected, the measurement of the pollutant concentration and CO₂ concentration shall each be on a consistent basis (wet or dry) and the following conversion procedure shall be used: (40 CFR 60.45(e)(2))

$$E = CF_c \left(\frac{100}{\%CO_2} \right)$$

Where E, C, F_c and %CO₂ are determined under paragraph (f) of this section.

- 2) The values used in the equations under paragraphs (e)(1) and (2) of this section are derived as follows: (40 CFR 60.45(f))

- (a) E = pollutant emissions, ng/J (lb/MMBtu). (40 CFR 60.45(f)(1))
- (b) C = pollutant concentration, ng/dscm (lb/dscf), determined by multiplying the average concentration (ppm) for each one-hour period by 4.15×10^{-4} M ng/dscm per ppm (2.59×10^{-9} M lb/dscf per ppm) where M = pollutant molecular weight, g/g-mole (lb/lb-mole). M = 64.07 for SO₂ and 46.01 for NO_x. (40 CFR 60.45(f)(2))
- (c) %O₂, %CO₂ = O₂ or CO₂ volume (expressed as percent), determined with equipment specified under paragraph (a) of this section. (40 CFR 60.45(f)(3))
- (d) F, F_c = a factor representing a ratio of the volume of dry flue gases generated to the calorific value of the fuel combusted (F), and a factor representing a ratio of the volume of CO₂

generated to the calorific value of the fuel combusted (F_c), respectively. Values of F and F_c are given as follows: (40 CFR 60.45(f)(4))

- (i) For anthracite coal as classified according to ASTM D388 (incorporated by reference, see 40 CFR 60.17), $F = 2,723 \times 10^{-7}$ dscm/J (10,140 dscf/MMBtu) and $F_c = 0.532 \times 10^{-7}$ scm CO₂/J (1,980 scf CO₂/MMBtu). (40 CFR 60.45(f)(4)(i))
 - (ii) For subbituminous and bituminous coal as classified according to ASTM D388 (incorporated by reference, see 40 CFR 60.17), $F = 2.637 \times 10^{-7}$ dscm/J (9,820 dscf/MMBtu) and $F_c = 0.486 \times 10^{-7}$ scm CO₂/J (1,810 scf CO₂/MMBtu). (40 CFR 60.45(f)(4)(ii))
 - (iii) For liquid fossil fuels including crude, residual, and distillate oils, $F = 2.476 \times 10^{-7}$ dscm/J (9,220 dscf/MMBtu) and $F_c = 0.384 \times 10^{-7}$ scm CO₂/J (1,430 scf CO₂/MMBtu). (40 CFR 60.45(f)(4)(iii))
 - (iv) For gaseous fossil fuels, $F = 2.347 \times 10^{-7}$ dscm/J (8,740 dscf/MMBtu). For natural gas, propane, and butane fuels, $F_c = 0.279 \times 10^{-7}$ scm CO₂/J (1,040 scf CO₂/MMBtu) for natural gas, 0.322×10^{-7} scm CO₂/J (1,200 scf CO₂/MMBtu) for propane, and 0.338×10^{-7} scm CO₂/J (1,260 scf CO₂/MMBtu) for butane. (40 CFR 60.45(f)(4)(iv))
 - (v) For bark $F = 2.589 \times 10^{-7}$ dscm/J (9,640 dscf/MMBtu) and $F_c = 0.500 \times 10^{-7}$ scm CO₂/J (1,840 scf CO₂/MMBtu). For wood residue other than bark $F = 2.492 \times 10^{-7}$ dscm/J (9,280 dscf/MMBtu) and $F_c = 0.494 \times 10^{-7}$ scm CO₂/J (1,860 scf CO₂/MMBtu). (40 CFR 60.45(f)(4)(v))
 - (vi) For lignite coal as classified according to ASTM D388 (incorporated by reference, see 40 CFR 60.17), $F = 2.659 \times 10^{-7}$ dscm/J (9,900 dscf/MMBtu) and $F_c = 0.516 \times 10^{-7}$ scm CO₂/J (1,920 scf CO₂/MMBtu). (40 CFR 60.45(f)(4)(vi))
- (e) The owner or operator may use the following equation to determine an F factor (dscm/J or dscf/MMBtu) on a dry basis (if it is desired to calculate F on a wet basis, consult the Administrator) or F_c factor (scm CO₂/J, or scf CO₂/MMBtu) on either basis in lieu of the F or F_c factors specified in paragraph (f)(4) of this section: (40 CFR 60.45(f)(5))

$$F = 10^6 \frac{[227.2 (\%H) + 95.5 (\%C) + 35.6 (\%S) + 8.7 (\%N) - 28.7 (\%O)]}{GCV}$$

$$F_c = \frac{2.0 \times 10^{-3} (\%C)}{GCV \text{ (SI units)}}$$

$$F = 10^6 \frac{[3.64 (\%H) + 1.53 (\%C) + 0.57 (\%S) + 0.14 (\%N) - 0.46 (\%O)]}{GCV \text{ (English units)}}$$

$$F_c = \frac{20.0 (\%C)}{GCV \text{ (SI units)}}$$

$$F_c = \frac{321 \times 10^3 (\%C)}{GCV \text{ (English units)}}$$

- (i) %H, %C, %S, %N, and %O are content by weight of hydrogen, carbon, sulfur, nitrogen, and O₂(expressed as percent), respectively, as determined on the same basis as GCV by ultimate analysis of the fuel fired, using ASTM D3178 or D3176 (solid fuels), or computed from results using ASTM D1137, D1945, or D1946 (gaseous fuels) as applicable. (These five methods are incorporated by reference, see 40 CFR 60.17.) (40 CFR 60.45(f)(5)(i))
- (ii) GVC is the gross calorific value (kJ/kg, Btu/lb) of the fuel combusted determined by the ASTM test methods D2015 or D5865 for solid fuels and D1826 for gaseous fuels as applicable. (These three methods are incorporated by reference, see 40 CFR 60.17.) (40 CFR 60.45(f)(5)(ii))
- (iii) For affected facilities which fire both fossil fuels and nonfossil fuels, the F or F_c value shall be subject to the Administrator's approval. (40 CFR 60.45(f)(5)(iii))
- (f) For affected facilities firing combinations of fossil fuels or fossil fuels and wood residue, the F or F_c factors determined by paragraphs (f)(4) or (f)(5) of this section shall be prorated in accordance with the applicable formula as follows: (40 CFR 60.45(f)(6))

$$F = \sum_{i=1}^n X_i F_i \quad \text{or} \quad F_c = \sum_{i=1}^n X_i (F_c)_i$$

Where:

X_i = Fraction of total heat input derived from each type of fuel (e.g. natural gas, bituminous coal, wood residue, etc.);

F_i or $(F_c)_i$ = Applicable F or F_c factor for each fuel type determined in accordance with paragraphs (f)(4) and (f)(5) of this section; and

n = Number of fuels being burned in combination.

b. **SO₂**

- i. The owner or operator shall maintain hourly records of SO₂ emissions as specified in Regulation 6.02, section 6.1.2.
- ii. The owner or operator shall record on an hourly basis all SO₂ emission data specified in 40 CFR 75.57(c):
 - 1) For SO₂ concentration during unit operation, as measured and reported from each certified primary monitor, certified back-up monitor, or other approved method of emissions determination: (40 CFR 75.57(c)(1))
 - (a) Component-system identification code, as provided in 40 CFR 75.53; (40 CFR 75.57(c)(1)(i))
 - (b) Date and hour; (40 CFR 75.57(c)(1)(ii))
 - (c) Hourly average SO₂ concentration (ppm, rounded to the nearest tenth); (40 CFR 75.57(c)(1)(iii))
 - (d) Hourly average SO₂ concentration (ppm, rounded to the nearest tenth), adjusted for bias if bias adjustment factor is required, as provided in 40 CFR 75.24(d); (40 CFR 75.57(c)(1)(iv))
 - (e) Percent monitor data availability (recorded to the nearest tenth of a percent), calculated pursuant to 40 CFR 75.32; and (40 CFR 75.57(c)(1)(v))
 - (f) Method of determination for hourly average SO₂ concentration using Codes 1–55 in Table 4a of 40 CFR 75.57. (40 CFR 75.57(c)(1)(vi))
 - 2) For flow rate during unit operation, as measured and reported from each certified primary monitor, certified back-up monitor, or other approved method of emissions determination: (40 CFR 75.57(c)(2))

- (a) Component-system identification code, as provided in 40 CFR 75.53; (40 CFR 75.57(c)(2)(i))
 - (b) Date and hour; (40 CFR 75.57(c)(2)(ii))
 - (c) Hourly average volumetric flow rate (in scfh, rounded to the nearest thousand); (40 CFR 75.57(c)(2)(iii))
 - (d) Hourly average volumetric flow rate (in scfh, rounded to the nearest thousand), adjusted for bias if bias adjustment factor required, as provided in 40 CFR 75.24(d); (40 CFR 75.57(c)(2)(iv))
 - (e) Percent monitor data availability (recorded to the nearest tenth of a percent) for the flow monitor, calculated pursuant to 40 CFR 75.32; and (40 CFR 75.57(c)(2)(v))
 - (f) Method of determination for hourly average flow rate using Codes 1–55 in Table 4a of 40 CFR 75.57. (40 CFR 75.57(c)(2)(vi))
- 3) For SO₂ mass emission rate during unit operation, as measured and reported from the certified primary monitoring system(s), certified redundant or non-redundant back-up monitoring system(s), or other approved method(s) of emissions determination: (40 CFR 75.57(c)(4))
- (a) Date and hour; (40 CFR 75.57(c)(4)(i))
 - (b) Hourly SO₂ mass emission rate (lb/hr, rounded to the nearest tenth); (40 CFR 75.57(c)(4)(ii))
 - (c) Hourly SO₂ mass emission rate (lb/hr, rounded to the nearest tenth), adjusted for bias if bias adjustment factor required, as provided in 40 CFR 75.24(d); and (40 CFR 75.57(c)(4)(iii))
 - (d) Identification code for emissions formula used to derive hourly SO₂ mass emission rate from SO₂ concentration and flow and (if applicable) moisture data in paragraphs (c)(1), (c)(2), and (c)(3) of 40 CFR 75.57, as provided in 40 CFR 75.53. (40 CFR 75.57(c)(4)(iv))

iii. For performance evaluations under 40 CFR 60.13(c) and calibration checks under 40 CFR 60.13(d), the following procedures shall be used: (40 CFR 60.45(c))

- 1) Methods 6, 7, and 3B of appendix A of this part, as applicable, shall be used for the performance evaluations of SO₂ and NO_x continuous monitoring systems. Acceptable alternative methods for Methods 6, 7, and 3B of appendix A of this part are given in 40 CFR 60.46(d). (40 CFR 60.45(c)(1))
- 2) Sulfur dioxide or nitric oxide, as applicable, shall be used for preparing calibration gas mixtures under Performance Specification 2 of appendix B to this part. (40 CFR 60.45(c)(2))
- 3) For affected facilities burning fossil fuel(s), the span value for a continuous monitoring system measuring the opacity of emissions shall be 80, 90, or 100 percent. For a continuous monitoring system measuring sulfur oxides or NO_x the span value shall be determined using one of the following procedures: (40 CFR 60.45(c)(3))
 - (a) Except as provided under paragraph 40 CFR 60.45(c)(3)(ii), SO₂ and NO_x span values shall be determined as follows: (40 CFR 60.45(c)(3)(i))

| Fossil fuel | In parts per million | |
|-------------|--------------------------------|--------------------------------|
| | Span value for SO ₂ | Span value for NO _x |
| Gas | Not Applicable | 500. |
| Liquid | 1,000 | 500. |
| Solid | 1,500 | 1,000. |

(b) As an alternative to meeting the requirements of paragraph 40 CFR 60.45(c)(3)(i), the owner or operator of an affected facility may elect to use the SO₂ and NO_x span values determined according to sections 2.1.1 and 2.1.2 in appendix A to part 75 of this chapter. (40 CFR 60.45(c)(3)(ii))

iv. The conversion procedures in 40 CFR 60.45(e) and (f) shall be used to convert the continuous monitoring data into units of the applicable standards. (40 CFR 60.45(e) and (f))

- 1) For any CEMS installed under paragraph (a) of this section, the following conversion procedures shall be used to convert the continuous monitoring data into units of the applicable standards (ng/J, lb/MMBtu): (40 CFR 60.45(e))

- (a) When a CEMS for measuring O₂ is selected, the measurement of the pollutant concentration and O₂ concentration shall each be on a consistent basis (wet or dry). Alternative procedures approved by the Administrator shall be used when measurements are on a wet basis. When measurements are on a dry basis, the following conversion procedure shall be used: (40 CFR 60.45(e)(1))

$$E = CF \left(\frac{20.9}{(20.9 - \%O_2)} \right)$$

Where E, C, F, and %O₂ are determined under paragraph (f) of this section.

- (b) When a CEMS for measuring CO₂ is selected, the measurement of the pollutant concentration and CO₂ concentration shall each be on a consistent basis (wet or dry) and the following conversion procedure shall be used: (40 CFR 60.45(e)(2))

$$E = CF_c \left(\frac{100}{\%CO_2} \right)$$

Where E, C, F_c and %CO₂ are determined under paragraph (f) of this section.

- 2) The values used in the equations under paragraphs (e)(1) and (2) of this section are derived as follows: (40 CFR 60.45(f))

- (a) E = pollutant emissions, ng/J (lb/MMBtu). (40 CFR 60.45(f)(1))
- (b) C = pollutant concentration, ng/dscm (lb/dscf), determined by multiplying the average concentration (ppm) for each one-hour period by 4.15×10^4 M ng/dscm per ppm (2.59×10^{-9} M lb/dscf per ppm) where M = pollutant molecular weight, g/g-mole (lb/lb-mole). M = 64.07 for SO₂ and 46.01 for NO_x. (40 CFR 60.45(f)(2))
- (c) %O₂, %CO₂ = O₂ or CO₂ volume (expressed as percent), determined with equipment specified under paragraph (a) of this section. (40 CFR 60.45(f)(3))
- (d) F, F_c = a factor representing a ratio of the volume of dry flue gases generated to the calorific value of the fuel combusted (F), and a factor representing a ratio of the volume of CO₂

generated to the calorific value of the fuel combusted (F_c), respectively. Values of F and F_c are given as follows: (40 CFR 60.45(f)(4))

- (i) For anthracite coal as classified according to ASTM D388 (incorporated by reference, see 40 CFR 60.17), $F = 2,723 \times 10^{-7}$ dscm/J (10,140 dscf/MMBtu) and $F_c = 0.532 \times 10^{-7}$ scm CO₂/J (1,980 scf CO₂/MMBtu). (40 CFR 60.45(f)(4)(i))
 - (ii) For subbituminous and bituminous coal as classified according to ASTM D388 (incorporated by reference, see 40 CFR 60.17), $F = 2.637 \times 10^{-7}$ dscm/J (9,820 dscf/MMBtu) and $F_c = 0.486 \times 10^{-7}$ scm CO₂/J (1,810 scf CO₂/MMBtu). (40 CFR 60.45(f)(4)(ii))
 - (iii) For liquid fossil fuels including crude, residual, and distillate oils, $F = 2.476 \times 10^{-7}$ dscm/J (9,220 dscf/MMBtu) and $F_c = 0.384 \times 10^{-7}$ scm CO₂/J (1,430 scf CO₂/MMBtu). (40 CFR 60.45(f)(4)(iii))
 - (iv) For gaseous fossil fuels, $F = 2.347 \times 10^{-7}$ dscm/J (8,740 dscf/MMBtu). For natural gas, propane, and butane fuels, $F_c = 0.279 \times 10^{-7}$ scm CO₂/J (1,040 scf CO₂/MMBtu) for natural gas, 0.322×10^{-7} scm CO₂/J (1,200 scf CO₂/MMBtu) for propane, and 0.338×10^{-7} scm CO₂/J (1,260 scf CO₂/MMBtu) for butane. (40 CFR 60.45(f)(4)(iv))
 - (v) For bark $F = 2.589 \times 10^{-7}$ dscm/J (9,640 dscf/MMBtu) and $F_c = 0.500 \times 10^{-7}$ scm CO₂/J (1,840 scf CO₂/MMBtu). For wood residue other than bark $F = 2.492 \times 10^{-7}$ dscm/J (9,280 dscf/MMBtu) and $F_c = 0.494 \times 10^{-7}$ scm CO₂/J (1,860 scf CO₂/MMBtu). (40 CFR 60.45(f)(4)(v))
 - (vi) For lignite coal as classified according to ASTM D388 (incorporated by reference, see 40 CFR 60.17), $F = 2.659 \times 10^{-7}$ dscm/J (9,900 dscf/MMBtu) and $F_c = 0.516 \times 10^{-7}$ scm CO₂/J (1,920 scf CO₂/MMBtu). (40 CFR 60.45(f)(4)(vi))
- (e) The owner or operator may use the following equation to determine an F factor (dscm/J or dscf/MMBtu) on a dry basis (if it is desired to calculate F on a wet basis, consult the Administrator) or F_c factor (scm CO₂/J, or scf CO₂/MMBtu) on either basis in lieu of the F or F_c factors specified in paragraph (f)(4) of this section: (40 CFR 60.45(f)(5))

$$F = 10^6 \frac{[227.2 (\%H) + 95.5 (\%C) + 35.6 (\%S) + 8.7 (\%N) - 28.7 (\%O)]}{GCV}$$

$$F_c = \frac{2.0 \times 10^{-3} (\%C)}{GCV \text{ (SI units)}}$$

$$F = 10^6 \frac{[3.64 (\%H) + 1.53 (\%C) + 0.57 (\%S) + 0.14 (\%N) - 0.46 (\%O)]}{GCV \text{ (English units)}}$$

$$F_c = \frac{20.0 (\%C)}{GCV \text{ (SI units)}}$$

$$F_c = \frac{321 \times 10^3 (\%C)}{GCV \text{ (English units)}}$$

- (i) %H, %C, %S, %N, and %O are content by weight of hydrogen, carbon, sulfur, nitrogen, and O₂(expressed as percent), respectively, as determined on the same basis as GCV by ultimate analysis of the fuel fired, using ASTM D3178 or D3176 (solid fuels), or computed from results using ASTM D1137, D1945, or D1946 (gaseous fuels) as applicable. (These five methods are incorporated by reference, see 40 CFR 60.17.) (40 CFR 60.45(f)(5)(i))
- (ii) GVC is the gross calorific value (kJ/kg, Btu/lb) of the fuel combusted determined by the ASTM test methods D2015 or D5865 for solid fuels and D1826 for gaseous fuels as applicable. (These three methods are incorporated by reference, see 40 CFR 60.17.) (40 CFR 60.45(f)(5)(ii))
- (iii) For affected facilities which fire both fossil fuels and nonfossil fuels, the F or F_c value shall be subject to the Administrator's approval. (40 CFR 60.45(f)(5)(iii))
- (f) For affected facilities firing combinations of fossil fuels or fossil fuels and wood residue, the F or F_c factors determined by paragraphs (f)(4) or (f)(5) of this section shall be prorated in accordance with the applicable formula as follows: (40 CFR 60.45(f)(6))

$$F = \sum_{i=1}^n X_i F_i \quad \text{or} \quad F_c = \sum_{i=1}^n X_i (F_c)_i$$

Where:

X_i = Fraction of total heat input derived from each type of fuel (e.g. natural gas, bituminous coal, wood residue, etc.);

F_i or $(F_c)_i$ = Applicable F or F_c factor for each fuel type determined in accordance with paragraphs (f)(4) and (f)(5) of this section; and

n = Number of fuels being burned in combination.

c. **PM**

i. The company shall follow one of the two options below to demonstrate compliance with PM standards:

- 1) Option 1: the owner or operator shall install, maintain, calibrate, and operate a PM CEMS for each steam generating unit.^{59,60} (Regulation 2.16, section 4.1.1) (40 CFR 64)
 - (a) The use of PM CEMS as the measurement technique must be appropriate for the stack conditions.
 - (b) The PM CEMS must be installed, operated and maintained in accordance with the manufacturer's recommendations, applicable requirements in Subpart D, and General Provisions in 40 CFR 60.7 – 60.13.
 - (c) The PM CEMS must be certified in accordance with Performance Specification 11, Specifications and Test Procedures for Particulate Matter Continuous Emission Monitoring Systems at Stationary Sources, found in 40 CFR 60, Appendix B.
 - (d) A quality assurance/quality control program must be implemented in accordance with procedures in 40 CFR 60, Appendix F, Procedure 2 (Quality Assurance Requirements

⁵⁹ According to LG&E's request, PM CEMS have been installed, calibrated, maintained, and operated for Unit 1. LG&E requested permission to remove COMS for Unit 3 and 4 under provisions in 40 CFR 60.13(i)(1), "Alternative monitoring requirements when installation of a continuous monitoring system or monitoring device specified by this part would not provide accurate measurements due to liquid water or other interferences caused by substances in the effluent gases." LG&E's proposal for Unit 3 and 4 was accepted in a letter from EPA dated Feb. 28, 2007. The District accordingly approved LG&E's request for removing COMS for Unit 1 and 2 providing PM CEMS are appropriately installed for these units.

⁶⁰ The coal-fired boilers are subject to 40 CFR Part 64 - Compliance Assurance Monitoring (CAM) for Major Stationary Source since SO₂, PM, and NO_x emissions from each of the boilers may be greater than the major source threshold and control devices are required to achieve compliance with standards. On 5/21/2014, LG&E submitted a revised CAM Plan in which SO₂ and NO_x CEMS are used for compliance demonstration. PM CEMS is used to demonstrate compliance or provide an indication of continuous PM control.

for Particulate Matter Continuous Emission Monitoring Systems at Stationary Sources).

- (e) Compliance with the particulate matter emission limit promulgated at 40 CFR 60.42(a) will be based upon three-hour rolling average periods during source operation.
 - (f) LG&E must comply with all applicable recordkeeping and reporting requirements under Subpart D and under the General Provisions in 40 CFR 60.7 – 60.13. Quarterly excess emission reports must be submitted, and PM excess emissions shall be reported based upon three-hour rolling averages during source operation.
- 2) Option 2: the owner or operator shall conduct an annual EPA Reference Method 5 performance test following the testing requirements in Attachment B, Specific Condition b.ii.
- ii. If certified PM CEMS (Option 1) is used to demonstrate compliance with PM standards, the owner or operator shall record on an hourly basis all PM emission data, in lb/MMBtu, from PM CEMS.⁶¹ (40 CFR 64)
 - iii. If annual PM testing (Option 2) is used to demonstrate compliance with PM standards, the owner or operator shall use PM CEMS as a performance indicator of continuous normal operation of the PM control devices and do the following:⁶¹ (40 CFR 64)
 - 1) The owner or operator shall monitor and record all PM emission data from PM CEMS, which is used as the indicator of normal operation of the PM control devices.
 - 2) The owner or operator shall maintain daily records of any periods of time where the process was operating and the PM control devices were not operating or a declaration that the PM control devices operated at all times that day when the process was operating.
 - 3) If there is any time that the PM control devices are bypassed or not in operation when the process is operating, then the owner or operator shall keep a record of the following for each bypass event:

⁶¹ The coal-fired boilers are subject to 40 CFR Part 64 - Compliance Assurance Monitoring (CAM) for Major Stationary Source since SO₂, PM, and NO_x emissions from each of the boilers may be greater than the major source threshold and control devices are required to achieve compliance with standards. On 5/21/2014, LG&E submitted a revised CAM Plan in which SO₂ and NO_x CEMS are used for compliance demonstration. PM CEMS is used to demonstrate compliance or provide an indication of continuous PM control.

- (a) Date;
- (b) Start time and stop time;
- (c) Identification of the control devices and process equipment;
- (d) PM emissions during the bypass in lb/hr;
- (e) Summary of the cause or reason for each bypass event;
- (f) Corrective action taken to minimize the extent or duration of the bypass event; and
- (g) Measures implemented to prevent reoccurrence of the situation that resulted in the bypass event.

d. Opacity

- i. If certified COMS is used to demonstrate compliance with opacity standards, the owner or operator shall record on an hourly basis all opacity from COMS.⁶²
- ii. If VE/Method 9 is used to demonstrate compliance with opacity standards, in order for the owner or operator to use its VE observations to satisfy the opacity monitoring requirement, the following conditions must be met:⁶² (EPA Letter, 2007)
 - 1) On a weekly basis, the owner or operator shall attempt to perform VE observations in accordance with procedures in EPA Method 9.
 - 2) On the weeks when it is possible to collect unit-specific VE data, at least one hour of Method 9 data shall be collected for each unit.
 - 3) Records of the Method 9 readings shall be submitted with the quarterly excess emission reports for PM emissions.
- iii. The owner or operator shall keep a record of every Method 9 test performed or the reason why it could not be performed that day.
- iv. An owner or operator of an affected facility subject to an opacity standard under 40 CFR 60.42 that elects to not use a COMS because the affected facility burns only fuels as specified under paragraph (b)(1) of 40 CFR 60.45, monitors PM emissions as specified under paragraph (b)(5) of 40 CFR 60.45, or monitors CO emissions as specified under paragraph (b)(6) of 40 CFR 60.45, shall conduct a performance test using Method 9 of

⁶² According to LG&E's request, PM CEMS have been installed, calibrated, maintained, and operated for Unit 1. LG&E requested permission to remove COMS for Unit 3 and 4 under provisions in 40 CFR 60.13(i)(1), "Alternative monitoring requirements when installation of a continuous monitoring system or monitoring device specified by this part would not provide accurate measurements due to liquid water or other interferences caused by substances in the effluent gases." LG&E's proposal for Unit 3 and 4 was accepted in a letter from EPA dated Feb. 28, 2007. The District accordingly approved LG&E's request for removing COMS for Unit 1 and 2 providing PM CEMS are appropriately installed for these units.

appendix A-4 of this part and the procedures in 40 CFR 60.11 to demonstrate compliance with the applicable limit in 40 CFR 60.42 by April 29, 2011 or within 45 days after stopping use of an existing COMS, whichever is later, and shall comply with either paragraph (b)(7)(i), (b)(7)(ii), or (b)(7)(iii) of 40 CFR 60.45. The observation period for Method 9 of appendix A-4 of this part performance tests may be reduced from 3 hours to 60 minutes if all 6-minute averages are less than 10 percent and all individual 15-second observations are less than or equal to 20 percent during the initial 60 minutes of observation. The permitting authority may exempt owners or operators of affected facilities burning only natural gas from the opacity monitoring requirements. (40 CFR 60.45(b)(7))

- 1) Except as provided in paragraph (b)(7)(ii) or (b)(7)(iii) of 40 CFR 60.45, the owner or operator shall conduct subsequent Method 9 of appendix A-4 of this part performance tests using the procedures in paragraph (b)(7) of 40 CFR 60.45 according to the applicable schedule in paragraphs (b)(7)(i)(A) through (b)(7)(i)(D) of 40 CFR 60.45, as determined by the most recent Method 9 of appendix A-4 of this part performance test results.
 - (a) If no visible emissions are observed, a subsequent Method 9 of appendix A-4 of this part performance test must be completed within 12 calendar months from the date that the most recent performance test was conducted; (40 CFR 60.45(b)(7)(i)(A))
 - (b) If visible emissions are observed but the maximum 6-minute average opacity is less than or equal to 5 percent, a subsequent Method 9 of appendix A-4 of this part performance test must be completed within 6 calendar months from the date that the most recent performance test was conducted; (40 CFR 60.45(b)(7)(i)(B))
 - (c) If the maximum 6-minute average opacity is greater than 5 percent but less than or equal to 10 percent, a subsequent Method 9 of appendix A-4 of this part performance test must be completed within 3 calendar months from the date that the most recent performance test was conducted; or (40 CFR 60.45(b)(7)(i)(C))
 - (d) If the maximum 6-minute average opacity is greater than 10 percent, a subsequent Method 9 of appendix A-4 of this part performance test must be completed within 45 calendar days from the date that the most recent performance test was conducted. (40 CFR 60.45(b)(7)(i)(D))

- 2) If the maximum 6-minute opacity is less than 10 percent during the most recent Method 9 of appendix A-4 of this part performance test, the owner or operator may, as an alternative to performing subsequent Method 9 of appendix A-4 of this part performance test, elect to perform subsequent monitoring using Method 22 of appendix A-7 of this part according to the procedures specified in paragraphs (b)(7)(ii)(A) and (B) of 40 CFR 60.45. (40 CFR 60.45(b)(7)(ii))
- (a) The owner or operator shall conduct 10 minute observations (during normal operation) each operating day the affected facility fires fuel for which an opacity standard is applicable using Method 22 of appendix A-7 of this part and demonstrate that the sum of the occurrences of any visible emissions is not in excess of 5 percent of the observation period (i.e., 30 seconds per 10 minute period). If the sum of the occurrence of any visible emissions is greater than 30 seconds during the initial 10 minute observation, immediately conduct a 30 minute observation. If the sum of the occurrence of visible emissions is greater than 5 percent of the observation period (i.e., 90 seconds per 30 minute period), the owner or operator shall either document and adjust the operation of the facility and demonstrate within 24 hours that the sum of the occurrence of visible emissions is equal to or less than 5 percent during a 30 minute observation (i.e., 90 seconds) or conduct a new Method 9 of appendix A-4 of this part performance test using the procedures in paragraph (b)(7) of 40 CFR 60.45 within 45 calendar days according to the requirements in 40 CFR 60.46(b)(3). (40 CFR 60.45(b)(7)(ii)(A))
- (b) If no visible emissions are observed for 30 operating days during which an opacity standard is applicable, observations can be reduced to once every 7 operating days during which an opacity standard is applicable. If any visible emissions are observed, daily observations shall be resumed. (40 CFR 60.45(b)(7)(ii)(B))
- 3) If the maximum 6-minute opacity is less than 10 percent during the most recent Method 9 of appendix A-4 of this part performance test, the owner or operator may, as an alternative to performing subsequent Method 9 of appendix A-4 performance tests, elect to perform subsequent monitoring using a digital opacity compliance system according to a site-specific monitoring plan approved by the Administrator. The observations shall be similar, but not necessarily identical, to the requirements in paragraph (b)(7)(ii) of

40 CFR 60.45. For reference purposes in preparing the monitoring plan, see OAQPS “Determination of Visible Emission Opacity from Stationary Sources Using Computer-Based Photographic Analysis Systems.” This document is available from the U.S. Environmental Protection Agency (U.S. EPA); Office of Air Quality and Planning Standards; Sector Policies and Programs Division; Measurement Policy Group (D243-02), Research Triangle Park, NC 27711. This document is also available on the Technology Transfer Network (TTN) under Emission Measurement Center Preliminary Methods. (40 CFR 60.45(b)(7)(iii))

- v. The owner or operator of an affected facility subject to the opacity limits in 40 CFR 60.42 that elects to monitor emissions according to the requirements in 40 CFR 60.45(b)(7) shall maintain records according to the requirements specified in paragraphs (h)(1) through (3) of 40 CFR 60.45, as applicable to the visible emissions monitoring method used. (40 CFR 60.45(h))
 - 1) For each performance test conducted using Method 9 of appendix A-4 of this part, the owner or operator shall keep the records including the information specified in paragraphs (h)(1)(i) through (iii) of 40 CFR 60.45. (40 CFR 60.45(h)(1))
 - (a) Dates and time intervals of all opacity observation periods; (40 CFR 60.45(h)(1)(i))
 - (b) Name, affiliation, and copy of current visible emission reading certification for each visible emission observer participating in the performance test; and (40 CFR 60.45(h)(1)(ii))
 - (c) Copies of all visible emission observer opacity field data sheets; (40 CFR 60.45(h)(1)(iii))
 - 2) For each performance test conducted using Method 22 of appendix A-4 of this part, the owner or operator shall keep the records including the information specified in paragraphs (h)(2)(i) through (iv) of 40 CFR 60.45. (40 CFR 60.45(h)(2))
 - (a) Dates and time intervals of all visible emissions observation periods; (40 CFR 60.45(h)(2)(i))
 - (b) Name and affiliation for each visible emission observer participating in the performance test; (40 CFR 60.45(h)(2)(ii))

- (c) Copies of all visible emission observer opacity field data sheets; and (40 CFR 60.45(h)(2)(iii))
 - (d) Documentation of any adjustments made and the time the adjustments were completed to the affected facility operation by the owner or operator to demonstrate compliance with the applicable monitoring requirements. (40 CFR 60.45(h)(2)(iv))
- 3) For each digital opacity compliance system, the owner or operator shall maintain records and submit reports according to the requirements specified in the site-specific monitoring plan approved by the Administrator. (40 CFR 60.45(h)(3))

vi. For coal silos (E6):

- 1) The owner or operator shall conduct a weekly one-minute visible emissions survey, during normal operation, of the PM Emission Points (stacks). For Emission Points without observed visible emissions during twelve consecutive operating weeks, the owner or operator may elect to conduct a monthly one-minute visible emission survey, during normal operation.
- 2) At Emission Points where visible emissions are observed, the owner or operator shall initiate corrective action within eight hours of the initial observation. If the visible emissions persist, the owner or operator shall perform or cause to be performed a Method 9 for stack emissions within 24 hours of the initial observation. If the opacity standard is exceeded, the owner or operator shall report the exceedance to the District, according to Regulation 1.07, and take all practicable steps to eliminate the exceedance.
- 3) The owner or operator shall maintain records, monthly, of the results of all visible emissions surveys and tests. Records of the results of any visible emissions survey shall include the date of the survey, the name of the person conducting the survey, whether or not visible emissions were observed, and what if any corrective action was performed. If an emission point is not being operated during a given month, then no visible emission survey needs to be performed and a negative declaration shall be entered in the record.

e. **TAC**

- i. The owner or operator shall monthly calculate and record TAC emissions for this unit in order to demonstrate compliance with the TAC emission standards.
 - ii. See Plant-wide Requirements S2.b.
- f. **HAP (40 CFR 63, Subpart UUUUU)**
- i. The owner or operator shall comply with 40 CFR 63, Subpart UUUUU (See Attachment A) no later than April 16, 2016.
 - ii. The owner or operator shall establish a site-specific minimum activated carbon injection rate for PAC injection system according to Attachment B, Specific Condition a.i. The owner or operator shall monitor and record the activated carbon injection rate during each operating day.⁶³
 - iii. The owner or operator shall monitor and record all Hg emission data from the Hg sorbent traps, which is used as the indicator of normal operation of the Hg control measures.
 - iv. The owner or operator shall monitor and record the pH of the reactant material in the FGD and any other parameters verified as having a direct effect on Hg emissions during each operating day, which is (are) used as the indicator(s) of normal operation of Hg control measures.⁶⁴
 - v. The owner or operator shall maintain records of which Hg control devices/measure was being used during each operating day.
- g. **112(r) Regulated Substances (Regulation 5.15)**
- If anhydrous ammonia is present at the stationary source in an amount greater than the threshold quantity specified in Regulation 5.15, the owner or operator shall monitor the processes and keep records as required by Regulation 5.15. (Construction Permit 225-01-C)
- h. **BART (40 CFR 52, Subpart S)**
- i. The owner or operator shall maintain daily records of the hours of operation.

⁶³ In a letter dated October 4, 2016, LG&E demonstrated that in certain circumstance EGUs at this plant can meet the MACT mercury standard at zero PAC injection rate. Therefore the source is allowed to use flexible mercury control measures, including PAC injection or liquid additive system, to achieve compliance with MACT mercury standard.

⁶⁴ LG&E has established normal pH range per monitoring records during consecutive 180 days. On 10/20/2016, LG&E reported that the normal pH range for this unit is 4.8 – 6.4.

- ii. The owner or operator shall, monthly, calculate and record the H₂SO₄ emissions on an average hourly basis for each operating calendar day.

S3. **Reporting** (Regulation 2.16, section 4.1.9.3)

The owner or operator shall submit quarterly compliance reports that include the information in this section.

a. **NO_x**

- i. The owner or operator shall identify all periods of exceeding a NO_x emission standard during a quarterly reporting period. The quarterly compliance report shall include the following:

- 1) Emission Unit ID number and emission point ID number;
- 2) Identification of all periods during which a deviation occurred;
- 3) A description, including the magnitude, of the deviation;
- 4) If known, the cause of the deviation;
- 5) A description of all corrective actions taken to abate the deviation; and
- 6) If no deviations occur during a quarterly reporting period, the report shall contain a negative declaration.

- ii. The owner or operator shall submit a written report of excess emissions and the nature and cause of the excess emissions if known. The averaging period used for data reporting should correspond to the averaging period specified in the emission test method used to determine compliance with an emission standard for the pollutant/source category in question. All quarterly reports shall be postmarked by the 30th day following the end of each calendar quarter. The required report shall include: (Regulation 6.02, section 16.1)

- 1) For gaseous measurements, the summary shall consist of hourly averages in the units of the applicable standard. The hourly averages shall not appear in the written summary, but shall be made available electronically. (Regulation 6.02, section 16.3)
- 2) The data and time identifying each period during which the continuous monitoring system was inoperative, except for zero and span checks, and the nature of system repairs or adjustment shall be reported. Proof of continuous monitoring system performance whenever system repairs or adjustments have been made is required. (Regulation 6.02, section 16.4)
- 3) When no excess emissions have occurred and the continuous monitoring systems have been inoperative, repaired, or adjusted,

such information shall be included in the report. (Regulation 6.02, section 16.5)

- 4) Owners or operators of affected facilities shall maintain a file of all information reported in the quarterly summaries, and all other data collected either by the continuous monitoring system or as necessary to convert monitoring data to the units of the applicable standard for a minimum of two years from the date of collection of such data or submission of such summaries. (Regulation 6.02, section 16.6)
- iii. The owner or operator shall comply with the reporting requirements for the Acid Rain Permit No.176-97-AR (R4), specified in 40 CFR 75, Subpart G. Notifications, Monitoring Plans, Initial Certification and Recertification Applications, Quarterly Reports, Opacity Reports, Petitions to the Administrator, and Retired Unit Petitions shall be submitted as specified in Subpart G - reporting requirements. (See Attachment E)
 - iv. The owner or operator shall comply with the reporting requirements for the Title IV NO_x Budget Emission Limitation, 0.46 lb/MMBtu, as specified in 40 CFR Part 76.
 - v. Excess emissions for affected facilities using a CEMS for measuring NO_x are defined as: (40 CFR 60.45(g)(3))
 - 1) For affected facilities electing not to comply with 40 CFR 60.44(e), any three-hour period during which the average emissions (arithmetic average of three contiguous one-hour periods) exceed the applicable standards in 40 CFR 60.44; or (40 CFR 60.45(g)(3)(i))
 - 2) For affected facilities electing to comply with 40 CFR 60.44(e), any 30 operating day period during which the average emissions (arithmetic average of all one-hour periods during the 30 operating days) of NO_x as measured by a CEMS exceed the applicable standard in 40 CFR 60.44. (40 CFR 60.45(g)(3)(ii))
- b. **SO₂**
- i. The owner or operator shall identify all periods of exceeding a SO₂ emission standard during a quarterly reporting period. The report shall include the following:
 - 1) Emission Unit ID number and emission point ID number;
 - 2) Identification of all periods during which a deviation occurred;

- 3) A description, including the magnitude, of the deviation;
 - 4) If known, the cause of the deviation;
 - 5) A description of all corrective actions taken to abate the deviation; and
 - 6) If no deviations occur during a quarterly reporting period, the report shall contain a negative declaration.
- ii. The owner or operator shall submit a written report of excess emissions and the nature and cause of the excess emissions if known. See Specific Condition S3.a.ii.
 - iii. The owner or operator shall comply with the reporting requirements for the Acid Rain Permit No.176-97-AR (R4), specified in 40 CFR 75, Subpart G. Notifications, monitoring Plans, Initial Certification and Recertification Applications, Quarterly Reports, Opacity Reports, Petitions to the Administrator, and Retired Unit Petitions shall be submitted as specified in Subpart G - reporting requirements. (See Attachment E)
 - iv. Excess emissions for affected facilities are defined as: (40 CFR 60.45(g)(2))
 - 1) For affected facilities electing not to comply with 40 CFR 60.43(d), any three-hour period during which the average emissions (arithmetic average of three contiguous one-hour periods) of SO₂ as measured by a CEMS exceed the applicable standard in 40 CFR 60.43; or (40 CFR 60.45(g)(2)(i))
 - 2) For affected facilities electing to comply with 40 CFR 60.43(d), any 30 operating day period during which the average emissions (arithmetic average of all one-hour periods during the 30 operating days) of SO₂ as measured by a CEMS exceed the applicable standard in 40 CFR 60.43. (40 CFR 60.45(g)(2)(ii))
- c. **PM**
- i. The owner or operator shall identify all periods of exceeding a PM emission standard during a quarterly reporting period. The report shall include the following:
 - 1) Emission Unit ID number and emission point ID number;
 - 2) The date and duration (including the start and stop time) during which a deviation occurred;
 - 3) The magnitude of excess emissions;
 - 4) Description of the deviation and summary information on the cause or reason for excess emissions;

- 5) Corrective action taken to minimize the extent and duration of each excess emissions event;
 - 6) Measures implemented to prevent reoccurrence of the situation that resulted in excess PM emissions; or
 - 7) If no deviations occur during a quarterly reporting period, the report shall contain a negative declaration.
- ii. The owner or operator shall submit a written report of excess emissions and the nature and cause of the excess emissions if known. See Specific Condition S3.a.ii.
 - iii. Excess emissions for affected facilities using a CEMS for measuring PM are defined as any boiler operating day period during which the average emissions (arithmetic average of all operating one-hour periods) exceed the applicable standards in 40 CFR 60.42. (40 CFR 60.45(g)(4))

d. Opacity

- i. The owner or operator shall identify all periods of exceeding an opacity standard during a quarterly reporting period. The report shall include the following:
 - 1) Any deviation from the requirement to perform daily (or monthly, if required) visible emission surveys or Method 9 tests and documented reason;
 - 2) Any deviation from the requirement to record the results of each VE survey and Method 9 test performed and documented reason;
 - 3) The number, date, and time of each VE Survey where visible emissions were observed and the results of the Method 9 test performed;
 - 4) Identification of all periods of exceeding an opacity standard;
 - 5) Description of any corrective action taken for each exceedance of the opacity standard; or
 - 6) If no deviations occur during a quarterly reporting period, the report shall contain a negative declaration.
- ii. The owner or operator shall comply with the reporting requirements for the Acid Rain Permit No.176-97-AR (R4), specified in 40 CFR 75, Subpart G. Notifications, monitoring Plans, Initial Certification and Recertification Applications, Quarterly Reports, Opacity Reports, Petitions to the Administrator, and Retired Unit Petitions shall be submitted as specified in Subpart G - reporting requirements. (See Attachment E) (Regulation 6.47, section 3.4 and 3.5 referencing 40 CFR Parts 75 and 76)

iii. Excess emissions are defined as any six-minute period during which the average opacity of emissions exceeds 20 percent opacity, except that one six-minute average per hour of up to 27 percent opacity need not be reported. (40 CFR 60.45(g)(1))

iv. For coal silos (E6):

The owner or operator shall identify all periods of exceeding an opacity standard during a quarterly reporting period. The report shall include the following:

- 1) Emission Unit ID number, Stack ID number, and/or Emission point ID number;
- 2) The beginning and ending date of the reporting period;
- 3) The date, time and results of each exceedance of the opacity standard;
- 4) Description of any corrective action taken for each exceedance.

e. **TAC**

i. The owner or operator shall identify all periods of exceeding a TAC emission standard during a quarterly reporting period. The report shall include the following:

- 1) Emission Unit ID number and emission point ID number;
- 2) Identification of all periods during which a deviation occurred;
- 3) A description, including the magnitude, of the deviation;
- 4) If known, the cause of the deviation;
- 5) A description of all corrective actions taken to abate the deviation; and
- 6) If no deviations occur during a quarterly reporting period, the report shall contain a negative declaration.

ii. See Plant-wide Requirements S2.b.

f. **HAP** (40 CFR 63, Subpart UUUUU)

i. The owner or operator shall comply with 40 CFR 63, Subpart UUUUU (See Attachment A) no later than April 16, 2016.

ii. Report normal pH range of reactant material in the FGD and normal range of any other parameters verified as having a direct effect on Hg emission within 30 days of establishing the normal range.

iii. The owner or operator shall identify all periods of the activated carbon injection rate are less than the minimum injection rate, or the pH of the

reactant material in the FGD are out of normal range, or anytime other verified parameters are outside of their normal range, and any corrective action taken for each exceedance.

g. **112(r) Regulated Substances (Regulation 5.15)**

If anhydrous ammonia is present at the stationary source in an amount greater than the threshold quantity specified in Regulation 5.15, the owner or operator shall comply with the reporting requirements specified in Regulation 5.15. (Construction Permit 225-01-C)

h. **BART (40 CFR 52, Subpart S)**

The owner or operator shall identify all periods of exceeding a H₂SO₄ emission standard during a quarterly reporting period. The report shall include the following:

- 1) Emission Unit ID number and emission point ID number;
- 2) The date and duration (including the start and stop time) during which a deviation occurred;
- 3) The magnitude of excess emissions;
- 4) Description of the deviation and summary information on the cause or reason for excess emissions;
- 5) Corrective action taken to minimize the extent and duration of each excess emissions event;
- 6) Measures implemented to prevent reoccurrence of the situation that resulted in excess H₂SO₄ emissions; or
- 7) If no deviations occur during a quarterly reporting period, the report shall contain a negative declaration.

S4. **Testing (Regulation 2.16, section 4.1.9.1)**

a. **Control efficiency determination**

The owner or operator shall conduct performance test for the new EGU control device C29 and C39, according to the testing requirements in Attachment B, C, and G and Attachment C.^{65,66} (Regulation 2.16, section 4.1.9.1)

U3 Comments

⁶⁵ Per an EPA rule change ("Restructuring of the Stationary Source Audit Program." Federal Register 75:176 (September 13, 2010) pp 55636-55657), if an audit sample is required by the test method, sources became responsible for obtaining the audit samples directly from accredited audit sample suppliers, not the regulatory agencies.

⁶⁶ According to permit 34595-12-C, the source is required to conduct stack tests to obtain the actual emission factors and control efficiencies.

1. Boiler (E5) has TAC emission standards since its EA Demonstration was based on controlled PTE. If the controlled PTE for the TAC is less than de minimis level, De Minimis is listed as the basis of the limit. If the controlled PTE for the TAC is greater than de minimis level, modeling results were used to calculate risk value to compare to the EA Goals. In this case, controlled is used as the basis of the limit. TAC emissions for the coal silos (E6) are de minimis according to Regulation 5.21, section 2.1. The TAC emission limits determined by de minimis values shall be updated each time when the District revises the BAC/de minimis values for these TACs. The current de minimis values per TAC list revised on 10/14/2013 are as the following:

| TAC Name | CAS # | De minimis values | |
|----------------------------|-----------|-------------------|-----------|
| | | (lb/hr) | (lb/yr) |
| Benzene | 71-43-2 | 0.243 | 216 |
| Bromoform | 75-25-2 | 0.4914 | 437 |
| Chloroform | 67-66-3 | 0.02322 | 20.6 |
| Methylene chloride | 75-09-2 | 54 | 48,000 |
| Tetrachloroethylene (Perc) | 127-18-4 | 2.079 | 1,848 |
| Toluene | 108-88-3 | 2700 | 2,400,000 |
| Xylene | 1330-20-7 | 54 | 48,000 |
| Hydrochloric acid | 7647-01-0 | 10.8 | 9,600 |

Emission Unit U4: Electric Utility Steam Generating Unit (EGU) – Unit 4**U4 Applicable Regulations:**

| FEDERALLY ENFORCEABLE REGULATIONS | | |
|--|---|--|
| Regulation | Title | Applicable Sections |
| 6.02 | Emission Monitoring for Existing Sources | 1, 2, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18 |
| 6.09 | Standards of Performance for Existing Process Operations | 1, 2, 3, 5 |
| 6.42 | Reasonably Available Control Technology Requirements for Major Volatile Organic Compound- and Nitrogen Oxides-Emitting Facilities | 1, 2, 3, 4, 5 |
| 6.47 | Federal Acid Rain Program for Existing Sources Incorporated by Reference | 1, 2, 3, 4, 5 |
| 7.06 | Standards of Performance for New Indirect Heat Exchangers | 1, 2, 3, 4.1.2, 4.2, 5.1.2, 6, 7, 8 |
| 7.08 | Standards of Performance for New Process Operations | 1, 2, 3, 5 |
| 40 CFR 60, Subpart D | Standards of Performance for Fossil-Fuel Fired Steam Generators for Which Construction is Commenced After August 17, 1971 | 60.40, 60.41, 60.42(a), 60.43, 60.44, 60.45, 60.46 |
| 40 CFR 64 | Compliance Assurance Monitoring for Major Stationary Sources | 64.1 through 64.10 |
| 40 CFR 68 | Chemical Accident Prevention Provisions | 68.1 through 68.220 |
| 40 CFR 72 | Permits Regulation | Subparts A, B, C, D, E, F, G, H, I |
| 40 CFR 73 | Sulfur Dioxide Allowance System | Subparts A, B, C, D, E, F, G |
| 40 CFR 75 | Continuous Emission Monitoring | Subparts A, B, C, D, E, F, G |
| 40 CFR 76 | Acid Rain Nitrogen Oxides Emission Reduction Program | 76.1, 76.2, 76.3, 76.4, 76.5, 76.7, 76.8, 76.9, 76.11, 76.13, 76.14, 76.15, Appendix A, Appendix B |
| 40 CFR 77 | Excess Emissions | 77.1, 77.2, 77.3, 77.4, 77.5, 77.6 |
| 40 CFR 78 | Appeals Procedures for Acid Rain Program | 78.1, 78.2, 78.3, 78.4, 78.5, 78.6, 78.8, 78.9, 78.10, 78.11, 78.13, 78.14, 78.15, 78.16, 78.17, 78.18, 78.19, 78.20 |
| 40 CFR 63, Subpart UUUUU | National Emission Standards for Hazardous Air Pollutants: Coal- and Oil-Fired Electric Utility Steam Generating Units (EGU MACT) | 63.9980 through 63.10042 |

| DISTRICT ONLY ENFORCEABLE REGULATIONS | | |
|--|---|----------------------------|
| Regulation | Title | Applicable Sections |
| 5.00 | Definitions | 1, 2 |
| 5.01 | General Provisions | 1 through 2 |
| 5.02 | Adoption of National Emission Standards for Hazardous Air Pollutants | 1, 3.95 and 4 |
| 5.14 | Hazardous Air Pollutants and Source Categories | 1, 2 |
| 5.15 | Chemical Accident Prevention Provisions | 1, 2 |
| 5.20 | Methodology for Determining Benchmark Ambient Concentration of a Toxic Air Contaminant | 1 through 6 |
| 5.21 | Environmental Acceptability for Toxic Air Contaminants | 1 through 5 |
| 5.22 | Procedures for Determining the Maximum Ambient Concentration of a Toxic Air Contaminant | 1 through 5 |
| 5.23 | Categories of Toxic Air Contaminants | 1 through 6 |
| 7.02 | Federal New Source Performance Standards Incorporated by Reference | 1.1, 1.8, 2, 3, 4, 5 |

U4 Equipment:⁶⁷

| Emission Point | Description | Applicable Regulation | Control ID | Stack ID |
|-----------------------|---|--|---------------------------------|------------------|
| E7 | One (1) dry bottom, wall-fired boiler, rated capacity 5,025 MMBtu/hr, make Babcock & Wilcox, using pulverized coal as a primary fuel and natural gas as secondary fuel. | 5.00, 5.01, 5.02, 5.14, 5.20, 5.21, 5.22, 5.23, 6.02, 6.42, 6.47, 7.02, 7.06 | C10, C11 ^a , C23 | S4 ^a |
| | | 40 CFR 60, D
40 CFR 64,
40 CFR 72-73,
40 CFR 75-78,
40 CFR 63, UUUUU | C10, C23, C30, C31 ^b | S34 ^b |
| E8 | Five (5) coal silos, make American Air Filter, controlled by a centrifugal dust collector and equipped with five (5) coal mills, make Babcock & Wilcox. | 5.00, 5.01, 5.20, 5.21, 5.22, 5.23, 6.09 | C12 | S8 |

⁶⁷ This unit was modified under construction permit 216-01 (SCR), 225-01 (Ammonia tanks), and 34595-12-C.

| Emission Point | Description | Applicable Regulation | Control ID | Stack ID |
|---|-------------|-----------------------|------------|----------|
| <p>Note a: The existing FGD (C11, S4) will shut down before April 16, 2016, the compliance date when this unit has to comply with 40 CFR 63, Subpart UUUUU.</p> <p>Note b: The new FGD, HAP PM control and stack (C30, C31, and S34) will replace C11 and S4. These new control devices need to be in full operation no later than April 16, 2016, the compliance date when this unit has to comply with 40 CFR 63, Subpart UUUUU.⁶⁸</p> | | | | |

U4 Control Devices:

Before compliance with 40 CFR 63, Subpart UUUUU, Unit 4 uses the following control devices:

| ID | Description | Performance Indicator | Stack ID |
|-----|---|--|----------|
| C10 | One (1) custom-built electrostatic precipitator (ESP) for PM control, make Western Precipitator Division | PM emission data from PM CEMS (if PM CEMS is not used to demonstrate compliance) | S4 |
| C11 | One (1) Flue Gas Desulfurization (FGD) unit for SO ₂ control using limestone scrubbing liquor, make Combustion Engineering | N/A ⁶⁹ | |
| C12 | One (1) centrifugal dust collector, make American Air Filter | N/A ⁷⁰ | S8 |
| C23 | One (1) Selective Catalytic Reduction (SCR), make Babcock Borsig Power, and the associated ammonia storage tanks. ⁷¹ | N/A ⁶⁹ | S4 |

After compliance with 40 CFR 63, Subpart UUUUU, Unit 4 uses the following control devices:

| ID | Description | Performance Indicator | Stack ID |
|-----|--|-----------------------|----------|
| C10 | One (1) custom-built electrostatic precipitator (ESP) for PM control, make Western Precipitator Division | N/A ⁶⁹ | S34 |

⁶⁸ On December 31, 2014, LG&E submitted a notification for initial startup of PJFF (C30) and FGD (C31) for U4. These control devices went into service on December 19, 2014.

⁶⁹ This unit is equipped with CEMS for NO_x, SO₂, and PM. According to the District's letter dated November 1, 2005, parametric monitoring of the ESP, FGD, and PJFF for this unit is removed as such monitoring would no longer be required for demonstration of compliance. On July 22, 2016, LG&E reported the normal pressure drop range for U4 PJFF, 2 – 6 inches of water, established during 90 consecutive operating days.

⁷⁰ For the coal silos (E8), the owner or operator has shown, by worst-case calculations without allowance for a control device, that the hourly uncontrolled PM emission standard cannot be exceeded; therefore, no additional monitoring, recordkeeping, or reporting is required to demonstrate compliance with the applicable PM standards specified in Regulation 6.09 and 7.08 is required for this emission point.

⁷¹ The two ammonia storage tanks are housed in a roof-covered building which has secondary containment for about 66,000 gallons of liquid ammonia (110% of one tank) if a release occurs. The ammonia, under pressure, will be a liquid but will convert to a gas after it is released. The building and tanks contain alarms and leak detection devices. Ammonia from either tank can be used by either Unit 3 or Unit 4 SCR System.

| ID | Description | Performance Indicator | Stack ID |
|-----|---|---|----------|
| C12 | One (1) centrifugal dust collector, make American Air Filter | N/A ⁷⁰ | S8 |
| C23 | One (1) Selective Catalytic Reduction (SCR), make Babcock Borsig Power | N/A ⁶⁹ | S34 |
| C30 | One (1) HAP particulate matter control system, consists of: one (1) powdered activated carbon (PAC) injection system; one (1) dry sorbent injection system; liquid additive system(s); and one (1) pulse-jet fabric filter (PJFF) baghouse used for collecting PM from the boiler and PAC and dry sorbent injection system. PJFF make Clyde Bergemann Power Group, model Structural Pulse Jet | PM Control:
PM emission data from PM CEMS (if PM CEMS is not used to demonstrate compliance)

Hg control:
(1) Minimum PAC injection rate; ⁷²
(2) pH of reactant in FGD, 4.8-6.4;
(3) Hg emission data from Sorbent Traps | S34 |
| C31 | One (1) Flue Gas Desulfurization (FGD) unit for SO ₂ control using limestone scrubbing liquor, make Babcock Power Environmental | N/A ⁶⁹ | S34 |

⁷² In a letter dated October 4, 2016, LG&E demonstrated that in certain circumstance EGUs at this plant can meet the MACT mercury standard at zero PAC injection rate. Therefore the source is allowed to use flexible mercury control measures, including PAC injection or liquid additive system, to achieve compliance with MACT mercury standard.

U4 Specific Conditions

S1. Standards⁷³ (Regulation 2.16, section 4.1.1)

a. NO_x

- i. The owner or operator shall not allow the average NO_x emissions to exceed the alternate contemporaneous emission limitation of 0.46 lb/MMBtu of heat input on an annual average basis, as specified in Acid Rain Permit No.176-97-AR (R4). (See Acid Rain Permit Attachment) (Regulation 6.47, section 3.5 referencing 40 CFR Part 76)
- ii. The owner or operator shall not exceed the NO_x RACT emissions standard of 0.52 lb/MMBtu of heat input based on a rolling 30-day average. (See NO_x RACT Attachment) (Regulation 6.42, section 4.3)
- iii. When combusting natural gas, the owner or operator shall not cause to be discharged into the atmosphere any gases which contain nitrogen oxides expressed as nitrogen dioxide in excess of 86 ng/J (0.20 lb/MMBtu) heat input on a 3-hour rolling average. (Regulation 7.06, section 6.1.1) (40 CFR 60.44(a)(1))
- iv. When combusting coal, the owner or operator shall not cause to be discharged into the atmosphere any gases which contain nitrogen oxides expressed as nitrogen dioxide in excess of 300 ng/J (0.70 lb/MMBtu) heat input on a 3-hour rolling average. (Regulation 7.06, section 6.1.3) (40 CFR 60.44(a)(3))
- v. When natural gas and coal are burned simultaneously in any combination, the applicable standard is determined by proration using the following equation: (40 CFR 60.44(b))

$$PS_{NOx} = \frac{x(86) + z(300)}{(x + z)}$$

Where,

PS_{NOx} = Prorates standard for NO_x when burning different fuels simultaneously, in ng/J heat input derived from all fossil fuels fired;

x = Percentage of total heat input from gaseous fossil fuel

z = Percentage of total heat from solid fossil fuel (except lignite)

- vi. The owner or operator shall install, maintain, calibrate and operate a continuous emission monitoring system (CEMS) for the measurement or

⁷³ The emission standards, monitoring, record keeping, and reporting requirements only apply to the boiler E7 (not the coal silos E8) if not indicated.

calculation of nitrogen oxides in the flue gas. (Regulation 6.02, section 6.1.3) (NO_x RACT Plan) (Regulation 6.47, section 3.4 referencing 40 CFR 75.10(a)(2))

b. **SO₂**

i. The owner or operator shall not exceed 0.8 lb/MMBtu heat input for combustion of natural gas and 1.2 lb/MMBtu heat input for combustion of coal based on a three hour rolling average. (Regulation 7.06, section 5.1.2) (40 CFR 60.43(a)(2))

ii. When natural gas and coal fuels are burned simultaneously in any combination, the applicable standard is determined by proration using the following equation: (Regulation 2.16, section 4.1.1)

$$PS_{SO_2} = \frac{x(0.8) + z(1.2)}{(x + z)}$$

Where,

PS_{SO₂} = Prorates standard for SO₂ when burning different fuels simultaneously, in lb/MMBtu heat input derived from all fossil fuels fired;

x = Percentage of total heat input from gaseous fossil fuel

z = Percentage of total heat from solid fossil fuel (except lignite)

iii. Compliance shall be based on the total heat input from all fossil fuels burned, including gaseous fuels. (40 CFR 60.43(c))

iv. The owner or operator shall comply with the annual SO₂ emission allowances as specified in Acid Rain Permit No.176-97-AR (R4). (See Acid Rain Permit Attachment) (Regulation 6.47, section 3.2 referencing 40 CFR Part 73)

v. The owner or operator shall operate and maintain the FGD, as recommended by the manufacturer, at all times the respective boiler is in operation, including periods of startup, shutdown, and malfunction, in a manner consistent with good air pollution control practice to meet the standards.⁷⁴ (Regulation 2.16, section 4.1.1)

vi. The owner or operator shall install, maintain, calibrate and operate a continuous emission monitoring system (CEMS) for the measurement of sulfur dioxide in the flue gas. (Regulation 6.02, section 6.1.2) (Regulation 6.47, section 3.4 referencing 40 CFR 75.10(a)(1))

⁷⁴ The SO₂ emissions cannot meet the standards uncontrolled. The owner or operator is required to operate the control devices to meet the applicable limits for SO₂.

c. PM

- i. The owner or operator shall not exceed an allowable particulate emission rate of 0.10 lbs/MMBtu heat input based on a three hour rolling average. (Regulation 7.06, section 4.1.2)
- ii. The owner or operator shall not cause to be discharged into the atmosphere from any affected facility any gases that contain PM in excess of 43 ng/J heat input (0.10 lb/MMBtu) derived from fossil fuel. (40 CFR 60.42(a)(1))
- iii. The owner or operator shall operate and maintain the PM control devices, as recommended by the manufacturer, at all times the respective boiler is in operation, including periods of startup, shutdown, and malfunction, in a manner consistent with good air pollution control practice to meet the standards. Following commissioning of the PJFF baghouses, the owner or operator may elect to operate, turn down, or turn off the ESP to ensure the efficient operation of the PJFF baghouse.⁷⁵ (Regulation 2.16, section 4.1.1)
- iv. The company shall follow one of the two options below to demonstrate compliance with PM standards:

| Compliance Options | PM | Opacity | Control Device Performance indication |
|--------------------|-------------------|--------------------------------|---------------------------------------|
| Option 1 | Certified PM CEMS | VE/Method 9, or Certified COMS | N/A |
| Option 2 | Annual testing | Certified COMS | PM CEMS |

- v. For the coal silos (E8), the owner or operator shall not exceed an allowable particulate emission rate of 82.95 lbs/hr from five coal silos combined based on actual operating hours in a calendar day.⁷⁶ (Regulation 6.09, section 3.2)

d. Opacity

- i. The owner or operator shall not cause the emission into the open air of particulate matter from any indirect heat exchanger which is greater than 20% opacity, except for emissions from an indirect heat exchanger during building a new fire for the period required to bring the boiler up to

⁷⁵ The PM emissions cannot meet the standards uncontrolled. The owner or operator is required to operate the control devices to meet the applicable limits for PM.

⁷⁶ For the coal silos (E8), the owner or operator has shown, by worst-case calculations without allowance for a control device, that the hourly uncontrolled PM emission standard cannot be exceeded; therefore, no additional monitoring, recordkeeping, or reporting is required to demonstrate compliance with the applicable PM standards specified in Regulation 6.09 and 7.08 is required for this emission point.

operating conditions provided the method used is that recommended by the manufacturer and the time does not exceed the manufacturer's recommendations. (Regulation 7.06, section 4.2)

- ii. The company shall follow one of the two options in the table under Specific Condition S1.c.iv to demonstrate compliance with opacity standards.
- iii. The owner or operator shall not cause the emission into the open air of particulate matter that exhibit greater than 20% opacity except for one six-minute period per hour of not more than 27%. (40 CFR 60.42(a)(2))
- iv. For the coal silos (E8), the owner or operator shall not allow visible emissions to equal or exceed 20% opacity. (Regulation 6.09, section 3.1) (Regulation 7.08, section 3.1.1)

e. **TAC**

- i. The owner or operator shall not allow TAC emissions from boiler E7 to exceed the TAC emission standards determined based upon the EA Demonstration provided to the District.⁷⁷ (Regulation 5.21, section 4.2 and section 4.3) (See Comment 1)

| TAC Name | CAS # | TAC Limits Determination | |
|----------------------------|------------|--------------------------------------|-----------------|
| | | (lbs/yr) | Basis of Limits |
| Naphthalene | 91-20-3 | 27.0 | Controlled PTE |
| Chloroform | 67-66-3 | 24.2 | Controlled PTE |
| Formaldehyde | 50-00-0 | 114.4 | Controlled PTE |
| Hydrogen fluoride | 7664-39-3 | 21,802 | Controlled PTE |
| Arsenic compounds | 7440-38-2 | 434 | Controlled PTE |
| Cadmium compounds | 7440-43-9 | 68.6 | Controlled PTE |
| Chromium VI | 7440-47-3 | 153.9 | Controlled PTE |
| Chromium III | 16065-83-1 | 353 | Controlled PTE |
| Cobalt compounds | 7440-48-4 | 91.5 | Controlled PTE |
| Lead compounds | 7439-92-1 | 541 | Controlled PTE |
| Manganese compounds | 7439-96-5 | 691 | Controlled PTE |
| Nickel compounds | 7440-02-0 | 499 | Controlled PTE |
| Sulfuric acid | 7664-93-9 | 193,310 | Controlled PTE |
| Benzene | 71-43-2 | De minimis values
(See Comment 1) | De Minimis |
| Bromoform | 75-25-2 | | De Minimis |
| Methylene chloride | 75-09-2 | | De Minimis |
| Tetrachloroethylene (Perc) | 127-18-4 | | De Minimis |

⁷⁷ This table for TAC emission standards has been revised to exclude Category 3 and 4 TACs for existing sources and use "de minimis values", instead of actual numbers for current de minimis levels, as emission standards.

| TAC Name | CAS # | TAC Limits Determination | |
|-------------------|-----------|--------------------------|-----------------|
| | | (lbs/yr) | Basis of Limits |
| Toluene | 108-88-3 | | De Minimis |
| Xylene | 1330-20-7 | | De Minimis |
| Hydrochloric acid | 7647-01-0 | | De Minimis |

ii. See Plant-wide Requirements S1.b.

f. **HAP** (40 CFR 63, Subpart UUUUU)

The owner or operator shall comply with 40 CFR 63, Subpart UUUUU (See Attachment A) no later than April 16, 2016.⁷⁸

g. **112(r) Regulated Substances (Regulation 5.15)**

If anhydrous ammonia is present at the stationary source in an amount greater than the threshold quantity specified in Regulation 5.15, the owner or operator shall comply with the requirements specified in Regulation 5.15, including the requirement to submit a Risk Management Plan in a method and format as specified by the District and EPA.⁷⁹ (Construction Permit 225-01-C)

h. **BART** (40 CFR 52, Subpart S)

i. The owner or operator shall install sorbent injection to control SO₃ emissions and continue to utilize PJFF baghouse and/or existing ESP to control PM emissions for this unit.⁸⁰ (40 CFR 52.920(e) refer to Kentucky Regional Haze SIP)

ii. The owner or operator shall not allow H₂SO₄ emissions from this unit to exceed 76.5 lbs/hr based on actual operating hours in a calendar day. (40 CFR 52.920(e) refer to Kentucky Regional Haze SIP)

S2. **Monitoring and Record Keeping** (Regulation 2.16, sections 4.1.9.1 and 4.1.9.2)

⁷⁸ According to 40 CFR 63.9984(b), the compliance date for an existing EGU is April 16, 2015. LG&E requested a year extension and the District has approved the request for the extension per (40 CFR 63.6(i)(4)(i)). Therefore the compliance date for the EGUs under this construction is April 16, 2016.

⁷⁹ The two ammonia storage tanks are housed in a roof-covered building which has secondary containment for about 66,000 gallons of liquid ammonia (110% of one tank) if a release occurs. The ammonia, under pressure, will be a liquid but will convert to a gas after it is released. The building and tanks contain alarms and leak detection devices. Ammonia from either tank can be used by either Unit 3 or Unit 4 SCR System.

⁸⁰ On March 30, 2012, EPA finalized a limited approval and a limited disapproval of the Kentucky state implementation plan submitted on June 25, 2008 and May 28, 2010. According to 40 CFR 52.920(e), the owner or operator shall meet BART requirements summarized in Table 7.5.3-2 of the Commonwealth's May 28, 2010 submittal. A sorbent injection system has been installed for this unit in 2015.

The owner or operator shall maintain the following records for a minimum of 5 years and make the records readily available to the District upon request.

- a. **NO_x**
- i. The owner or operator shall demonstrate compliance with NO_x RACT Plan limits by continuous emissions monitors (CEMs) as specified in the NO_x RACT Plan. (See NO_x RACT Attachment) (Regulation 6.42, section 4.3)
 - ii. The owner or operator shall keep a record identifying all deviations from the requirements of the NO_x RACT Plan.
 - iii. The owner or operator shall comply with the NO_x compliance plan requirements specified in the attached Acid Rain Permit, No.176-97-AR (R4). These record keeping requirements shall be determined in accordance with the Title IV Phase II Acid Rain Permit and are specified in 40 CFR Part 75 Subpart F. (See Appendix A to NO_x RACT Plan) (Regulation 6.47, section 3.4 and 3.5 referencing 40 CFR Parts 75 and 76)
 - iv. The owner or operator shall record on an hourly basis all NO_x emission data specified in 40 CFR Part 75, section 75.57(d). For each NO_x emission rate (in lb/mmBtu) measured by a NO_x-diluent monitoring system, or, if applicable, for each NO_x concentration (in ppm) measured by a NO_x concentration monitoring system used to calculate NO_x mass emissions under 40 CFR 75.71(a)(2), record the following data as measured and reported from the certified primary monitor, certified back-up monitor, or other approved method of emissions determination:
 - 1) Component-system identification code, as provided in 40 CFR 75.53 (including identification code for the moisture monitoring system, if applicable); (40 CFR 75.57(d)(1))
 - 2) Date and hour; (40 CFR 75.57(d)(2))
 - 3) Hourly average NO_x concentration (ppm, rounded to the nearest tenth) and hourly average NO_x concentration (ppm, rounded to the nearest tenth) adjusted for bias if bias adjustment factor required, as provided in 40 CFR 75.24(d); (40 CFR 75.57(d)(3))
 - 4) Hourly average diluent gas concentration (for NO_x -diluent monitoring systems, only, in units of percent O₂ or percent CO₂, rounded to the nearest tenth); (40 CFR 75.57(d)(4))
 - 5) If applicable, the hourly average moisture content of the stack gas (percent H₂O, rounded to the nearest tenth). If the continuous moisture monitoring system consists of wet- and dry-basis oxygen

- analyzers, also record both the hourly wet- and dry-basis oxygen readings (in percent O₂, rounded to the nearest tenth); (40 CFR 75.57(d)(5))
- 6) Hourly average NO_x emission rate (for NO_x -diluent monitoring systems only, in units of lb/mmBtu, rounded to the nearest thousandth); (40 CFR 75.57(d)(6))
 - 7) Hourly average NO_x emission rate (for NO_x -diluent monitoring systems only, in units of lb/mmBtu, rounded to the nearest thousandth), adjusted for bias if bias adjustment factor is required, as provided in 40 CFR 75.24(d). The requirement to report hourly NO_x emission rates to the nearest thousandth shall not affect NO_x compliance determinations under part 76 of this chapter; compliance with each applicable emission limit under part 76 shall be determined to the nearest hundredth pound per million Btu; (40 CFR 75.57(d)(7))
 - 8) Percent monitoring system data availability (recorded to the nearest tenth of a percent), for the NO_x -diluent or NO_x concentration monitoring system, and, if applicable, for the moisture monitoring system, calculated pursuant to 40 CFR 75.32; (40 CFR 75.57(d)(8))
 - 9) Method of determination for hourly average NO_x emission rate or NO_x concentration and (if applicable) for the hourly average moisture percentage, using Codes 1–55 in Table 4a of 40 CFR 75.57; and (40 CFR 75.57(d)(9))
 - 10) Identification codes for emissions formulas used to derive hourly average NO_x emission rate and total NO_x mass emissions, as provided in 40 CFR 75.53, and (if applicable) the F-factor used to convert NO_x concentrations into emission rates. (40 CFR 75.57(d)(10))
- v. A CEMS for measuring either oxygen (O₂) or carbon dioxide (CO₂) in the flue gases shall be installed, calibrated, maintained, and operated by the owner or operator. The owner or operator shall use the conversion procedures specified in Regulation 7.06, sections 7.5 and 7.6 for NO_x, SO₂, and PM. (Regulation 7.06, section 7.4)
 - vi. The owner or operator shall monitor the NO_x emissions, the NO_x allowances, as specified in the Clean Air Interstate Rule or the applicable NO_x cap and trade program(s) in effect.

- vii. For performance evaluations under 40 CFR 60.13(c) and calibration checks under 40 CFR 60.13(d), the procedures required in 40 CFR 60.45(c) (See U3 Specific Condition S2.a.vii) shall be used.
 - viii. The conversion procedures in 40 CFR 60.45(e) and (f) shall be used to convert the continuous monitoring data into units of the applicable standards. See U3 Specific Condition S2.a.viii. (40 CFR 60.45(e) and (f))
- b. **SO₂**
- i. The owner or operator shall maintain hourly records of SO₂ emissions as specified in Regulation 6.02, section 6.1.2.
 - ii. The owner or operator shall record on an hourly basis all SO₂ emission data specified in 40 CFR 75.57(c):
 - 1) For SO₂ concentration during unit operation, as measured and reported from each certified primary monitor, certified back-up monitor, or other approved method of emissions determination: (40 CFR 75.57(c)(1))
 - (a) Component-system identification code, as provided in 40 CFR 75.53; (40 CFR 75.57(c)(1)(i))
 - (b) Date and hour; (40 CFR 75.57(c)(1)(ii))
 - (c) Hourly average SO₂ concentration (ppm, rounded to the nearest tenth); (40 CFR 75.57(c)(1)(iii))
 - (d) Hourly average SO₂ concentration (ppm, rounded to the nearest tenth), adjusted for bias if bias adjustment factor is required, as provided in 40 CFR 75.24(d); (40 CFR 75.57(c)(1)(iv))
 - (e) Percent monitor data availability (recorded to the nearest tenth of a percent), calculated pursuant to 40 CFR 75.32; and (40 CFR 75.57(c)(1)(v))
 - (f) Method of determination for hourly average SO₂ concentration using Codes 1–55 in Table 4a of 40 CFR 75.57. (40 CFR 75.57(c)(1)(vi))
 - 2) For flow rate during unit operation, as measured and reported from each certified primary monitor, certified back-up monitor, or other approved method of emissions determination: (40 CFR 75.57(c)(2))

- (a) Component-system identification code, as provided in 40 CFR 75.53; (40 CFR 75.57(c)(2)(i))
 - (b) Date and hour; (40 CFR 75.57(c)(2)(ii))
 - (c) Hourly average volumetric flow rate (in scfh, rounded to the nearest thousand); (40 CFR 75.57(c)(2)(iii))
 - (d) Hourly average volumetric flow rate (in scfh, rounded to the nearest thousand), adjusted for bias if bias adjustment factor required, as provided in 40 CFR 75.24(d); (40 CFR 75.57(c)(2)(iv))
 - (e) Percent monitor data availability (recorded to the nearest tenth of a percent) for the flow monitor, calculated pursuant to 40 CFR 75.32; and (40 CFR 75.57(c)(2)(v))
 - (f) Method of determination for hourly average flow rate using Codes 1–55 in Table 4a of 40 CFR 75.57. (40 CFR 75.57(c)(2)(vi))
- 3) For SO₂ mass emission rate during unit operation, as measured and reported from the certified primary monitoring system(s), certified redundant or non-redundant back-up monitoring system(s), or other approved method(s) of emissions determination: (40 CFR 75.57(c)(4))
- (a) Date and hour; (40 CFR 75.57(c)(4)(i))
 - (b) Hourly SO₂ mass emission rate (lb/hr, rounded to the nearest tenth); (40 CFR 75.57(c)(4)(ii))
 - (c) Hourly SO₂ mass emission rate (lb/hr, rounded to the nearest tenth), adjusted for bias if bias adjustment factor required, as provided in 40 CFR 75.24(d); and (40 CFR 75.57(c)(4)(iii))
 - (d) Identification code for emissions formula used to derive hourly SO₂ mass emission rate from SO₂ concentration and flow and (if applicable) moisture data in paragraphs (c)(1), (c)(2), and (c)(3) of 40 CFR 75.57, as provided in 40 CFR 75.53. (40 CFR 75.57(c)(4)(iv))

iii. For performance evaluations under 40 CFR 60.13(c) and calibration checks under 40 CFR 60.13(d), the following procedures shall be used: (40 CFR 60.45(c))

- 1) Methods 6, 7, and 3B of appendix A of this part, as applicable, shall be used for the performance evaluations of SO₂ and NO_x continuous monitoring systems. Acceptable alternative methods for Methods 6, 7, and 3B of appendix A of this part are given in 40 CFR 60.46(d). (40 CFR 60.45(c)(1))
- 2) Sulfur dioxide or nitric oxide, as applicable, shall be used for preparing calibration gas mixtures under Performance Specification 2 of appendix B to this part. (40 CFR 60.45(c)(2))
- 3) For affected facilities burning fossil fuel(s), the span value for a continuous monitoring system measuring the opacity of emissions shall be 80, 90, or 100 percent. For a continuous monitoring system measuring sulfur oxides or NO_x the span value shall be determined using one of the following procedures: (40 CFR 60.45(c)(3))
 - (a) Except as provided under paragraph 40 CFR 60.45(c)(3)(ii), SO₂ and NO_x span values shall be determined as follows: (40 CFR 60.45(c)(3)(i))

| Fossil fuel | In parts per million | |
|-------------|--------------------------------|--------------------------------|
| | Span value for SO ₂ | Span value for NO _x |
| Gas | Not Applicable | 500. |
| Liquid | 1,000 | 500. |
| Solid | 1,500 | 1,000. |

(b) As an alternative to meeting the requirements of paragraph 40 CFR 60.45(c)(3)(i), the owner or operator of an affected facility may elect to use the SO₂ and NO_x span values determined according to sections 2.1.1 and 2.1.2 in appendix A to part 75 of this chapter. (40 CFR 60.45(c)(3)(ii))

iv. The conversion procedures in 40 CFR 60.45(e) and (f) shall be used to convert the continuous monitoring data into units of the applicable standards. (40 CFR 60.45(e) and (f))

- 1) For any CEMS installed under paragraph (a) of this section, the following conversion procedures shall be used to convert the continuous monitoring data into units of the applicable standards (ng/J, lb/MMBtu): (40 CFR 60.45(e))

- (a) When a CEMS for measuring O₂ is selected, the measurement of the pollutant concentration and O₂ concentration shall each be on a consistent basis (wet or dry). Alternative procedures approved by the Administrator shall be used when measurements are on a wet basis. When measurements are on a dry basis, the following conversion procedure shall be used: (40 CFR 60.45(e)(1))

$$E = CF \left(\frac{20.9}{(20.9 - \%O_2)} \right)$$

Where E, C, F, and %O₂ are determined under paragraph (f) of this section.

- (b) When a CEMS for measuring CO₂ is selected, the measurement of the pollutant concentration and CO₂ concentration shall each be on a consistent basis (wet or dry) and the following conversion procedure shall be used: (40 CFR 60.45(e)(2))

$$E = CF_c \left(\frac{100}{\%CO_2} \right)$$

Where E, C, F_c and %CO₂ are determined under paragraph (f) of this section.

- 2) The values used in the equations under paragraphs (e)(1) and (2) of this section are derived as follows: (40 CFR 60.45(f))

- (a) E = pollutant emissions, ng/J (lb/MMBtu). (40 CFR 60.45(f)(1))
- (b) C = pollutant concentration, ng/dscm (lb/dscf), determined by multiplying the average concentration (ppm) for each one-hour period by 4.15×10^{-4} M ng/dscm per ppm (2.59×10^{-9} M lb/dscf per ppm) where M = pollutant molecular weight, g/g-mole (lb/lb-mole). M = 64.07 for SO₂ and 46.01 for NO_x. (40 CFR 60.45(f)(2))
- (c) %O₂, %CO₂ = O₂ or CO₂ volume (expressed as percent), determined with equipment specified under paragraph (a) of this section. (40 CFR 60.45(f)(3))
- (d) F, F_c = a factor representing a ratio of the volume of dry flue gases generated to the calorific value of the fuel combusted (F), and a factor representing a ratio of the volume of CO₂

generated to the calorific value of the fuel combusted (F_c), respectively. Values of F and F_c are given as follows: (40 CFR 60.45(f)(4))

- (i) For anthracite coal as classified according to ASTM D388 (incorporated by reference, see 40 CFR 60.17), $F = 2,723 \times 10^{-7}$ dscm/J (10,140 dscf/MMBtu) and $F_c = 0.532 \times 10^{-7}$ scm CO₂/J (1,980 scf CO₂/MMBtu). (40 CFR 60.45(f)(4)(i))
 - (ii) For subbituminous and bituminous coal as classified according to ASTM D388 (incorporated by reference, see 40 CFR 60.17), $F = 2.637 \times 10^{-7}$ dscm/J (9,820 dscf/MMBtu) and $F_c = 0.486 \times 10^{-7}$ scm CO₂/J (1,810 scf CO₂/MMBtu). (40 CFR 60.45(f)(4)(ii))
 - (iii) For liquid fossil fuels including crude, residual, and distillate oils, $F = 2.476 \times 10^{-7}$ dscm/J (9,220 dscf/MMBtu) and $F_c = 0.384 \times 10^{-7}$ scm CO₂/J (1,430 scf CO₂/MMBtu). (40 CFR 60.45(f)(4)(iii))
 - (iv) For gaseous fossil fuels, $F = 2.347 \times 10^{-7}$ dscm/J (8,740 dscf/MMBtu). For natural gas, propane, and butane fuels, $F_c = 0.279 \times 10^{-7}$ scm CO₂/J (1,040 scf CO₂/MMBtu) for natural gas, 0.322×10^{-7} scm CO₂/J (1,200 scf CO₂/MMBtu) for propane, and 0.338×10^{-7} scm CO₂/J (1,260 scf CO₂/MMBtu) for butane. (40 CFR 60.45(f)(4)(iv))
 - (v) For bark $F = 2.589 \times 10^{-7}$ dscm/J (9,640 dscf/MMBtu) and $F_c = 0.500 \times 10^{-7}$ scm CO₂/J (1,840 scf CO₂/MMBtu). For wood residue other than bark $F = 2.492 \times 10^{-7}$ dscm/J (9,280 dscf/MMBtu) and $F_c = 0.494 \times 10^{-7}$ scm CO₂/J (1,860 scf CO₂/MMBtu). (40 CFR 60.45(f)(4)(v))
 - (vi) For lignite coal as classified according to ASTM D388 (incorporated by reference, see 40 CFR 60.17), $F = 2.659 \times 10^{-7}$ dscm/J (9,900 dscf/MMBtu) and $F_c = 0.516 \times 10^{-7}$ scm CO₂/J (1,920 scf CO₂/MMBtu). (40 CFR 60.45(f)(4)(vi))
- (e) The owner or operator may use the following equation to determine an F factor (dscm/J or dscf/MMBtu) on a dry basis (if it is desired to calculate F on a wet basis, consult the Administrator) or F_c factor (scm CO₂/J, or scf CO₂/MMBtu) on either basis in lieu of the F or F_c factors specified in paragraph (f)(4) of this section: (40 CFR 60.45(f)(5))

$$F = 10^6 \frac{[227.2 (\%H) + 95.5 (\%C) + 35.6 (\%S) + 8.7 (\%N) - 28.7 (\%O)]}{GCV}$$

$$F_c = \frac{2.0 \times 10^{-3} (\%C)}{GCV \text{ (SI units)}}$$

$$F = 10^6 \frac{[3.64 (\%H) + 1.53 (\%C) + 0.57 (\%S) + 0.14 (\%N) - 0.46 (\%O)]}{GCV \text{ (English units)}}$$

$$F_c = \frac{20.0 (\%C)}{GCV \text{ (SI units)}}$$

$$F_c = \frac{321 \times 10^3 (\%C)}{GCV \text{ (English units)}}$$

- (i) %H, %C, %S, %N, and %O are content by weight of hydrogen, carbon, sulfur, nitrogen, and O₂(expressed as percent), respectively, as determined on the same basis as GCV by ultimate analysis of the fuel fired, using ASTM D3178 or D3176 (solid fuels), or computed from results using ASTM D1137, D1945, or D1946 (gaseous fuels) as applicable. (These five methods are incorporated by reference, see 40 CFR 60.17.) (40 CFR 60.45(f)(5)(i))
- (ii) GVC is the gross calorific value (kJ/kg, Btu/lb) of the fuel combusted determined by the ASTM test methods D2015 or D5865 for solid fuels and D1826 for gaseous fuels as applicable. (These three methods are incorporated by reference, see 40 CFR 60.17.) (40 CFR 60.45(f)(5)(ii))
- (iii) For affected facilities which fire both fossil fuels and nonfossil fuels, the F or F_c value shall be subject to the Administrator's approval. (40 CFR 60.45(f)(5)(iii))
- (f) For affected facilities firing combinations of fossil fuels and fossil fuels and wood residue, the F or F_c factors determined by paragraphs (f)(4) or (f)(5) of this section shall be prorated in accordance with the applicable formula as follows: (40 CFR 60.45(f)(6))

$$F = \sum_{i=1}^n X_i F_i \quad \text{or} \quad F_c = \sum_{i=1}^n X_i (F_c)_i$$

Where:

X_i = Fraction of total heat input derived from each type of fuel (e.g. natural gas, bituminous coal, wood residue, etc.);

F_i or $(F_c)_i$ = Applicable F or F_c factor for each fuel type determined in accordance with paragraphs (f)(4) and (f)(5) of this section; and

n = Number of fuels being burned in combination.

c. PM

i. The company shall follow one of the two options below to demonstrate compliance with PM standards:

1) Option 1: the owner or operator shall install, maintain, calibrate, and operate a PM CEMS for each steam generating unit.^{81, 82} (Regulation 2.16, section 4.1.1) (See Comment 2) (40 CFR 64)

(a) The use of PM CEMS as the measurement technique must be appropriate for the stack conditions.

(b) The PM CEMS must be installed, operated and maintained in accordance with the manufacturer's recommendations, applicable requirements in Subpart D, and General Provisions in 40 CFR 60.7 – 60.13.

(c) The PM CEMS must be certified in accordance with Performance Specification 11, Specifications and Test Procedures for Particulate Matter Continuous Emission Monitoring Systems at Stationary Sources, found in 40 CFR 60, Appendix B.

(d) A quality assurance/quality control program must be implemented in accordance with procedures in 40 CFR 60, Appendix F, Procedure 2 (Quality Assurance Requirements

⁸¹ According to LG&E's request, PM CEMS have been installed, calibrated, maintained, and operated for Unit 1. LG&E requested permission to remove COMS for Unit 3 and 4 under provisions in 40 CFR 60.13(i)(1), "Alternative monitoring requirements when installation of a continuous monitoring system or monitoring device specified by this part would not provide accurate measurements due to liquid water or other interferences caused by substances in the effluent gases." LG&E's proposal for Unit 3 and 4 was accepted in a letter from EPA dated Feb. 28, 2007. The District accordingly approved LG&E's request for removing COMS for Unit 1 and 2 providing PM CEMS are appropriately installed for these units.

⁸² The coal-fired boilers are subject to 40 CFR Part 64 - Compliance Assurance Monitoring (CAM) for Major Stationary Source since SO₂, PM, and NO_x emissions from each of the boilers may be greater than the major source threshold and control devices are required to achieve compliance with standards. On 5/21/2014, LG&E submitted a revised CAM Plan in which SO₂ and NO_x CEMS are used for compliance demonstration. PM CEMS is used to demonstrate compliance or provide an indication of continuous PM control.

for Particulate Matter Continuous Emission Monitoring Systems at Stationary Sources).

- (e) Compliance with the particulate matter emission limit promulgated at 40 CFR 60.42(a) will be based upon three-hour rolling average periods during source operation.
 - (f) LG&E must comply with all applicable recordkeeping and reporting requirements under Subpart D and under the General Provisions in 40 CFR 60.7 – 60.13. Quarterly excess emission reports must be submitted, and PM excess emissions shall be reported based upon three-hour rolling averages during source operation.
- 2) Option 2: the owner or operator shall conduct an annual EPA Reference Method 5 performance test following the testing requirements in Attachment B, Specific Condition b.ii.
- ii. If certified PM CEMS (Option 1) is used to demonstrate compliance with PM standards, the owner or operator shall record on an hourly basis all PM emission data, in lb/MMBtu, from PM CEMS.⁸³ (40 CFR 64)
 - iii. If annual PM testing (Option 2) is used to demonstrate compliance with PM standards, the owner or operator shall use PM CEMS as a performance indicator of continuous normal operation of the PM control devices and do the following:⁸³ (40 CFR 64)
 - 1) The owner or operator shall monitor and record all PM emission data from PM CEMS, which is used as the indicator of normal operation of the PM control devices.
 - 2) The owner or operator shall maintain daily records of any periods of time where the process was operating and the PM control devices were not operating or a declaration that the PM control devices operated at all times that day when the process was operating.
 - 3) If there is any time that the PM control devices are bypassed or not in operation when the process is operating, then the owner or operator shall keep a record of the following for each bypass event:

⁸³ The coal-fired boilers are subject to 40 CFR Part 64 - Compliance Assurance Monitoring (CAM) for Major Stationary Source since SO₂, PM, and NO_x emissions from each of the boilers may be greater than the major source threshold and control devices are required to achieve compliance with standards. On 5/21/2014, LG&E submitted a revised CAM Plan in which SO₂ and NO_x CEMS are used for compliance demonstration. PM CEMS is used to demonstrate compliance or provide an indication of continuous PM control.

- (a) Date;
- (b) Start time and stop time;
- (c) Identification of the control devices and process equipment;
- (d) PM emissions during the bypass in lb/hr;
- (e) Summary of the cause or reason for each bypass event;
- (f) Corrective action taken to minimize the extent or duration of the bypass event; and
- (g) Measures implemented to prevent reoccurrence of the situation that resulted in the bypass event.

d. Opacity

- i. If certified COMS is used to demonstrate compliance with opacity standards, the owner or operator shall record on an hourly basis all opacity from COMS.⁸⁴
- ii. If VE/Method 9 is used to demonstrate compliance with opacity standards, in order for the owner or operator to use its VE observations to satisfy the opacity monitoring requirement, the following conditions must be met:⁸⁴ (EPA Letter, 2007)
 - 1) On a weekly basis, the owner or operator shall attempt to perform VE observations in accordance with procedures in EPA Method 9.
 - 2) On the weeks when it is possible to collect unit-specific VE data, at least one hour of Method 9 data shall be collected for each unit.
 - 3) Records of the Method 9 readings shall be submitted with the quarterly excess emission reports for PM emissions.
- iii. The owner or operator shall keep a record of every Method 9 test performed or the reason why it could not be performed that day.
- iv. An owner or operator of an affected facility subject to an opacity standard under 40 CFR 60.42 that elects to not use a COMS because the affected facility burns only fuels as specified under paragraph (b)(1) of 40 CFR 60.45, monitors PM emissions as specified under paragraph (b)(5) of 40 CFR 60.45, or monitors CO emissions as specified under paragraph (b)(6) of 40 CFR 60.45, shall conduct a performance test using Method 9 of appendix A-4 of this part and the procedures in 40 CFR 60.11 to

⁸⁴ According to LG&E's request, PM CEMS have been installed, calibrated, maintained, and operated for Unit 1. LG&E requested permission to remove COMS for Unit 3 and 4 under provisions in 40 CFR 60.13(i)(1), "Alternative monitoring requirements when installation of a continuous monitoring system or monitoring device specified by this part would not provide accurate measurements due to liquid water or other interferences caused by substances in the effluent gases." LG&E's proposal for Unit 3 and 4 was accepted in a letter from EPA dated Feb. 28, 2007. The District accordingly approved LG&E's request for removing COMS for Unit 1 and 2 providing PM CEMS are appropriately installed for these units.

demonstrate compliance with the applicable limit in 40 CFR 60.42 by April 29, 2011 or within 45 days after stopping use of an existing COMS, whichever is later, and shall comply with either paragraph (b)(7)(i), (b)(7)(ii), or (b)(7)(iii) of 40 CFR 60.45. The observation period for Method 9 of appendix A-4 of this part performance tests may be reduced from 3 hours to 60 minutes if all 6-minute averages are less than 10 percent and all individual 15-second observations are less than or equal to 20 percent during the initial 60 minutes of observation. The permitting authority may exempt owners or operators of affected facilities burning only natural gas from the opacity monitoring requirements. (40 CFR 60.45(b)(7))

- 1) Except as provided in paragraph (b)(7)(ii) or (b)(7)(iii) of 40 CFR 60.45, the owner or operator shall conduct subsequent Method 9 of appendix A-4 of this part performance tests using the procedures in paragraph (b)(7) of 40 CFR 60.45 according to the applicable schedule in paragraphs (b)(7)(i)(A) through (b)(7)(i)(D) of 40 CFR 60.45, as determined by the most recent Method 9 of appendix A-4 of this part performance test results.
 - (a) If no visible emissions are observed, a subsequent Method 9 of appendix A-4 of this part performance test must be completed within 12 calendar months from the date that the most recent performance test was conducted; (40 CFR 60.45(b)(7)(i)(A))
 - (b) If visible emissions are observed but the maximum 6-minute average opacity is less than or equal to 5 percent, a subsequent Method 9 of appendix A-4 of this part performance test must be completed within 6 calendar months from the date that the most recent performance test was conducted; (40 CFR 60.45(b)(7)(i)(B))
 - (c) If the maximum 6-minute average opacity is greater than 5 percent but less than or equal to 10 percent, a subsequent Method 9 of appendix A-4 of this part performance test must be completed within 3 calendar months from the date that the most recent performance test was conducted; or (40 CFR 60.45(b)(7)(i)(C))
 - (d) If the maximum 6-minute average opacity is greater than 10 percent, a subsequent Method 9 of appendix A-4 of this part performance test must be completed within 45 calendar days from the date that the most recent performance test was conducted. (40 CFR 60.45(b)(7)(i)(D))

- 2) If the maximum 6-minute opacity is less than 10 percent during the most recent Method 9 of appendix A-4 of this part performance test, the owner or operator may, as an alternative to performing subsequent Method 9 of appendix A-4 of this part performance test, elect to perform subsequent monitoring using Method 22 of appendix A-7 of this part according to the procedures specified in paragraphs (b)(7)(ii)(A) and (B) of 40 CFR 60.45. (40 CFR 60.45(b)(7)(ii))
- (a) The owner or operator shall conduct 10 minute observations (during normal operation) each operating day the affected facility fires fuel for which an opacity standard is applicable using Method 22 of appendix A-7 of this part and demonstrate that the sum of the occurrences of any visible emissions is not in excess of 5 percent of the observation period (i.e., 30 seconds per 10 minute period). If the sum of the occurrence of any visible emissions is greater than 30 seconds during the initial 10 minute observation, immediately conduct a 30 minute observation. If the sum of the occurrence of visible emissions is greater than 5 percent of the observation period (i.e., 90 seconds per 30 minute period), the owner or operator shall either document and adjust the operation of the facility and demonstrate within 24 hours that the sum of the occurrence of visible emissions is equal to or less than 5 percent during a 30 minute observation (i.e., 90 seconds) or conduct a new Method 9 of appendix A-4 of this part performance test using the procedures in paragraph (b)(7) of 40 CFR 60.45 within 45 calendar days according to the requirements in 40 CFR 60.46(b)(3). (40 CFR 60.45(b)(7)(ii)(A))
- (b) If no visible emissions are observed for 30 operating days during which an opacity standard is applicable, observations can be reduced to once every 7 operating days during which an opacity standard is applicable. If any visible emissions are observed, daily observations shall be resumed. (40 CFR 60.45(b)(7)(ii)(B))
- 3) If the maximum 6-minute opacity is less than 10 percent during the most recent Method 9 of appendix A-4 of this part performance test, the owner or operator may, as an alternative to performing subsequent Method 9 of appendix A-4 performance tests, elect to perform subsequent monitoring using a digital opacity compliance system according to a site-specific monitoring plan approved by the Administrator. The observations shall be similar, but not necessarily identical, to the requirements in paragraph (b)(7)(ii) of

40 CFR 60.45. For reference purposes in preparing the monitoring plan, see OAQPS “Determination of Visible Emission Opacity from Stationary Sources Using Computer-Based Photographic Analysis Systems.” This document is available from the U.S. Environmental Protection Agency (U.S. EPA); Office of Air Quality and Planning Standards; Sector Policies and Programs Division; Measurement Policy Group (D243–02), Research Triangle Park, NC 27711. This document is also available on the Technology Transfer Network (TTN) under Emission Measurement Center Preliminary Methods. (40 CFR 60.45(b)(7)(iii))

- v. The owner or operator of an affected facility subject to the opacity limits in 40 CFR 60.42 that elects to monitor emissions according to the requirements in 40 CFR 60.45(b)(7) shall maintain records according to the requirements specified in paragraphs (h)(1) through (3) of 40 CFR 60.45, as applicable to the visible emissions monitoring method used. (40 CFR 60.45(h))
 - 1) For each performance test conducted using Method 9 of appendix A–4 of this part, the owner or operator shall keep the records including the information specified in paragraphs (h)(1)(i) through (iii) of 40 CFR 60.45. (40 CFR 60.45(h)(1))
 - (a) Dates and time intervals of all opacity observation periods; (40 CFR 60.45(h)(1)(i))
 - (b) Name, affiliation, and copy of current visible emission reading certification for each visible emission observer participating in the performance test; and (40 CFR 60.45(h)(1)(ii))
 - (c) Copies of all visible emission observer opacity field data sheets; (40 CFR 60.45(h)(1)(iii))
 - 2) For each performance test conducted using Method 22 of appendix A–4 of this part, the owner or operator shall keep the records including the information specified in paragraphs (h)(2)(i) through (iv) of 40 CFR 60.45. (40 CFR 60.45(h)(2))
 - (a) Dates and time intervals of all visible emissions observation periods; (40 CFR 60.45(h)(2)(i))
 - (b) Name and affiliation for each visible emission observer participating in the performance test; (40 CFR 60.45(h)(2)(ii))

- (c) Copies of all visible emission observer opacity field data sheets; and (40 CFR 60.45(h)(2)(iii))
 - (d) Documentation of any adjustments made and the time the adjustments were completed to the affected facility operation by the owner or operator to demonstrate compliance with the applicable monitoring requirements. (40 CFR 60.45(h)(2)(iv))
- 3) For each digital opacity compliance system, the owner or operator shall maintain records and submit reports according to the requirements specified in the site-specific monitoring plan approved by the Administrator. (40 CFR 60.45(h)(3))

vi. For coal silos (E8):

- 1) The owner or operator shall conduct a weekly one-minute visible emissions survey, during normal operation, of the PM Emission Points (stacks). For Emission Points without observed visible emissions during twelve consecutive operating weeks, the owner or operator may elect to conduct a monthly one-minute visible emission survey, during normal operation.
- 2) At Emission Points where visible emissions are observed, the owner or operator shall initiate corrective action within eight hours of the initial observation. If the visible emissions persist, the owner or operator shall perform or cause to be performed a Method 9 for stack emissions within 24 hours of the initial observation. If the opacity standard is exceeded, the owner or operator shall report the exceedance to the District, according to Regulation 1.07, and take all practicable steps to eliminate the exceedance.
- 3) The owner or operator shall maintain records, monthly, of the results of all visible emissions surveys and tests. Records of the results of any visible emissions survey shall include the date of the survey, the name of the person conducting the survey, whether or not visible emissions were observed, and what if any corrective action was performed. If an emission point is not being operated during a given month, then no visible emission survey needs to be performed and a negative declaration shall be entered in the record.

e. **TAC**

- i. The owner or operator shall monthly calculate and record TAC emissions for this unit in order to demonstrate compliance with the TAC emission standards.
 - ii. See Plant-wide Requirements S2.b.
- f. **HAP (40 CFR 63, Subpart UUUUU)**
- i. The owner or operator shall comply with 40 CFR 63, Subpart UUUUU (See Attachment A) no later than April 16, 2016.
 - ii. The owner or operator shall establish a site-specific minimum activated carbon injection rate for PAC injection system according to Attachment B, Specific Condition a.i. The owner or operator shall monitor and record the activated carbon injection rate during each operating day.⁸⁵
 - iii. The owner or operator shall monitor and record all Hg emission data from the Hg sorbent traps, which is used as the indicator of normal operation of the Hg control measures.
 - iv. The owner or operator shall monitor and record the pH of the reactant material in the FGD and any other parameters verified as having a direct effect on Hg emissions during each operating day, which is (are) used as the indicator(s) of normal operation of Hg control measures.⁸⁶
 - v. The owner or operator shall maintain records of which Hg control devices/measure was being used during each operating day.
- g. **112(r) Regulated Substances (Regulation 5.15)**
- If anhydrous ammonia is present at the stationary source in an amount greater than the threshold quantity specified in Regulation 5.15, the owner or operator shall monitor the processes and keep records as required by Regulation 5.15. (Construction Permit 225-01-C)
- h. **BART (40 CFR 52, Subpart S)**
- i. The owner or operator shall maintain daily records of the hours of operation.

⁸⁵ In a letter dated October 4, 2016, LG&E demonstrated that in certain circumstance EGUs at this plant can meet the MACT mercury standard at zero PAC injection rate. Therefore the source is allowed to use flexible mercury control measures, including PAC injection or liquid additive system, to achieve compliance with MACT mercury standard.

⁸⁶ LG&E has established normal pH range per monitoring records during consecutive 180 days. On 10/20/2016, LG&E reported that the normal pH range for this unit is 4.8 – 6.4.

- ii. The owner or operator shall, monthly, calculate and record the H₂SO₄ emissions on an average hourly basis for each operating calendar day.

S3. **Reporting** (Regulation 2.16, section 4.1.9.3)

The owner or operator shall submit quarterly compliance reports that include the information in this section.

a. **NO_x**

- i. The owner or operator shall identify all periods of exceeding a NO_x emission standard during a quarterly reporting period. The quarterly compliance report shall include the following:

- 1) Emission Unit ID number and emission point ID number;
- 2) Identification of all periods during which a deviation occurred;
- 3) A description, including the magnitude, of the deviation;
- 4) If known, the cause of the deviation;
- 5) A description of all corrective actions taken to abate the deviation; and
- 6) If no deviations occur during a quarterly reporting period, the report shall contain a negative declaration.

- ii. The owner or operator shall submit a written report of excess emissions and the nature and cause of the excess emissions if known. The averaging period used for data reporting should correspond to the averaging period specified in the emission test method used to determine compliance with an emission standard for the pollutant/source category in question. All quarterly reports shall be postmarked by the 30th day following the end of each calendar quarter. The required report shall include: (Regulation 6.02, section 16.1)

- 1) For gaseous measurements, the summary shall consist of hourly averages in the units of the applicable standard. The hourly averages shall not appear in the written summary, but shall be made available electronically. (Regulation 6.02, section 16.3)
- 2) The data and time identifying each period during which the continuous monitoring system was inoperative, except for zero and span checks, and the nature of system repairs or adjustment shall be reported. Proof of continuous monitoring system performance whenever system repairs or adjustments have been made is required. (Regulation 6.02, section 16.4)
- 3) When no excess emissions have occurred and the continuous monitoring systems have been inoperative, repaired, or adjusted,

such information shall be included in the report. (Regulation 6.02, section 16.5)

- 4) Owners or operators of affected facilities shall maintain a file of all information reported in the quarterly summaries, and all other data collected either by the continuous monitoring system or as necessary to convert monitoring data to the units of the applicable standard for a minimum of two years from the date of collection of such data or submission of such summaries. (Regulation 6.02, section 16.6)
- iii. The owner or operator shall comply with the reporting requirements for the Acid Rain Permit No.176-97-AR (R4), specified in 40 CFR 75, Subpart G. Notifications, Monitoring Plans, Initial Certification and Recertification Applications, Quarterly Reports, Opacity Reports, Petitions to the Administrator, and Retired Unit Petitions shall be submitted as specified in Subpart G - reporting requirements. (See Attachment E)
 - iv. The owner or operator shall comply with the reporting requirements for the Title IV NO_x Budget Emission Limitation, 0.46 lb/MMBtu, as specified in 40 CFR Part 76.
 - v. Excess emissions for affected facilities using a CEMS for measuring NO_x are defined as: (40 CFR 60.45(g)(3))
 - 1) For affected facilities electing not to comply with 40 CFR 60.44(e), any three-hour period during which the average emissions (arithmetic average of three contiguous one-hour periods) exceed the applicable standards in 40 CFR 60.44; or(40 CFR 60.45(g)(3)(i))
 - 2) For affected facilities electing to comply with 40 CFR 60.44(e), any 30 operating day period during which the average emissions (arithmetic average of all one-hour periods during the 30 operating days) of NO_x as measured by a CEMS exceed the applicable standard in 40 CFR 60.44. (40 CFR 60.45(g)(3)(ii))
- b. **SO₂**
- i. The owner or operator shall identify all periods of exceeding a SO₂ emission standard during a quarterly reporting period. The report shall include the following:
 - 1) Emission Unit ID number and emission point ID number;
 - 2) Identification of all periods during which a deviation occurred;

- 3) A description, including the magnitude, of the deviation;
 - 4) If known, the cause of the deviation;
 - 5) A description of all corrective actions taken to abate the deviation; and
 - 6) If no deviations occur during a quarterly reporting period, the report shall contain a negative declaration.
- ii. The owner or operator shall submit a written report of excess emissions and the nature and cause of the excess emissions if known. See Specific Condition S3.a.ii.
 - iii. The owner or operator shall comply with the reporting requirements for the Acid Rain Permit No.176-97-AR (R4), specified in 40 CFR 75, Subpart G. Notifications, monitoring Plans, Initial Certification and Recertification Applications, Quarterly Reports, Opacity Reports, Petitions to the Administrator, and Retired Unit Petitions shall be submitted as specified in Subpart G - reporting requirements. (See Attachment E)
 - iv. Excess emissions for affected facilities are defined as: (40 CFR 60.45(g)(2))
 - 1) For affected facilities electing not to comply with 40 CFR 60.43(d), any three-hour period during which the average emissions (arithmetic average of three contiguous one-hour periods) of SO₂ as measured by a CEMS exceed the applicable standard in 40 CFR 60.43; or (40 CFR 60.45(g)(2)(i))
 - 2) For affected facilities electing to comply with 40 CFR 60.43(d), any 30 operating day period during which the average emissions (arithmetic average of all one-hour periods during the 30 operating days) of SO₂ as measured by a CEMS exceed the applicable standard in 40 CFR 60.43. (40 CFR 60.45(g)(2)(ii))
- c. **PM**
- i. The owner or operator shall identify all periods of exceeding a PM emission standard during a quarterly reporting period. The report shall include the following:
 - 1) Emission Unit ID number and emission point ID number;
 - 2) The date and duration (including the start and stop time) during which a deviation occurred;
 - 3) The magnitude of excess emissions;
 - 4) Description of the deviation and summary information on the cause or reason for excess emissions;

- 5) Corrective action taken to minimize the extent and duration of each excess emissions event;
 - 6) Measures implemented to prevent reoccurrence of the situation that resulted in excess PM emissions; or
 - 7) If no deviations occur during a quarterly reporting period, the report shall contain a negative declaration.
- ii. The owner or operator shall submit a written report of excess emissions and the nature and cause of the excess emissions if known. See Specific Condition S3.a.ii.
 - iii. Excess emissions for affected facilities using a CEMS for measuring PM are defined as any boiler operating day period during which the average emissions (arithmetic average of all operating one-hour periods) exceed the applicable standards in 40 CFR 60.42. (40 CFR 60.45(g)(4))

d. Opacity

- i. The owner or operator shall identify all periods of exceeding an opacity standard during a quarterly reporting period. The report shall include the following:
 - 1) Any deviation from the requirement to perform daily (or monthly, if required) visible emission surveys or Method 9 tests and documented reason;
 - 2) Any deviation from the requirement to record the results of each VE survey and Method 9 test performed and documented reason;
 - 3) The number, date, and time of each VE Survey where visible emissions were observed and the results of the Method 9 test performed;
 - 4) Identification of all periods of exceeding an opacity standard;
 - 5) Description of any corrective action taken for each exceedance of the opacity standard; or
 - 6) If no deviations occur during a quarterly reporting period, the report shall contain a negative declaration.
- ii. The owner or operator shall comply with the reporting requirements for the Acid Rain Permit No.176-97-AR (R4), specified in 40 CFR 75, Subpart G. Notifications, monitoring Plans, Initial Certification and Recertification Applications, Quarterly Reports, Opacity Reports, Petitions to the Administrator, and Retired Unit Petitions shall be submitted as specified in Subpart G - reporting requirements. (See Attachment E) (Regulation 6.47, section 3.4 and 3.5 referencing 40 CFR Parts 75 and 76)

iii. Excess emissions are defined as any six-minute period during which the average opacity of emissions exceeds 20 percent opacity, except that one six-minute average per hour of up to 27 percent opacity need not be reported. (40 CFR 60.45(g)(1))

iv. For coal silos (E8):

The owner or operator shall identify all periods of exceeding an opacity standard during a quarterly reporting period. The report shall include the following:

- 1) Emission Unit ID number, Stack ID number, and/or Emission point ID number;
- 2) The beginning and ending date of the reporting period;
- 3) The date, time and results of each exceedance of the opacity standard;
- 4) Description of any corrective action taken for each exceedance.

e. **TAC**

i. The owner or operator shall identify all periods of exceeding a TAC emission standard during a quarterly reporting period. The report shall include the following:

- 1) Emission Unit ID number and emission point ID number;
- 2) Identification of all periods during which a deviation occurred;
- 3) A description, including the magnitude, of the deviation;
- 4) If known, the cause of the deviation;
- 5) A description of all corrective actions taken to abate the deviation; and
- 6) If no deviations occur during a quarterly reporting period, the report shall contain a negative declaration.

ii. See Plant-wide Requirements S2.b.

f. **HAP** (40 CFR 63, Subpart UUUUU)

i. The owner or operator shall comply with 40 CFR 63, Subpart UUUUU (See Attachment A) no later than April 16, 2016.

ii. Report normal pH range of reactant material in the FGD and normal range of any other parameters verified as having a direct effect on Hg emission within 30 days of establishing the normal range.

iii. The owner or operator shall identify all periods of the activated carbon injection rate are less than the minimum injection rate, or the pH of the

reactant material in the FGD are out of normal range, or anytime other verified parameters are outside of their normal range, and any corrective action taken for each exceedance.

g. 112(r) Regulated Substances (Regulation 5.15)

If anhydrous ammonia is present at the stationary source in an amount greater than the threshold quantity specified in Regulation 5.15, the owner or operator shall comply with the reporting requirements specified in Regulation 5.15. (Construction Permit 225-01-C)

h. BART (40 CFR 52, Subpart S)

The owner or operator shall identify all periods of exceeding a H₂SO₄ emission standard during a quarterly reporting period. The report shall include the following:

- 1) Emission Unit ID number and emission point ID number;
- 2) The date and duration (including the start and stop time) during which a deviation occurred;
- 3) The magnitude of excess emissions;
- 4) Description of the deviation and summary information on the cause or reason for excess emissions;
- 5) Corrective action taken to minimize the extent and duration of each excess emissions event;
- 6) Measures implemented to prevent reoccurrence of the situation that resulted in excess H₂SO₄ emissions; or
- 7) If no deviations occur during a quarterly reporting period, the report shall contain a negative declaration.

S4. Testing (Regulation 2.16, section 4.1.9.1)

a. Control efficiency determination

The owner or operator shall conduct performance test for the new EGU control device C30 and C31, according to the testing requirements in Attachment B, C, and G and Attachment C.^{87,88} (Regulation 2.16, section 4.1.9.1) (See Comment 5 and 9)

⁸⁷ Per an EPA rule change ("Restructuring of the Stationary Source Audit Program." Federal Register 75:176 (September 13, 2010) pp 55636-55657), if an audit sample is required by the test method, sources became responsible for obtaining the audit samples directly from accredited audit sample suppliers, not the regulatory agencies.

⁸⁸ According to permit 34595-12-C, the source is required to conduct stack tests to obtain the actual emission factors and control efficiencies.

U4 Comments

1. Boiler (E7) has TAC emission standards since its EA Demonstration was based on controlled PTE. If the controlled PTE for the TAC is less than de minimis level, De Minimis is listed as the basis of the limit. If the controlled PTE for the TAC is greater than de minimis level, modeling results were used to calculate risk value to compare to the EA Goals. In this case, controlled is used as the basis of the limit. TAC emissions for the coal silos (E8) are de minimis according to Regulation 5.21, section 2.1. The TAC emission limits determined by de minimis values shall be updated each time when the District revises the BAC/de minimis values for these TACs. The current de minimis values per TAC list revised on 10/14/2013 are as the following:

| TAC Name | CAS # | De minimis values | |
|----------------------------|-----------|-------------------|-----------|
| | | (lb/hr) | (lb/yr) |
| Benzene | 71-43-2 | 0.243 | 216 |
| Bromoform | 75-25-2 | 0.4914 | 437 |
| Methylene chloride | 75-09-2 | 54 | 48,000 |
| Tetrachloroethylene (Perc) | 127-18-4 | 2.079 | 1,848 |
| Toluene | 108-88-3 | 2700 | 2,400,000 |
| Xylene | 1330-20-7 | 54 | 48,000 |
| Hydrochloric acid | 7647-01-0 | 10.8 | 9,600 |

Emission Unit U8: Fly ash storage & handling unit**U8 Applicable Regulations:**

| FEDERALLY ENFORCEABLE REGULATIONS | | |
|--|--|----------------------------|
| Regulation | Title | Applicable Sections |
| 7.08 | Standards of Performance for New Affected Facilities | 1, 2, 3, 4, 5, 6 |

| DISTRICT ONLY ENFORCEABLE REGULATIONS | | |
|--|---|----------------------------|
| Regulation | Title | Applicable Sections |
| 5.00 | Definitions | 1, 2 |
| 5.01 | General Provisions | 1 through 2 |
| 5.20 | Methodology for Determining Benchmark Ambient Concentration of a Toxic Air Contaminant | 1 through 6 |
| 5.21 | Environmental Acceptability for Toxic Air Contaminants | 1 through 5 |
| 5.22 | Procedures for Determining the Maximum Ambient Concentration of a Toxic Air Contaminant | 1 through 5 |
| 5.23 | Categories of Toxic Air Contaminants | 1 through 6 |

U8 Equipment:⁸⁹

| Emission Point | Description | Applicable Regulation | Control ID | Stack ID |
|-----------------------|---|--|-------------------|-----------------|
| E13 | One (1) flyash silo designated as Silo A, make Flex Kleen | 5.00, 5.01, 5.20, 5.21, 5.22, 5.23, 7.08 | C15 | S13 |
| | One (1) flyash silo designated as Silo B, make Wheelabrator-Fry | | C16 | S14 |
| E31 | Silo A dry truck load-out (75 tph) and silo B dry truck load-out (47.5 tph), make DCL | | C37, C38 | S42, S43 |
| E32 | Silo A railcar load-out, made Stephens Mfg. | 5.00, 5.01, 5.20, 5.21, 5.22, 5.23, 7.08 | C24 | S22 |
| | Silo B railcar load-out, made Stephens Mfg. | | C25 | S23 |
| E33 | Silo A and B wet truck load-out, make Ash Conveying Technologies | | N/A | N/A |

⁸⁹ This unit incorporated construction permit 143-05-C and 37-07-C for railcar loading process (E32), 144-05-C and 38-07-C for railcar loading baghouses (C24, C25), and 145-05-C for truck loading process (E31, E33).

U8 Control Devices:

| ID | Description | Performance Indicator | Stack ID |
|-----------|--|---|-----------------|
| C15 | One (1) baghouse for Silo A, make Flex Kleen | Pressure drop range 0.1" to 5.0" water column | S13 |
| C16 | One (1) baghouse for Silo B, make Wheelabrator - Frye | Pressure drop range 0.1" to 5.0" water column | S14 |
| C24 | One (1) baghouse for Silo A railcar load-out, make Stephens Mfg | N/A (See Comment 1) | S22 |
| C25 | One (1) baghouse for Silo B railcar load-out, make Stephens Mfg | N/A (See Comment 1) | S23 |
| C37 | One (1) filter for Silo A and B air sliders, make DCL, model VML 185 | N/A (See Comment 1) | S42 |
| C38 | One (1) filter for Silo A and B loading spout, make DCL, model CFM 330 | N/A (See Comment 1) | S43 |

U8 Specific Conditions

S1. Standards (Regulation 2.16, section 4.1.1)

a. PM

- i. The owner or operator shall not allow PM emissions from emission point E13 to exceed 34.9 lbs/hr based on actual operating hours in a calendar day.⁹⁰ (Regulation 7.08, section 3.3)
- ii. The owner or operator shall not allow PM emissions from emission point E31 to exceed 32.4 lbs/hr based on actual operating hours in a calendar day.⁹⁰ (Regulation 7.08, section 3.3) (Permit 145-05-C)
- iii. The owner or operator shall not allow PM emissions from emission point E32 to exceed 30.9 lbs/hr based on actual operating hours in a calendar day.⁹⁰ (Regulation 7.08, section 3.3) (Permit 144-05-C)
- iv. The owner or operator shall not allow PM emissions from emission point E33 to exceed 38.6 lbs/hr based on actual operating hours in a calendar day.⁹⁰ (Regulation 7.08, section 3.3)

b. Opacity

The owner or operator shall not allow visible emissions to equal or exceed 20% opacity. (Regulation 7.08, section 3.1.1)

c. TAC

- i. The owner or operator shall operate and maintain the baghouse for flyash silo (E13), as recommended by the manufacturer, at all times the process equipment is in operation, including periods of startup, shutdown, and malfunction, in a manner consistent with good air pollution control practice to meet the standards. (Regulation 2.16, section 4.1.1)
- ii. The owner or operator shall not allow TAC emissions for flyash silo (E13) to exceed the TAC emission standards listed in the following table.⁹¹ (Regulation 5.21, section 4.2 and section 4.3) (See Comment 1)

⁹⁰ It has been demonstrated that the PM emissions cannot exceed the PM standards specified in Regulation 7.08 uncontrolled. However, there are monitoring, record keeping and reporting requirements associated with any times that the control devices are not in place and the process is operated. STAR limits are based upon controlled emissions.

⁹¹ This table for TAC emission standards has been revised to exclude Category 3 and 4 TACs for existing sources and use “de minimis values”, instead of actual numbers for current de minimis levels, as emission standards.

| TAC | CAS # | TAC Limits Determination | |
|--------------|------------|--------------------------------------|-----------------|
| | | (lbs/yr) | Basis of Limits |
| Arsenic | 7440-38-2 | 1.20 | Controlled PTE |
| Cadmium | 7440-43-9 | De minimis values
(See Comment 1) | De Minimis |
| Chromium III | 16065-83-1 | | De Minimis |
| Chromium VI | 7440-47-3 | | De Minimis |
| Nickel | 7440-02-0 | | De Minimis |
| Cobalt | 7440-48-4 | | De Minimis |
| Lead | 7439-92-1 | | De Minimis |
| Manganese | 7439-96-5 | | De Minimis |

iii. See Plant-wide Requirements S1.b.

S2. **Monitoring and Record Keeping** (Regulation 2.16, sections 4.1.9.1 and 4.1.9.2)

The owner or operator shall maintain the required records for a minimum of 5 years and make the records readily available to the District upon request.

a. **PM**

There are no routine monitoring and record keeping requirements for this pollutant.

b. **Opacity**

- i. The owner or operator shall conduct a monthly one-minute visible emissions survey, during normal operation, of the emission points. No more than four emission points shall be observed simultaneously. The opacity surveys can be performed on the building exhaust points if the process is inside an enclosure.
- ii. At emission points where visible emissions are observed, the owner or operator shall initiate corrective action within eight hours of the initial observation. If correction actions are taken then a follow-up visible emission survey shall be made. If the visible emissions persist, the owner or operator shall perform or cause to be performed a Method 9, in accordance with 40 CFR Part 60, Appendix A, within 24 hours of the initial observation.
- iii. The owner or operator shall maintain records, monthly, of the results of all visible emissions surveys and tests. Records of the results of any visible emissions survey shall include the date of the survey, the name of the person conducting the survey, whether or not visible emissions were observed, and what if any corrective action was performed. If an emission point is not being operated during a given month, then no visible emission survey needs to be performed and a negative declaration shall be entered in the record.

c. **TAC**

- i. The owner or operator shall perform sampling and lab analysis for the flyash in order to determine the TAC concentrations, at least once every six months.
- ii. The owner or operator shall calculate the TAC emissions at least once every six months. The average TAC concentrations of all sampling results during the previous 12 months combined with the sampling results from the current semiannual period shall be used for emission calculations.
- iii. The owner or operator shall monitor and record the pressure drop across baghouse C15 and C16, which is used as the indicator of normal operation of the baghouses, at least once each per operating day. The normal pressure drop range for C15 and C16 is 0.1” to 5.0” water column.
- iv. The owner or operator shall maintain daily records of any periods of time where the process was operating and the baghouse C15 or C16 was not operating or a declaration that the baghouse operated at all times that day when the process was operating.
- v. If there is any time that the baghouse C15 or C16 is bypassed or not in operation, such as the filters are not in place, etc, when the process is operating, then the owner or operator shall keep a record of the following for each bypass event:
 - 1) Date;
 - 2) Start time and stop time;
 - 3) Identification of the baghouse and process equipment;
 - 4) TAC emissions during the bypass in lb/hr;
 - 5) Summary of the cause or reason for each bypass event;
 - 6) Corrective action taken to minimize the extent or duration of the bypass event; and
 - 7) Measures implemented to prevent reoccurrence of the situation that resulted in the bypass event.
- vi. See Plant-wide Requirements S2.b.

S3. **Reporting** (Regulation 2.16, section 4.1.9.3)

The owner or operator shall submit quarterly compliance reports that include the information in this section.

a. **PM**

There are no routine reporting requirements for this pollutant.

b. Opacity

The owner or operator shall identify all periods of exceeding an opacity standard during a quarterly reporting period. The report shall include the following:

- 1) Any deviation from the requirement to perform daily (or monthly, if required) visible emission surveys or Method 9 tests;
- 2) Any deviation from the requirement to record the results of each VE survey and Method 9 test performed;
- 3) The date and time of each VE Survey where visible emissions were observed and the results of any Method 9 test performed;
- 4) The date, time and results of follow-up VE survey;
- 5) The date, time, and results of any Method 9 test performed;
- 6) Identification of all periods of exceeding an opacity standard; and
- 7) If no deviations occur during a quarterly reporting period, the report shall contain a negative declaration.

c. TAC

- i. The owner or operator shall identify all periods of the pressure drop across the baghouse C15 and C16 exceeding the normal range and any corrective action taken for each exceedance.
- ii. The owner or operator shall report the following information regarding By-Pass Activity in the quarterly compliance reports.
 - 1) Number of times the vent stream by-passes the baghouse C15 or C16 and is vented to the atmosphere;
 - 2) Duration of each by-pass to the atmosphere;
 - 3) Calculated pound per hour TAC emissions for each by-pass; or
 - 4) A negative declaration if no by-passes occurred.
- iii. See Plant-wide Requirements S2.b.

U8 Comments

1. The flyash silo (E13) has TAC emission standards since its EA Demonstration was based on controlled PTE. If the controlled PTE for the TAC is less than de minimis level, use De Minimis as limit. If the controlled PTE for the TAC is greater than de minimis level, modeling results were used to calculate risk value to compare to the EA Goals. In this case, controlled is used as limit. The TAC emission limits determined by de minimis values shall be updated each time when the District revises the BAC/de minimis values

for these TACs. The current de minimis values per TAC list revised on 10/14/2013 are as the following:

| TAC Name | CAS # | De minimis values | |
|--------------|------------|-------------------|---------|
| | | (lb/hr) | (lb/yr) |
| Cadmium | 7440-43-9 | 0.0003 | 0.27 |
| Chromium III | 16065-83-1 | 0.1 | 109.5 |
| Chromium VI | 7440-47-3 | 4.5E-05 | 0.040 |
| Nickel | 7440-02-0 | 0.0021 | 1.82 |
| Cobalt | 7440-48-4 | 0.00022 | 0.192 |
| Lead | 7439-92-1 | 0.043 | 38.4 |
| Manganese | 7439-96-5 | 0.027 | 24 |

Emission Unit U9: Fly ash transfer bins**U9 Applicable Regulations:**

| FEDERALLY ENFORCEABLE REGULATIONS | | |
|--|--|----------------------------|
| Regulation | Title | Applicable Sections |
| 7.08 | Standards of Performance for New Affected Facilities | 1, 2, 3, 4, 5, 6 |

| DISTRICT ONLY ENFORCEABLE REGULATIONS | | |
|--|---|----------------------------|
| Regulation | Title | Applicable Sections |
| 5.00 | Definitions | 1, 2 |
| 5.01 | General Provisions | 1 through 2 |
| 5.20 | Methodology for Determining Benchmark Ambient Concentration of a Toxic Air Contaminant | 1 through 6 |
| 5.21 | Environmental Acceptability for Toxic Air Contaminants | 1 through 5 |
| 5.22 | Procedures for Determining the Maximum Ambient Concentration of a Toxic Air Contaminant | 1 through 5 |
| 5.23 | Categories of Toxic Air Contaminants | 1 through 6 |

U9 Equipment:

| Emission Point | Description | Applicable Regulation | Control ID | Stack ID |
|-----------------------|---|--|-------------------|-----------------|
| E16 | One (1) flyash transfer bin with two (2) separators for Unit 1 and 2. Total capacity of transfer bin E16, E17, and E18 is 80.5 tph. | 5.00, 5.01, 5.20, 5.21, 5.22, 5.23, 7.08 | C19 | S17, S24, S25 |
| E17 | One (1) flyash transfer bin with two (2) separators for Unit 3. | | C20 | S18, S26, S27 |
| E18 | One (1) flyash transfer bin with two (2) separators for Unit 4. | | C21 | S19, S28, S29 |

U9 Control Devices:

| ID | Description | Performance Indicator | Stack ID |
|-----------|---|---|-----------------|
| C19 | One (1) baghouse for Unit 1 & 2 transfer bin, make Mikro-Pulsaire | Pressure drop range 1.0" to 6.0" water column ⁹² | S17, S24, S25 |
| C20 | One (1) baghouse for Unit 3 transfer bin, make Mikro-Pulsaire | | S18, S26, S27 |
| C21 | One (1) baghouse for Unit 4 transfer bin, make Mikro-Pulsaire | | S19, S28, S29 |

⁹² According to permit 145-97-TV (R1), LG&E has established the normal pressure drop range for the baghouses after ninety (90) consecutive days of observation and submitted the report on March 11, 2015. LG&E revised the normal pressure drop range on November 1, 2016.

U9 Specific Conditions

S1. Standards (Regulation 2.16, section 4.1.1)

a. PM

The owner or operator shall not allow PM emissions from emission point E16, E17, or E18 to exceed 34.9 lbs/hr for all three emission points combined based on actual operating hours in a calendar day.⁹³ (Regulation 7.08, section 3.3)

b. Opacity

The owner or operator shall not allow visible emissions to equal or exceed 20% opacity. (Regulation 7.08, section 3.1.1)

c. TAC

i. The owner or operator shall operate and maintain the baghouses, as recommended by the manufacturer, at all times the process equipment is in operation, including periods of startup, shutdown, and malfunction, in a manner consistent with good air pollution control practice to meet the standards. (Regulation 2.16, section 4.1.1)

ii. The owner or operator shall not allow TAC emissions for this unit to exceed the TAC emission standards determined based upon the EA Demo provided to the District.⁹⁴ (Regulation 5.21, section 4.2 and section 4.3) (See Comment 1)

| TAC | CAS # | TAC Limits Determination | |
|--------------|------------|--------------------------------------|-----------------|
| | | (lbs/yr) | Basis of Limits |
| Arsenic | 7440-38-2 | 1.20 | Controlled PTE |
| Cadmium | 7440-43-9 | De minimis values
(See Comment 1) | De Minimis |
| Chromium III | 16065-83-1 | | De Minimis |
| Chromium VI | 7440-47-3 | | De Minimis |
| Nickel | 7440-02-0 | | De Minimis |
| Cobalt | 7440-48-4 | | De Minimis |
| Lead | 7439-92-1 | | De Minimis |
| Manganese | 7439-96-5 | | De Minimis |

iii. See Plant-wide Requirements S1.b.

⁹³ It has been demonstrated that the PM emissions cannot exceed the PM standards specified in Regulation 7.08 uncontrolled

⁹⁴ This table for TAC emission standards has been revised to exclude Category 3 and 4 TACs for existing sources and use “de minimis values”, instead of actual numbers for current de minimis levels, as emission standards.

S2. Monitoring and Record Keeping (Regulation 2.16, sections 4.1.9.1 and 4.1.9.2)

The owner or operator shall maintain the required records for a minimum of 5 years and make the records readily available to the District upon request.

a. PM

There are no routine monitoring and record keeping requirements for this pollutant.

b. Opacity

i. The owner or operator shall conduct a monthly one-minute visible emissions survey, during normal operation, of the emission points. No more than four emission points shall be observed simultaneously. The opacity surveys can be performed on the building exhaust points if the process is inside an enclosure.

ii. At emission points where visible emissions are observed, the owner or operator shall initiate corrective action within eight hours of the initial observation. If correction actions are taken then a follow-up visible emission survey shall be made. If the visible emissions persist, the owner or operator shall perform or cause to be performed a Method 9, in accordance with 40 CFR Part 60, Appendix A, 24 hours of the initial observation.

iii. The owner or operator shall maintain records, monthly, of the results of all visible emissions surveys and tests. Records of the results of any visible emissions survey shall include the date of the survey, the name of the person conducting the survey, whether or not visible emissions were observed, and what if any corrective action was performed. If an emission point is not being operated during a given month, then no visible emission survey needs to be performed and a negative declaration shall be entered in the record.

c. TAC

i. The owner or operator shall perform sampling and lab analysis for the flyash in order to determine the TAC concentrations, at least once every six months.

ii. The owner or operator shall calculate the TAC emissions at least once every six months. The average TAC concentrations of all sampling results during the previous 12 months combined with the sampling results from the current semiannual period shall be used for emission calculations.

- iii. The owner or operator shall monitor and record the pressure drop across baghouses. The normal pressure drop range for the baghouses is 1.0" to 6.0" water column.
- iv. The owner or operator shall maintain daily records of any periods of time where the process was operating and the baghouse was not operating or a declaration that the baghouse operated at all times that day when the process was operating.
- v. If there is any time that the baghouse is bypassed or not in operation, such as the filters are not in place, etc, when the process is operating, then the owner or operator shall keep a record of the following for each bypass event:
 - 1) Date;
 - 2) Start time and stop time;
 - 3) Identification of the baghouse and process equipment;
 - 4) TAC emissions during the bypass in lb/hr;
 - 5) Summary of the cause or reason for each bypass event;
 - 6) Corrective action taken to minimize the extent or duration of the bypass event; and
 - 7) Measures implemented to prevent reoccurrence of the situation that resulted in the bypass event.
- vi. See Plant-wide Requirements S2.b.

S3. **Reporting** (Regulation 2.16, section 4.1.9.3)

The owner or operator shall submit quarterly compliance reports that include the information in this section.

a. **PM**

There are no routine reporting requirements for this pollutant.

b. **Opacity**

The owner or operator shall identify all periods of exceeding an opacity standard during a quarterly reporting period. The report shall include the following:

- 1) Any deviation from the requirement to perform daily (or monthly, if required) visible emission surveys or Method 9 tests;
- 2) Any deviation from the requirement to record the results of each VE survey and Method 9 test performed;
- 3) The date and time of each VE Survey where visible emissions were observed and the results of any Method 9 test performed;

- 4) The date, time and results of follow-up VE survey;
- 5) The date, time, and results of any Method 9 test performed;
- 6) Identification of all periods of exceeding an opacity standard; and
- 7) If no deviations occur during a quarterly reporting period, the report shall contain a negative declaration.

c. **TAC**

- i. The owner or operator shall identify all periods of the pressure drop across the baghouses exceeding the normal range and any corrective action taken for each exceedance.
- ii. The owner or operator shall report the following information regarding By-Pass Activity in the quarterly compliance reports.
 - 1) Number of times the vent stream by-passes the baghouse and is vented to the atmosphere;
 - 2) Duration of each by-pass to the atmosphere;
 - 3) Calculated pound per hour TAC emissions for each by-pass; or
 - 4) A negative declaration if no by-passes occurred.
- iii. See Plant-wide Requirements S2.b.

U9 Comments

1. This unit has TAC emission standards since its EA Demonstration was based on controlled PTE. If the controlled PTE for the TAC is less than de minimis level, use De Minimis as limit. If the controlled PTE for the TAC is greater than de minimis level, modeling results were used to calculate risk value to compare to the EA Goals. In this case, controlled is used as limit. The TAC emission limits determined by de minimis values shall be updated each time when the District revises the BAC/de minimis values for these TACs. The current de minimis values per TAC list revised on 10/14/2013 are as the following:

| TAC Name | CAS # | De minimis values | |
|--------------|------------|-------------------|---------|
| | | (lb/hr) | (lb/yr) |
| Cadmium | 7440-43-9 | 0.0003 | 0.27 |
| Chromium III | 16065-83-1 | 0.1 | 109.5 |
| Chromium VI | 7440-47-3 | 4.5E-05 | 0.040 |
| Nickel | 7440-02-0 | 0.0021 | 1.82 |
| Cobalt | 7440-48-4 | 0.00022 | 0.192 |
| Lead | 7439-92-1 | 0.043 | 38.4 |
| Manganese | 7439-96-5 | 0.027 | 24 |

Emission Unit U12: Limestone processing operation**U12 Applicable Regulations:**

| FEDERALLY ENFORCEABLE REGULATIONS | | |
|--|--|---|
| Regulation | Title | Applicable Sections |
| 7.08 | Standards of Performance for New Affected Facilities | 1, 2, 3 |
| 40 CFR 60 Subpart OOO | Standards of Performance for Nonmetallic Mineral Processing Plants | 60.670, 60.671, 60.672(b)(e), 60.673, 60.675(d), 60.676(f)(j) |

| DISTRICT ONLY ENFORCEABLE REGULATIONS | | |
|--|--|----------------------------|
| Regulation | Title | Applicable Sections |
| 7.02 | Federal New Source Performance Standards Incorporated by Reference | 1.1, 1.72, 2, 3, 4, 5 |

U12 Equipment:⁹⁵

| Emission Point | Description | Applicable Regulation | Control ID | Stack ID |
|--|---|------------------------------|-------------------|-----------------|
| E24 | One (1) barge unloading operation with unloading hopper, rated capacity 750 tph | 7.08 | N/A | N/A |
| E25 | One (1) transfer point from conveyor to storage pile with receiving rate capacity 1,000 tph | 7.08, 40 CFR 60 Subpart OOO | N/A | N/A |
| E26 | One (1) belt conveyor LA, rated capacity 1000 tph, from hopper to belt conveyor LB | 7.08, 40 CFR 60 Subpart OOO | N/A | N/A |
| E27 | One (1) belt conveyor LB, rated capacity 1000 tph, from belt conveyor LA to storage pile | 7.08, 40 CFR 60 Subpart OOO | N/A | N/A |
| E28 | Three (3) limestone crushers* with a total capacity 145 tph | 7.08, 40 CFR 60 Subpart OOO | N/A | N/A |
| * Limestone grinding building contains three (3) limestone slurry units, Unit A, B, and C. Each unit consists of crusher, ball mill, separating tank, mill slurry classifier, and mill slurry tank. Since water is added to the crusher to make slurry, there are no emissions from ball mills, separating tanks, slurry classifiers, and mill slurry tanks. ⁹⁶ | | | | |

U12 Control Devices:

There is no control device associated with this unit.

⁹⁵ This unit is not subject to STAR since it does not have any TAC emissions.

⁹⁶ Limestone slurry unit, Unit C, was previously permitted under construction permit 30399-11-C.

U12 Specific Conditions

S1. Standards (Regulation 2.16, section 4.1.1)

a. PM

- i. The owner or operator shall not allow PM emissions to exceed 49.9 lb/hr from emission point E24 based on actual operating hours in a calendar day.⁹⁷ (Regulation 7.08, section 3.1.2)
- ii. The owner or operator shall not allow PM emissions to exceed 52.3 lb/hr from each emission point E25, E26, and E27 based on actual operating hours in a calendar day.⁹⁷ (Regulation 7.08, section 3.1.2)
- iii. The owner or operator shall not allow PM emissions to exceed 38.4 lb/hr from E28 (Unit A, B, C combined) and 31.8 lb/hr from Unit C only based on actual operating hours in a calendar day.⁹⁷ (Regulation 7.08, section 3.1.2)

b. Opacity

- i. For emission point E24, E25, E26, E27, and E28, the owner or operator shall not allow visible emissions to equal or exceed 20% opacity. (Regulation 7.08, section 3.1.1)
- ii. For emission point E25, E26, and E27, the owner or operator shall not allow visible emissions to equal or exceed 10% opacity.⁹⁸ (40 CFR 60.672(b) and Table 2 to Subpart OOO of Part 60)
- iii. For emission point E28, Unit A and B crushers, the owner or operator shall not allow visible emission to equal or exceed 15% opacity.⁹⁸ (40 CFR 60.672(b) and Table 2 to Subpart OOO of Part 60)
- iv. For emission point E28, Unit C crusher, the owner or operator shall not allow visible emission to equal or exceed 12% opacity.⁹⁸ (40 CFR 60.672(b) and Table 2 to Subpart OOO of Part 60)

S2. Monitoring and Record Keeping (Regulation 2.16, sections 4.1.9.1 and 4.1.9.2)

The owner or operator shall maintain the required records for a minimum of 5 years and make the records readily available to the District upon request.

⁹⁷ It has been demonstrated that the PM emissions cannot exceed the PM standards specified in Regulation 7.08 uncontrolled.

⁹⁸ By demonstrating compliance with the opacity requirements in these conditions it also demonstrates compliance with the 20% opacity requirement in Regulation 7.08.

a. **PM**

There are no routine monitoring and record keeping requirements for this pollutant.

b. **Opacity**

- i. The owner or operator shall conduct a monthly one-minute visible emissions survey, during normal operation, of the emission points. No more than four emission points shall be observed simultaneously. The opacity surveys can be performed on the building exhaust points if the process is inside an enclosure.
- ii. At emission points where visible emissions are observed, the owner or operator shall initiate corrective action within eight hours of the initial observation. If the visible emissions persist, the owner or operator shall perform or cause to be performed a Method 9, in accordance with 40 CFR Part 60, Appendix A, within 24 hours of the initial observation.
- iii. The owner or operator shall maintain records, monthly, of the results of all visible emissions surveys and tests. Records of the results of any visible emissions survey shall include the date of the survey, the name of the person conducting the survey, whether or not visible emissions were observed, and what if any corrective action was performed. If an emission point is not being operated during a given month, then no visible emission survey needs to be performed and a negative declaration shall be entered in the record.

S3. **Reporting** (Regulation 2.16, section 4.1.9.3)

The owner or operator shall submit quarterly compliance reports that include the information in this section.

a. **PM**

There are no routine reporting requirements for this process.

b. **Opacity**

The owner or operator shall identify all periods of exceeding an opacity standard during a quarterly reporting period. The report shall include the following:

- i. Any deviation from the requirement to perform and record the results of visible emission surveys or Method 9 tests;
- ii. The number, date, and time of each visible emissions survey where visible emissions were observed and the results of the Method 9 test performed;

- iii. Identification of all periods of exceeding the opacity standard; and
- iv. Description of any corrective action taken for each exceedance of the opacity standard.

S4. **Testing** (Regulation 2.16, section 4.1.9.3)

E28, Unit C crusher is subject to the following testing requirements:

Opacity

- i. The owner or operator shall perform an *initial performance* test to demonstrate compliance with the opacity limit by initially conducting a test in accordance with Method 9 of 40 CFR 60 Appendix A within 180 days of achieving normal operation.⁹⁹ (40 CFR 60.672(b))
- ii. The owner or operator shall conduct a *repeat performance test* according to Method 9 within 5 years from the initial performance test. (40 CFR 60.672(b))
- iii. The owner or operator shall use Method 9 of Appendix A–4 of 40 CFR 60 and the procedures in 40 CFR 60.11, with the following additions:
 - 1) The minimum distance between the observer and the emission source shall be 4.57 meters (15 feet). (40 CFR 60.675(c)(1)(i))
 - 2) The observer shall, when possible, select a position that minimizes interference from other fugitive emission sources (*e.g.*, road dust). The required observer position relative to the sun (Method 9 of Appendix A–4 of this part, Section 2.1) must be followed. (40 CFR 60.675(c)(1)(ii))
- iv. The test shall be performed at maximum capacity or allowable/permitted capacity or at a level of capacity which results in the greatest emissions and is representative of the operations. Failure to perform the test at these conditions may necessitate a re-test. The maximum 6-minute average opacity exhibited during the test period shall be used to determine whether the affected source is in initial compliance with the standard. The duration of the Method 9 performance test shall be 3 hours (30 6-minute averages).
- v. The owner or operator shall provide the District a 7-day advance notification for this Method 9 test. (40 CFR 60.675(g))

⁹⁹ The initial performance testing for this unit was conducted on November 28, 2012 and the result of this performance was submitted to the District on January 9, 2013.

- vi. The owner or operator shall furnish the District with a written report of the results of the compliance test(s) within 60 days following the actual date of the compliance test(s).

Emission Unit U14: Cooling tower

U14 Applicable Regulations:

| FEDERALLY ENFORCEABLE REGULATIONS | | |
|--|--|----------------------------|
| Regulation | Title | Applicable Sections |
| 7.08 | Standards of Performance for New Affected Facilities | 1, 2, 3 |

U14 Equipment:¹⁰⁰

| Emission Point | Description | Applicable Regulation | Control ID | Stack ID |
|-----------------------|---|------------------------------|-------------------|-----------------|
| E38 | One (1) cooling tower for Unit 4 boiler, make Zurn, model 12Z-3300, capacity 222,600 gallon water per minute. | 7.08 | N/A | N/A |

U14 Control Devices:

There is no control device associated with this unit.

¹⁰⁰ This unit is not subject to STAR since it does not have any TAC emissions.

U14 Specific Conditions**S1. Standards** (Regulation 2.16, section 4.1.1)**a. PM**

The owner or operator shall not allow PM emissions to exceed 97.9 lb/hr from this emission unit based on actual operating hours in a calendar day.¹⁰¹ (Title V Application, November 30, 2007)

b. Opacity

The owner or operator shall not allow visible emissions to equal or exceed 20% opacity. (Regulation 7.08, section 3.1.1)

S2. Monitoring and Record Keeping (Regulation 2.16, sections 4.1.9.1 and 4.1.9.2)

The owner or operator shall maintain the required records for a minimum of 5 years and make the records readily available to the District upon request.

a. PM

There are no monitoring or record keeping requirements for this pollutant.

b. Opacity

There are no monitoring or record keeping requirements for this pollutant.¹⁰²

S3. Reporting (Regulation 2.16, section 4.1.9.3)

The owner or operator shall submit quarterly compliance reports that include the information in this section.

a. PM

There are no routine reporting requirements for this process.

¹⁰¹ The PM standards is determined based on the capacity (202,000 gal/min) listed in the Title V Renewal Application submitted in 2007. LG&E submitted an application on July 21, 2014 to request the capacity to be revised from 202,000 gal/min to 222,600 gal/min. LG&E did not request to change the standard based on the higher capacity. It has been demonstrated that the PM emissions cannot exceed the PM standards specified in Regulation 7.08 uncontrolled. Therefore there are no monitoring, record keeping, and reporting requirements with respect to the PM lb/hr emission standards.

¹⁰² Testing for opacity is not required for this unit due to the nature of the cooling tower.

b. **Opacity**

There are no routine reporting requirements for this process.

Emission Unit U15: Haul Roads

U15 Applicable Regulations:

| FEDERALLY ENFORCEABLE REGULATIONS | | |
|--|---|----------------------------|
| Regulation | Title | Applicable Sections |
| 1.14 | Control of Fugitive Particulate Emissions | 1, 2, 3, 4, 8, 9 |

U15 Equipment:¹⁰³

| Emission Point | Description | Applicable Regulation | Control ID | Stack ID |
|-----------------------|------------------------------------|------------------------------|-------------------|-----------------|
| E39a | Paved road particulate emissions | 1.14 | N/A | N/A |
| E39b | Unpaved road particulate emissions | 1.14 | N/A | N/A |

U15 Control Devices:

Particulate emissions from unpaved road are controlled according to an approved Fugitive Dust Control Plan for Paved & Unpaved Roads.¹⁰⁴ (See Attachment F)

¹⁰³ This unit is not subject to STAR since it does not have any TAC emissions.

¹⁰⁴ LG&E submitted a plant-wide Fugitive Dust Control Plan on June 28, 2013 and the District approved the plan on 06/05/2014.

U15 Specific Conditions

S1. **Standards** (Regulation 2.16, section 4.1.1)

a. **PM**

The owner or operator shall not allow a road to be used without taking reasonable precautions to prevent particulate matter from becoming airborne beyond the work site. Such precautions shall include, where applicable, but shall not be limited to the following: (Regulation 1.14, section 2.1)

- i. Applying and maintaining asphalt, oil, water, or suitable chemicals on roads, materials stockpiles, and other surfaces which can create airborne dusts, (Regulation 1.14, section 2.1.2)
- ii. Covering at all times, except when loading and unloading, open bodied trucks transporting materials likely to become airborne, (Regulation 1.14, section 2.1.4)
- iii. Maintaining paved roadways in a clean condition, (Regulation 1.14, section 2.1.6)
- iv. Removing earth or other material from paved streets which earth or other material has been transported thereto by trucking or earth moving equipment or erosion by water. (Regulation 1.14, section 2.1.7)

b. **Opacity**

- i. The owner or operator shall not allow visible emissions to equal or exceed 20% opacity. (Regulation 1.14, section 2.3)
- ii. The owner or operator shall not allow visible fugitive emissions beyond the lot line of the property on which the emissions originate. (Regulation 1.14, section 2.4)

S2. **Monitoring and Record Keeping** (Regulation 2.16, sections 4.1.9.1 and 4.1.9.2)

The owner or operator shall maintain the required records for a minimum of 5 years and make the records readily available to the District upon request.

a. **PM**

The owner or operator shall keep records of vehicle miles traveled (VMT) and weights for the vehicles traveled on unpaved and paved roads.

b. **Opacity**

See Specific Condition S2.a.

S3. **Reporting** (Regulation 2.16, section 4.1.9.3)

The owner or operator shall submit quarterly compliance reports that include the information in this section.

a. **PM/ Opacity**

The owner or operator shall report any deviation from the attached Fugitive Dust Control Plan during the reporting period.

Emission Unit U16: Sorbent storage silos**U16 Applicable Regulations:**

| FEDERALLY ENFORCEABLE REGULATIONS | | |
|--|--|----------------------------|
| Regulation | Title | Applicable Sections |
| 7.08 | Standards of Performance for New Affected Facilities | 1, 2, 3, 4, 5, 6 |

U16 Equipment:^{105,106}

| Emission Point | Description | Applicable Regulation | Control ID | Stack ID |
|-----------------------|--|------------------------------|-------------------|-----------------|
| E40a – E40h | Six (6) to eight (8) sorbent silos for dry sorbent or Trona, make BCSI, model BCSI-14. Each silo has a capacity of 120 tons, loading rate 40 tons/hr, and equipped with a bin vent filter. | 7.08 | C32a – C32h | S35a – S35h |

U16 Control Devices:

| ID | Description | Performance Indicator | Stack ID |
|-------------|---|------------------------------|-----------------|
| C32a – C32h | Six (6) to eight (8) bin vent filters each controlling a sorbent storage silo, make BCSI, model BV25-96 | N/A ¹⁰⁷ | S35a – S35h |

¹⁰⁵ This unit was previously permitted under construction permit 34658-12-C.

¹⁰⁶ This unit is not subject to STAR since it does not have any TAC emissions.

¹⁰⁷ The bin vent filter equipped for each silo is considered as an integrated component of the silo. However, there are monitoring, record keeping and reporting requirements associated with any times that the filters are not in place and the process is operated.

U16 Specific Conditions

S1. **Standards** (Regulation 2.16, section 4.1.1)

a. **PM**

- i. The owner or operator shall not allow PM emissions from each of the emission points E40a through E40h to exceed 6.9 lbs/hr based on actual operating hours in a calendar day. (Regulation 7.08, section 3.3)
- ii. The owner or operator shall maintain the bin vent filters in place at all times the process equipment is in operation, including periods of startup, shutdown, and malfunction, in a manner consistent with good air pollution control practice to meet the standards. (Regulation 2.16, section 4.1.1)

b. **Opacity**

The owner or operator shall not allow visible emissions to equal or exceed 20% opacity. (Regulation 7.08, section 3.1.1)

S2. **Monitoring and Record Keeping** (Regulation 2.16, sections 4.1.9.1 and 4.1.9.2)

The owner or operator shall maintain the required records for a minimum of 5 years and make the records readily available to the District upon request.

a. **PM**

- i. The owner or operator shall maintain monthly records of the type and amount of material throughput for each piece of equipment.
- ii. The owner or operator shall monthly perform a visual inspection of the structural and mechanical integrity of the bin vent filters for signs of damage, air leakage, corrosion, or other equipment defects, and repair and/or replace defective components as needed. The owner or operator shall maintain monthly records of the results.
- iii. The owner or operator shall maintain daily records of any periods of time where the process was operating and the bin vent filters were not in place or a declaration that the bin vent filters were in place at all times that day when the process was operating.
- iv. If there is any time that the bin vent filters are not in place when the process is operating, then the owner or operator shall keep a record of the following for each bypass event:
 - 1) Date;
 - 2) Start time and stop time;

- 3) Identification of the bin vent filters and process equipment;
- 4) PM emissions during the bypass in lb/hr;
- 5) Summary of the cause or reason for each bypass event;
- 6) Corrective action taken to minimize the extent or duration of the bypass event; and
- 7) Measures implemented to prevent reoccurrence of the situation that resulted in the bypass event.

b. Opacity

- i. The owner or operator shall conduct a monthly one-minute visible emissions survey, during normal operation, of the emission points. No more than four emission points shall be observed simultaneously. The opacity surveys can be performed on the building exhaust points if the process is inside an enclosure.
- ii. At emission points where visible emissions are observed, the owner or operator shall initiate corrective action within eight hours of the initial observation. If correction actions are taken then a follow-up visible emission survey shall be made. If the visible emissions persist, the owner or operator shall perform or cause to be performed a Method 9, in accordance with 40 CFR Part 60, Appendix A, 24 hours of the initial observation.
- iii. The owner or operator shall maintain records, monthly, of the results of all visible emissions surveys and tests. Records of the results of any visible emissions survey shall include the date of the survey, the name of the person conducting the survey, whether or not visible emissions were observed, and what if any corrective action was performed. If an emission point is not being operated during a given month, then no visible emission survey needs to be performed and a negative declaration shall be entered in the record.

S3. Reporting (Regulation 2.16, section 4.1.9.3)

The owner or operator shall submit quarterly compliance reports that include the information in this section.

a. PM

The owner or operator shall report the following information regarding PM By-Pass Activity in the quarterly compliance reports.

- 1) Number of times the PM vent stream by-passes the bin vent filters and is vented to the atmosphere;
- 2) Duration of each by-pass to the atmosphere;

- 3) Calculated pound per hour PM emissions for each by-pass; or
- 4) A negative declaration if no by-passes occurred.

b. Opacity

The owner or operator shall identify all periods of exceeding an opacity standard during a quarterly reporting period. The report shall include the following:

- 1) Any deviation from the requirement to perform daily (or monthly, if required) visible emission surveys or Method 9 tests;
- 2) Any deviation from the requirement to record the results of each VE survey and Method 9 test performed;
- 3) The date and time of each VE Survey where visible emissions were observed and the results of any Method 9 test performed;
- 4) The date, time and results of follow-up VE survey;
- 5) The date, time, and results of any Method 9 test performed;
- 6) Identification of all periods of exceeding an opacity standard; and
- 7) If no deviations occur during a quarterly reporting period, the report shall contain a negative declaration.

Emission Unit U17: PAC storage silos**U17 Applicable Regulations:**

| FEDERALLY ENFORCEABLE REGULATIONS | | |
|--|--|----------------------------|
| Regulation | Title | Applicable Sections |
| 7.08 | Standards of Performance for New Affected Facilities | 1, 2, 3, 4, 5, 6 |

U17 Equipment:^{108,109}

| Emission Point | Description | Applicable Regulation | Control ID | Stack ID |
|-----------------------|--|------------------------------|-------------------|-----------------|
| E41a – E41f | Four (4) to six (6) PAC silos for PAC injection system, make BCSI, model BCSI-14. Each silo has a capacity of 94 tons, loading rate 40 tons/hr, and equipped with a bin vent filter. | 7.08 | C33a – C33f | S36a – S36f |

U17 Control Devices:

| ID | Description | Performance Indicator | Stack ID |
|-------------|--|------------------------------|-----------------|
| C33a – C33f | Four (4) to six (6) bin vent filters each controlling a PAC storage silo, make BCSI, model BV25-96 | N/A ¹¹⁰ | S36a – S36f |

¹⁰⁸ This unit was previously permitted under construction permit 34658-12-C.

¹⁰⁹ This unit is not subject to STAR since it does not have any TAC emissions.

¹¹⁰ The bin vent filter equipped for each silo is considered as an integrated component of the silo. However, there are monitoring, record keeping and reporting requirements associated with any times that the filters are not in place and the process is operated.

U17 Specific Conditions**S1. Standards** (Regulation 2.16, section 4.1.1)**a. PM**

- i. The owner or operator shall not allow PM emissions from each of the emission points E41a through E41f to exceed 9.7 lbs/hr based on actual operating hours in a calendar day. (Regulation 7.08, section 3.3)
- ii. The owner or operator shall maintain the bin vent filters in place at all times the process equipment is in operation, including periods of startup, shutdown, and malfunction, in a manner consistent with good air pollution control practice to meet the standards. (Regulation 2.16, section 4.1.1)

b. Opacity

The owner or operator shall not allow visible emissions to equal or exceed 20% opacity. (Regulation 7.08, section 3.1.1)

S2. Monitoring and Record Keeping (Regulation 2.16, sections 4.1.9.1 and 4.1.9.2)

The owner or operator shall maintain the required records for a minimum of 5 years and make the records readily available to the District upon request.

a. PM

- i. The owner or operator shall maintain monthly records of the type and amount of material throughput for each piece of equipment.
- ii. The owner or operator shall monthly perform a visual inspection of the structural and mechanical integrity of the bin vent filters for signs of damage, air leakage, corrosion, or other equipment defects, and repair and/or replace defective components as needed. The owner or operator shall maintain monthly records of the results.
- iii. The owner or operator shall maintain daily records of any periods of time where the process was operating and the bin vent filters were not in place or a declaration that the bin vent filters were in place at all times that day when the process was operating.
- iv. If there is any time that the bin vent filters are not in place when the process is operating, then the owner or operator shall keep a record of the following for each bypass event:
 - 1) Date;
 - 2) Start time and stop time;

- 3) Identification of the bin vent filters and process equipment;
- 4) PM emissions during the bypass in lb/hr;
- 5) Summary of the cause or reason for each bypass event;
- 6) Corrective action taken to minimize the extent or duration of the bypass event; and
- 7) Measures implemented to prevent reoccurrence of the situation that resulted in the bypass event.

b. Opacity

- i. The owner or operator shall conduct a monthly one-minute visible emissions survey, during normal operation, of the emission points. No more than four emission points shall be observed simultaneously. The opacity surveys can be performed on the building exhaust points if the process is inside an enclosure.
- ii. At emission points where visible emissions are observed, the owner or operator shall initiate corrective action within eight hours of the initial observation. If correction actions are taken then a follow-up visible emission survey shall be made. If the visible emissions persist, the owner or operator shall perform or cause to be performed a Method 9, in accordance with 40 CFR Part 60, Appendix A, 24 hours of the initial observation.
- iii. The owner or operator shall maintain records, monthly, of the results of all visible emissions surveys and tests. Records of the results of any visible emissions survey shall include the date of the survey, the name of the person conducting the survey, whether or not visible emissions were observed, and what if any corrective action was performed. If an emission point is not being operated during a given month, then no visible emission survey needs to be performed and a negative declaration shall be entered in the record.

S3. Reporting (Regulation 2.16, section 4.1.9.3)

The owner or operator shall submit quarterly compliance reports that include the information in this section.

a. PM

The owner or operator shall report the following information regarding PM By-Pass Activity in the quarterly compliance reports.

- 1) Number of times the PM vent stream by-passes the bin vent filters and is vented to the atmosphere;
- 2) Duration of each by-pass to the atmosphere;

- 3) Calculated pound per hour PM emissions for each by-pass; or
- 4) A negative declaration if no by-passes occurred.

b. Opacity

The owner or operator shall identify all periods of exceeding an opacity standard during a quarterly reporting period. The report shall include the following:

- 1) Any deviation from the requirement to perform daily (or monthly, if required) visible emission surveys or Method 9 tests;
- 2) Any deviation from the requirement to record the results of each VE survey and Method 9 test performed;
- 3) The date and time of each VE Survey where visible emissions were observed and the results of any Method 9 test performed;
- 4) The date, time and results of follow-up VE survey;
- 5) The date, time, and results of any Method 9 test performed;
- 6) Identification of all periods of exceeding an opacity standard; and
- 7) If no deviations occur during a quarterly reporting period, the report shall contain a negative declaration.

Emission Unit U18: Flyash storage silos**U18 Applicable Regulations:**

| FEDERALLY ENFORCEABLE REGULATIONS | | |
|--|--|----------------------------|
| Regulation | Title | Applicable Sections |
| 7.08 | Standards of Performance for New Affected Facilities | 1, 2, 3, 4, 5, 6 |

| DISTRICT ONLY ENFORCEABLE REGULATIONS | | |
|--|---|----------------------------|
| Regulation | Title | Applicable Sections |
| 5.00 | Definitions | 1, 2 |
| 5.01 | General Provisions | 1 through 2 |
| 5.20 | Methodology for Determining Benchmark Ambient Concentration of a Toxic Air Contaminant | 1 through 6 |
| 5.21 | Environmental Acceptability for Toxic Air Contaminants | 1 through 5 |
| 5.22 | Procedures for Determining the Maximum Ambient Concentration of a Toxic Air Contaminant | 1 through 5 |
| 5.23 | Categories of Toxic Air Contaminants | 1 through 6 |

U18 Equipment:¹¹¹

| Emission Point | Description | Applicable Regulation | Control ID | Stack ID |
|-----------------------|--|--|-------------------|-----------------|
| E42 | One (1) or more flyash silo for PJFF units, make Marietta Silos, model Concrete Field Erected, storage capacity 3,620 tons, maximum loading rate 79.5 ton/hr, equipped with bin vent filter. | 5.00, 5.01, 5.20, 5.21, 5.22, 5.23, 7.08 | C34 | S37 |

U18 Control Devices:

| ID | Description | Performance Indicator | Stack ID |
|-----------|---|------------------------------------|-----------------|
| C34 | One (1) or more bin vent filters each controlling a flyash storage silo | N/A ¹¹² (See Comment 1) | S37 |

¹¹¹ This unit was previously permitted under construction permit 34658-12-C.

¹¹² The bin vent filter equipped for each silo is considered as an integrated component of the silo. However, there are monitoring, record keeping and reporting requirements associated with any times that the filters are not in place and the process is operated.

U18 Specific Conditions

S1. **Standards** (Regulation 2.16, section 4.1.1)

a. **PM**

- i. The owner or operator shall not allow PM emissions from emission point E42 to exceed 13.9 lbs/hr based on actual operating hours in a calendar day. (Regulation 7.08, section 3.3)
- ii. The owner or operator shall maintain the bin vent filters in place at all times the process equipment is in operation, including periods of startup, shutdown, and malfunction, in a manner consistent with good air pollution control practice to meet the standards. (Regulation 2.16, section 4.1.1)

b. **Opacity**

The owner or operator shall not allow visible emissions to equal or exceed 20% opacity. (Regulation 7.08, section 3.1.1)

c. **TAC**

- i. The owner or operator shall not allow Arsenic (As) emissions to exceed de minimis from this unit.¹¹³ (Regulation 5.21, section 4.2 and section 4.3)
- ii. See Plant-wide Requirements S1.b.^{114,115}

S2. **Monitoring and Record Keeping** (Regulation 2.16, sections 4.1.9.1 and 4.1.9.2)

The owner or operator shall maintain the required records for a minimum of 5 years and make the records readily available to the District upon request.

¹¹³ Using 99.5% control efficiency and the TAC contents are based on previous sample analysis, all TACs are below the de minimis threshold levels. However, results of sample analysis vary from each other and the potential emission for Arsenic is close to its de minimis threshold. The source is required to conduct periodically sample analysis and demonstrate that the Arsenic emission is under de minimis level based on the most recent sampling results.

¹¹⁴ LG&E submitted their TAC Environmental Acceptability Demonstration to the District on December 28, 2006, March 25, 2008, and April 9, 2010, in which the source has demonstrated compliance with the EA Goals. The proposed project for installation and modification of the bin vent filters will reduce TAC emissions plant-wide. There will be no new TACs introduced at the facility, though more flyash will be collected and transferred to flyash transfer bins (U9) and silos (U8 and U18). The company demonstrated compliance with the STAR Program in the updated the EA Demonstration dated April 3, 2012.

¹¹⁵ In the STAR EA Demonstration dated April 3, 2012, a control efficiency of 99.5% was used for bin vent filters controlling flyash silos and flyash transfer bins. LG&E has submitted a manufacturer's guarantee, which guarantees a 99.9% control efficiency for the fabric filters, on 9/13/2013.

a. PM

- i. The owner or operator shall maintain monthly records of the type and amount of material throughput for each piece of equipment.
- ii. The owner or operator shall monthly perform a visual inspection of the structural and mechanical integrity of the bin vent filters for signs of damage, air leakage, corrosion, or other equipment defects, and repair and/or replace defective components as needed. The owner or operator shall maintain monthly records of the results.
- iii. The owner or operator shall maintain daily records of any periods of time where the process was operating and the bin vent filters were not in place or a declaration that the bin vent filters were in place at all times that day when the process was operating.
- iv. If there is any time that the bin vent filters are not in place when the process is operating, then the owner or operator shall keep a record of the following for each bypass event:
 - 1) Date;
 - 2) Start time and stop time;
 - 3) Identification of the bin vent filters and process equipment;
 - 4) PM emissions during the bypass in lb/hr;
 - 5) Summary of the cause or reason for each bypass event;
 - 6) Corrective action taken to minimize the extent or duration of the bypass event; and
 - 7) Measures implemented to prevent reoccurrence of the situation that resulted in the bypass event.

b. Opacity

- i. The owner or operator shall conduct a monthly one-minute visible emissions survey, during normal operation, of the emission points. No more than four emission points shall be observed simultaneously. The opacity surveys can be performed on the building exhaust points if the process is inside an enclosure.
- ii. At emission points where visible emissions are observed, the owner or operator shall initiate corrective action within eight hours of the initial observation. If correction actions are taken then a follow-up visible emission survey shall be made. If the visible emissions persist, the owner or operator shall perform or cause to be performed a Method 9, in accordance with 40 CFR Part 60, Appendix A, 24 hours of the initial observation.

- iii. The owner or operator shall maintain records, monthly, of the results of all visible emissions surveys and tests. Records of the results of any visible emissions survey shall include the date of the survey, the name of the person conducting the survey, whether or not visible emissions were observed, and what if any corrective action was performed. If an emission point is not being operated during a given month, then no visible emission survey needs to be performed and a negative declaration shall be entered in the record.

c. **TAC**

- i. The owner or operator shall perform sampling and lab analysis for the flyash in order to determine the TAC concentrations, at least once every six months.
- ii. The owner or operator shall calculate the TAC emissions at least once every six months. The average TAC concentrations of all sampling results during the previous 12 months combined with the sampling results from the current semiannual period shall be used for emission calculations.
- iii. See Plant-wide Requirements S2.b.

S3. **Reporting** (Regulation 2.16, section 4.1.9.3)

The owner or operator shall submit quarterly compliance reports that include the information in this section.

a. **PM**

The owner or operator shall report the following information regarding PM By-Pass Activity in the quarterly compliance reports.

- 1) Number of times the PM vent stream by-passes the bin vent filters and is vented to the atmosphere;
- 2) Duration of each by-pass to the atmosphere;
- 3) Calculated pound per hour PM emissions for each by-pass; or
- 4) A negative declaration if no by-passes occurred.

b. **Opacity**

The owner or operator shall identify all periods of exceeding an opacity standard during a quarterly reporting period. The report shall include the following:

- 1) Any deviation from the requirement to perform daily (or monthly, if required) visible emission surveys or Method 9 tests;

- 2) Any deviation from the requirement to record the results of each VE survey and Method 9 test performed;
- 3) The date and time of each VE Survey where visible emissions were observed and the results of any Method 9 test performed;
- 4) The date, time and results of follow-up VE survey;
- 5) The date, time, and results of any Method 9 test performed;
- 6) Identification of all periods of exceeding an opacity standard; and
- 7) If no deviations occur during a quarterly reporting period, the report shall contain a negative declaration.

c. **TAC**

See Plant-wide Requirements S2.b.

Emission Unit U20: Gypsum pelletizing plant**U20 Applicable Regulations:**

| FEDERALLY ENFORCEABLE REGULATIONS | | |
|--|---|----------------------------|
| Regulation | Title | Applicable Sections |
| 7.06 | Standards of Performance for New Indirect Heat Exchangers | 1, 2, 3, 4, 5, 6, 7, 8 |
| 7.08 | Standards of Performance for New Affected Facilities | 1, 2, 3, 4, 5, 6 |
| 40 CFR 63 Subpart DDDDD | National Emission Standards for Hazardous Air Pollutant for Industrial, Commercial, and Institutional Boilers and Process Heaters | 63.7480 – 63.7575 |

| DISTRICT ONLY ENFORCEABLE REGULATIONS | | |
|--|---|----------------------------|
| Regulation | Title | Applicable Sections |
| 5.00 | Definitions | 1, 2 |
| 5.01 | General Provisions | 1 through 2 |
| 5.02 | Adoption of National Emission Standards for Hazardous Air Pollutants | 1, 3.95 and 4 |
| 5.14 | Hazardous Air Pollutants and Source Categories | 1, 2 |
| 5.20 | Methodology for Determining Benchmark Ambient Concentration of a Toxic Air Contaminant | 1 through 6 |
| 5.21 | Environmental Acceptability for Toxic Air Contaminants | 1 through 5 |
| 5.22 | Procedures for Determining the Maximum Ambient Concentration of a Toxic Air Contaminant | 1 through 5 |
| 5.23 | Categories of Toxic Air Contaminants | 1 through 6 |

U20 Equipment:^{116,117}

| Emission Point | Description | Applicable Regulation | Control ID | Stack ID |
|-----------------------|--|------------------------------|-------------------|-----------------|
| E44-a | One (1) load hopper used for gypsum receiving, capacity 50 ton/hr. | 7.08 | C36 | S39 |
| E44-b | One (1) conveyor (hopper to dispersion dryer) | 7.08 | C36 | S39 |

¹¹⁶ This unit was previously permitted under permit 35668-12-C and 35673-12-C. Limestone silo (E44-o) is added upon review of the construction application dated July 10, 2013.

¹¹⁷ Per Regulation 5.01, section 1.6.7, the TAC emissions from the combustion of natural gas are considered to be “de minimis emissions” for the STAR Program. The other equipment for this unit is not subject to STAR since it does not have any TAC emissions.

| Emission Point | Description | Applicable Regulation | Control ID | Stack ID |
|-----------------------|--|---|-------------------|-----------------|
| E44-c | One (1) Allgaier dispersion dryer | 7.08 | N/A | N/A |
| E44-d | One (1) pneumatic conveyor with a cyclone separator (baghouse to mixer load hopper) | 7.08 | N/A | N/A |
| E44-e | One (1) mixer load hopper, capacity 50 ton/hr | 7.08 | N/A | N/A |
| E44-f | One (1) rotary airlock conveyor (mixer load hopper to pin mixer) | 7.08 | N/A | N/A |
| E44-g | One (1) Pin or Plow mixer with a Lingo sulfonate storage tank | 7.08 | N/A | N/A |
| E44-h | One (1) belt conveyor (pin mixer to Disc pelletizer) | 7.08 | N/A | N/A |
| E44-i | one (1) DISC pelletizer | 7.08 | N/A | N/A |
| E44-j | One (1) belt conveyor (Disc pelletizer to fluid bed dryer) | 7.08 | N/A | N/A |
| E44-k | One (1) Allgaier vibrating fluid bed dryer | 7.08 | N/A | N/A |
| E44-l | One (1) Mogensen sizer/screener | 7.08 | N/A | N/A |
| E44-m | One (1) belt conveyor (screener to product pile) | 7.08 | N/A | N/A |
| E44-n | One (1) hammer mill | 7.08 | N/A | N/A |
| E44-o | One (1) limestone silo | 7.08 | N/A | N/A |
| E44-p | One (1) de-dust system, consists of: one (1) 15,000 gal storage, one (1) 35 tph conveyor (make: Layco), one (1) 20 tph batch mixer, one (1) 20 tph surge hopper (make: Charah), two (2) 35 tph bucket elevators (#1 and #2), make TBD, two (2) 35 tph batch hopper (#1 and #2), make TBD, and one (1) 35 tph discharge conveyor, make TBD ¹¹⁸ | 7.08 | N/A | N/A |
| E45 and E46 | Two (2) natural gas-fired heaters used for dispersion dryer and fluid bed dryer respectively, combined heat input rate 42 MMBtu/hr, make Star Combustion ¹¹⁹ | 5.00, 5.01, 5.02, 5.14, 5.20, 5.21, 5.22, 5.23, 7.06, 40 CFR 63 Subpart DDDDD | N/A | S40 and S41 |

¹¹⁸ Construction application for the de-dust system was received on July 29, 2015. It was determined this equipment is an insignificant activity per PTE. Therefore no construction permit was required.

¹¹⁹ LG&E Mill Creek Station is a major source of HAP. Therefore the heater is subject to the major source Boiler MACT, 40 CFR 63 Subpart DDDDD. This unit is not subject to 40 CFR 60, Subpart Dc – Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units, since the heater does not generate steam.

U20 Control Devices:

| ID | Description | Performance Indicator | Stack ID |
|-----|---|-----------------------|----------|
| C36 | One (1) baghouse used as gypsum separator and PM control, make Donaldson Torit, model DuraLife ¹²⁰ | N/A | S39 |

¹²⁰ LG&E submitted the parameter range for normal operation of the dust collector on August 29, 2013.

U20 Specific Conditions

S1. **Standards** (Regulation 2.16, section 4.1.1)

a. **PM**

- i. The owner or operator shall not allow PM emissions from the gypsum pelletizing process (E44) to exceed 32.4 lbs/hr based on actual operating hours in a calendar day.¹²¹ (Regulation 7.08, section 3.3)
- ii. The owner or operator shall not allow PM emissions from each natural gas-fired heater (E45, E46) to exceed 0.10 lb/MMBtu actual total heat input.¹²² (Regulation 7.06, section 4.1.2)

b. **Opacity**

- i. The owner or operator shall not allow visible emissions from the gypsum pelletizing process (E44) to equal or exceed 20% opacity. (Regulation 7.08, section 3.1.1)
- ii. The owner or operator combusting natural gas (E45 and E46) shall not cause to be discharged into the atmosphere from any affected facility PM emissions which exhibit greater than 20% opacity.¹²³ (Regulation 7.06, section 4.2)

c. **SO₂**

The owner or operator shall not cause to be discharged into the atmosphere from each natural gas-fired heater (E45, E46) any gases which contain SO₂ in excess of 0.8 lb/MMBtu actual total heat input.¹²² (Regulation 7.06, section 5.1.2)

d. **HAP** (40 CFR 63, Subpart DDDDD. For E45 and E46 heaters only)

Work Practice Standard:

The owner or operator shall conduct a tune-up of the process heaters annually as specified in 40 CFR 63.7540. (40 CFR 63.7500(a) and Table 3)

¹²¹ A one-time PM compliance demonstration has been performed for this equipment and the lb/hr standard cannot be exceeded uncontrolled.

¹²² A one-time PM and SO₂ compliance demonstration has been performed for the heater, using AP-42 emission factors and combusting natural gas, and the emission standards under Regulation 7.06 for PM and SO₂ cannot be exceeded when combusting natural gas.

¹²³ It has been determined that using a natural gas fired heater will inherently meet the 20% opacity standard. Therefore, the company is not required to perform periodic monitoring to demonstrate compliance with the opacity standard when combusting natural gas.

S2. Monitoring and Record Keeping (Regulation 2.16, sections 4.1.9.1 and 4.1.9.2)

The owner or operator shall maintain the required records for a minimum of 5 years and make the records readily available to the District upon request.

a. PM

There are no routine monitoring or record keeping requirements for this pollutant.

b. Opacity

For the gypsum pelletizing process (E44):

- i. The owner or operator shall conduct a monthly one-minute visible emissions survey, during normal operation, of the emission points. No more than four emission points shall be observed simultaneously. The opacity surveys can be performed on the building exhaust points if the process is inside an enclosure.
- ii. At emission points where visible emissions are observed, the owner or operator shall initiate corrective action within eight hours of the initial observation. If correction actions are taken then a follow-up visible emission survey shall be made. If the visible emissions persist, the owner or operator shall perform or cause to be performed a Method 9, in accordance with 40 CFR Part 60, Appendix A, within 24 hours of the initial observation.
- iii. The owner or operator shall maintain records, monthly, of the results of all visible emissions surveys and tests. Records of the results of any visible emissions survey shall include the date of the survey, the name of the person conducting the survey, whether or not visible emissions were observed, and what if any corrective action was performed. If an emission point is not being operated during a given month, then no visible emission survey needs to be performed and a negative declaration shall be entered in the record.

For the natural gas-fired heaters (E45 and E46):

- iv. There are no routine monitoring or record keeping requirements for this equipment.

c. SO₂

For the natural gas-fired heaters (E45 and E46):

There are no monitoring and record keeping requirements for this equipment.

- d. **HAP** (40 CFR 63, Subpart DDDDD. For E45 and E46 heaters only)

For all tune-ups, the owner or operator shall keep records of the dates and procedures of each tune-up, and the fuel used. The owner or operator should begin keeping fuel records for at least 12 months prior to the scheduled tune-up. The record must be kept on-site and submitted to the delegated authority if requested. (40 CFR 63.7555(a))

S3. **Reporting** (Regulation 2.16, section 4.1.9.3)

- a. **PM**

There are no routine reporting requirements for this pollutant.

- b. **Opacity**

For the gypsum pelletizing process (E44):

- i. The owner or operator shall identify all periods of exceeding an opacity standard during a semi-annual reporting period. The report shall include the following:
- 1) Any deviation from the requirement to perform daily (or monthly, if required) visible emission surveys or Method 9 tests;
 - 2) Any deviation from the requirement to record the results of each VE survey and Method 9 test performed;
 - 3) The date and time of each VE Survey where visible emissions were observed and the results of any Method 9 test performed;
 - 4) The date, time and results of any follow-up VE survey;
 - 5) The date, time, and results of any Method 9 test performed;
 - 6) Identification of all periods of exceeding an opacity standard; and
 - 7) If no deviations occur during a semi-annual reporting period, the report shall contain a negative declaration.

For the natural gas-fired heaters (E45 and E46):

- ii. There are no routine reporting requirements for this equipment.

- c. **SO₂**

For the natural gas-fired heaters (E45 and E46):

There are no routine reporting requirements for this equipment.

- d. **HAP** (40 CFR 63, Subpart DDDDD. For E45 and E46 heaters only)

Initial notification:

- i. If the heaters are startup before January 31, 2013, the owner or operator shall submit an Initial Notification not later than 120 days after January 31, 2013. (40 CFR 63.7545(b))
- ii. If the heaters are startup after January 31, 2013, the owner or operator shall submit an Initial Notification not later than 15 days after the actual date of startup of the affected source.¹²⁴ (40 CFR 63.7545(c))
- iii. For initial tune-up, the owner or operator shall submit a signed statement in the Initial Notification that indicates that the owner or operator conducted an initial tune-up of the boiler. For subsequent annual tune-ups, the owner or operator may submit only an annual compliance report. (40 CFR 63.7550(b))

¹²⁴ On October 15, 2014, LG&E submitted an initial notification for process heaters E45 and E46.

Emission Unit U21: Coal handling facilities**U21 Applicable Regulations:**

| FEDERALLY ENFORCEABLE REGULATIONS | | |
|--|--|--|
| Regulation | Title | Applicable Sections |
| 6.09 | Standards of Performance for Existing Process Operations | 1, 2, 3, 4, 5 |
| 7.08 | Standards of Performance for New Process Operations | 1, 2, 3, 4 |
| 40 CFR 60, Subpart Y | Standards of Performance for Coal Preparation Plants | 60.250, 60.251, 60.254, 60.255, 60.256, 60.257, 60.258 |

| DISTRICT ONLY ENFORCEABLE REGULATIONS | | |
|--|---|----------------------------|
| Regulation | Title | Applicable Sections |
| 5.00 | Definitions | 1, 2 |
| 5.01 | General Provisions | 1 through 2 |
| 5.20 | Methodology for Determining Benchmark Ambient Concentration of a Toxic Air Contaminant | 1 through 6 |
| 5.21 | Environmental Acceptability for Toxic Air Contaminants | 1 through 5 |
| 5.22 | Procedures for Determining the Maximum Ambient Concentration of a Toxic Air Contaminant | 1 through 5 |
| 5.23 | Categories of Toxic Air Contaminants | 1 through 6 |
| 7.02 | Federal New Source Performance Standards Incorporated by Reference | 1.1, 1.38, 2, 3, 4, 5 |

U21 Equipment:

| Emission Point | Description | Applicable Regulation | Control ID | Stack ID |
|-----------------------|--|--|-------------------|-----------------|
| E47-a | One (1) barge unloading operation, rated capacity 1,500 tons/hr (1980) | 5.00, 5.01, 5.20, 5.21, 5.22, 5.23, 7.02, 7.08, 40 CFR 60, Subpart Y | N/A | N/A |
| E47-b | One (1) railcar unloading, rated capacity 2,400 tons/hr (1971) | 5.00, 5.01, 5.02, 5.14, 5.20, 5.21, 5.22, 5.23, | N/A | N/A |
| E47-c | One (1) coal radial stacker, rated capacity 1,500 tons/hr (1971) | 6.09 | N/A | N/A |

| Emission Point | Description | Applicable Regulation | Control ID | Stack ID |
|------------------------|---|--|-------------------|-----------------|
| E47-d | Two (2) coal crushers, rated capacity 900 tons/hr for each (2014) | 5.00, 5.01, 5.02, 5.14, 5.20, 5.21, 5.22, 5.23, 7.08, 40 CFR 60, Subpart Y | N/A | N/A |
| E47-e1 through E47-e16 | Sixteen (16) coal belt conveyors, rated capacity 750 tons/hr for 40" belt conveyors and 2,400 tons/hr for 60" belt conveyor (1971) | 5.00, 5.01, 5.02, 5.14, 5.20, 5.21, 5.22, 5.23, 6.09 | N/A | N/A |
| E47-f | One (1) coal storage pile (drop point emission) (1971) | 6.09 | N/A | N/A |
| E47-g | One (1) fuel additive facility used to supply fuel additives to coal to reduce NOx and mercury emissions, consisting of:
Two (2) silo for solid additive M45-PC A1 and M45-PC A2, make Tank Connection. One (1) feed hopper, make TBD. One (1) mix tank, make TBD. One (1) propane heater, make Hubbel, capacity 0.25 MMBtu/hr. ¹²⁵ | 7.08 | N/A | N/A |

U21 Control Devices:

There is no control device associated with this unit.

¹²⁵ Construction application for the fuel additive facility was received on August 19, 2015. It was determined this equipment is an insignificant activity per PTE. Therefore no construction permit was required.

U21 Specific Conditions**S1. Standards** (Regulation 2.16, section 4.1.1)**a. PM**

- i. The owner or operator shall not allow PM emissions to exceed 55.8 lb/hr from barge unloading (E47a) based on actual operating hours in a calendar day.¹²⁶ (Regulation 7.08, section 3.1.2)
- ii. The owner or operator shall not allow PM emissions to exceed 89.5 lb/hr from railcar unloading (E47b) based on actual operating hours in a calendar day.¹²⁶ (Regulation 6.09, section 3.2)
- iii. The owner or operator shall not allow PM emissions to exceed 83.0 lb/hr from radial stacker (E47c) based on actual operating hours in a calendar day.¹²⁶ (Regulation 6.09, section 3.2)
- iv. The owner or operator shall not allow PM emissions to exceed 51.4 lb/hr from each crusher (E47d) based on actual operating hours in a calendar day.¹²⁶ (Regulation 7.08, section 3.1.2)
- v. The owner or operator shall not allow PM emissions to exceed 73.9 lb/hr from each of the 40" belt conveyors and 89.5 lb/hr from each of the 60" belt conveyors (E47e) based on actual operating hours in a calendar day.¹²⁶ (Regulation 6.09, section 3.2)
- vi. The owner or operator shall not allow PM emissions to exceed 89.5 lb/hr from coal pile drop point (E47f) based on actual operating hours in a calendar day.¹²⁶ (Regulation 6.09, section 3.2)

b. Opacity

The owner or operator shall not allow visible emissions to equal or exceed 20% opacity. (Regulation 6.09, section 3.1) (Regulation 7.08, section 3.1.1)

c. Standards of Performance for Coal Preparation and Processing Plants (40 CFR 60, Subpart Y)

- i. For emission point E47a (barge unloading):

¹²⁶ It has been demonstrated that the PM emissions cannot exceed the PM standards specified in Regulation 6.09 uncontrolled. Therefore there are no monitoring, record keeping, and reporting requirements with respect to the PM lb/hr emission standards.

The owner or operator shall not allow visible emissions to equal or exceed 20% opacity. (40 CFR 60.254(a))

- ii. For emission point E47d (new crushers):
 - 1) The owner or operator shall not allow visible emissions to equal or exceed 10% opacity. (40 CFR 60.254(b)(1))
 - 2) The owner or operator must not cause to be discharged into the atmosphere from any mechanical vent on an affected facility gases which contain particulate matter in excess of 0.023 g/dscm (0.010 gr/dscf). (40 CFR 60.254(b)(2))

d. **TAC**

See Plant-wide Requirements S1.b.¹²⁷

S2. **Monitoring and Record Keeping** (Regulation 2.16, sections 4.1.9.1 and 4.1.9.2)

The owner or operator shall maintain the required records for a minimum of 5 years and make the records readily available to the District upon request.

a. **PM**

The owner or operator shall keep monthly records of the throughput of coal for each emission point.

b. **Opacity**

- i. The owner or operator shall conduct a monthly one-minute visible emissions survey, during normal operation, of the emission points. No more than four emission points shall be observed simultaneously. The opacity surveys can be performed on the building exhaust points if the process is inside an enclosure.
- ii. At emission points where visible emissions are observed, the owner or operator shall initiate corrective action within eight hours of the initial observation. If the visible emissions persist, the owner or operator shall perform or cause to be performed a Method 9, in accordance with 40 CFR Part 60, Appendix A, within 24 hours of the initial observation.
- iii. The owner or operator shall maintain records, monthly, of the results of all visible emissions surveys and tests. Records of the results of any visible emissions survey shall include the date of the survey, the name of the

¹²⁷ Each TAC contained in coal is less than 0.1% by weight. According to Regulation 5.21, section 2.1, emissions of TACs from this coal handling operation are de minimis.

person conducting the survey, whether or not visible emissions were observed, and what if any corrective action was performed. If an emission point is not being operated during a given month, then no visible emission survey needs to be performed and a negative declaration shall be entered in the record.

c. **Standards of Performance for Coal Preparation and Processing Plants (40 CFR 60, Subpart Y)**

i. Performance tests and other compliance requirements (40 CFR 60.255)

1) An owner or operator of each affected facility that commenced construction, reconstruction, or modification on or before April 28, 2008, must conduct all performance tests required by 40 CFR 60.8 to demonstrate compliance with the applicable emission standards using the methods identified in 40 CFR 60.257. (40 CFR 60.255(a))

2) An owner or operator of each affected facility that commenced construction, reconstruction, or modification after April 28, 2008, must conduct performance tests according to the requirements of 40 CFR 60.8 and the methods identified in 40 CFR 60.257 to demonstrate compliance with the applicable emissions standards in this subpart as specified in paragraphs (b)(1) and (2) of this section. (40 CFR 60.255(b))

(a) For each affected facility subject to a PM, SO₂, or combined NO_x and CO emissions standard, an initial performance test must be performed. Thereafter, a new performance test must be conducted according to the requirements in paragraphs (b)(1)(i) through (iii) of this section, as applicable. (40 CFR 60.255(b)(1))

(i) If the results of the most recent performance test demonstrate that emissions from the affected facility are greater than 50 percent of the applicable emissions standard, a new performance test must be conducted within 12 calendar months of the date that the previous performance test was required to be completed. (40 CFR 60.255(b)(1)(i))

(ii) If the results of the most recent performance test demonstrate that emissions from the affected facility are 50 percent or less of the applicable emissions standard, a new performance test must be conducted within 24 calendar months of the date

that the previous performance test was required to be completed. (40 CFR 60.255(b)(1)(ii))

- (iii) An owner or operator of an affected facility that has not operated for the 60 calendar days prior to the due date of a performance test is not required to perform the subsequent performance test until 30 calendar days after the next operating day.(40 CFR 60.255(b)(1)(iii))
- (b) For each affected facility subject to an opacity standard, an initial performance test must be performed. Thereafter, a new performance test must be conducted according to the requirements in paragraphs (b)(2)(i) through (iii) of this section, as applicable, except as provided for in paragraphs (e) and (f) of this section. Performance test and other compliance requirements for coal truck dump operations are specified in paragraph (h) of this section. (40 CFR 60.255(b)(2))
- (i) If any 6-minute average opacity reading in the most recent performance test exceeds half the applicable opacity limit, a new performance test must be conducted within 90 operating days of the date that the previous performance test was required to be completed. (40 CFR 60.255(b)(2)(i))
 - (ii) If all 6-minute average opacity readings in the most recent performance test are equal to or less than half the applicable opacity limit, a new performance test must be conducted within 12 calendar months of the date that the previous performance test was required to be completed. (40 CFR 60.255(b)(2)(ii))
 - (iii) An owner or operator of an affected facility continuously monitoring scrubber parameters as specified in 40 CFR 60.256(b)(2) is exempt from the requirements in paragraphs (b)(2)(i) and (ii) if opacity performance tests are conducted concurrently with (or within a 60-minute period of) PM performance tests. (40 CFR 60.255(b)(2)(iii))
- 3) If any affected coal processing and conveying equipment (e.g., breakers, crushers, screens, conveying systems), coal storage systems, or coal transfer and loading systems that commenced construction, reconstruction, or modification after April 28, 2008,

are enclosed in a building, and emissions from the building do not exceed any of the standards in 40 CFR 60.254 that apply to the affected facility, then the facility shall be deemed to be in compliance with such standards. (40 CFR 60.255(c))

- 4) An owner or operator of an affected facility (other than a thermal dryer) that commenced construction, reconstruction, or modification after April 28, 2008, is subject to a PM emission standard and uses a control device with a design controlled potential PM emissions rate of 1.0 Mg (1.1 tons) per year or less is exempted from the requirements of paragraphs (b)(1)(i) and (ii) of this section provided that the owner or operator meets all of the conditions specified in paragraphs (d)(1) through (3) of this section. This exemption does not apply to thermal dryers. (40 CFR 60.255(d))
 - (a) PM emissions, as determined by the most recent performance test, are less than or equal to the applicable limit, (40 CFR 60.255(d)(1))
 - (b) The control device manufacturer's recommended maintenance procedures are followed, and (40 CFR 60.255(d)(2))
 - (c) All 6-minute average opacity readings from the most recent performance test are equal to or less than half the applicable opacity limit or the monitoring requirements in paragraphs (e) or (f) of this section are followed. (40 CFR 60.255(d)(3))
- 5) For an owner or operator of a group of up to five of the same type of affected facilities that commenced construction, reconstruction, or modification after April 28, 2008, that are subject to PM emissions standards and use identical control devices, the Administrator or delegated authority may allow the owner or operator to use a single PM performance test for one of the affected control devices to demonstrate that the group of affected facilities is in compliance with the applicable emissions standards provided that the owner or operator meets all of the conditions specified in paragraphs (e)(1) through (3) of this section. (40 CFR 60.255(e))
 - (a) PM emissions from the most recent performance test for each individual affected facility are 90 percent or less of the applicable PM standard; (40 CFR 60.255(e)(1))

- (b) The manufacturer's recommended maintenance procedures are followed for each control device; and (40 CFR 60.255(e)(2))
 - (c) A performance test is conducted on each affected facility at least once every 5 calendar years. (40 CFR 60.255(e)(3))
- 6) As an alternative to meeting the requirements in paragraph (b)(2) of this section, an owner or operator of an affected facility that commenced construction, reconstruction, or modification after April 28, 2008, may elect to comply with the requirements in paragraph (f)(1) or (f)(2) of this section. (40 CFR 60.255(f))
- (a) Monitor visible emissions from each affected facility according to the requirements in paragraphs (f)(1)(i) through (iii) of this section. (40 CFR 60.255(f)(1))
 - (i) Conduct one daily 15-second observation each operating day for each affected facility (during normal operation) when the coal preparation and processing plant is in operation. Each observation must be recorded as either visible emissions observed or no visible emissions observed. Each observer determining the presence of visible emissions must meet the training requirements specified in 40 CFR 2.3 of Method 22 of appendix A-7 of this part. If visible emissions are observed during any 15-second observation, the owner or operator must adjust the operation of the affected facility and demonstrate within 24 hours that no visible emissions are observed from the affected facility. If visible emissions are observed, a Method 9, of appendix A- 4 of this part, performance test must be conducted within 45 operating days. (40 CFR 60.255(f)(1)(i))
 - (ii) Conduct monthly visual observations of all process and control equipment. If any deficiencies are observed, the necessary maintenance must be performed as expeditiously as possible. (40 CFR 60.255(f)(1)(ii))
 - (iii) Conduct a performance test using Method 9 of appendix A-4 of this part at least once every 5 calendar years for each affected facility. (40 CFR 60.255(f)(1)(iii))

- (b) Prepare a written site-specific monitoring plan for a digital opacity compliance system for approval by the Administrator or delegated authority. The plan shall require observations of at least one digital image every 15 seconds for 10-minute periods (during normal operation) every operating day. An approvable monitoring plan must include a demonstration that the occurrences of visible emissions are not in excess of 5 percent of the observation period. For reference purposes in preparing the monitoring plan, see OAQPS “Determination of Visible Emission Opacity from Stationary Sources Using Computer-Based Photographic Analysis Systems.” This document is available from the U.S. Environmental Protection Agency (U.S. EPA); Office of Air Quality and Planning Standards; Sector Policies and Programs Division; Measurement Group (D243-02), Research Triangle Park, NC 27711. This document is also available on the Technology Transfer Network (TTN) under Emission Measurement Center Preliminary Methods. The monitoring plan approved by the Administrator or delegated authority shall be implemented by the owner or operator. (40 CFR 60.255(f)(2))
- 7) As an alternative to meeting the requirements in paragraph (b)(2) of this section, an owner or operator of an affected facility that commenced construction, reconstruction, or modification after April 28, 2008, subject to a visible emissions standard under this subpart may install, operate, and maintain a continuous opacity monitoring system (COMS). Each COMS used to comply with provisions of this subpart must be installed, calibrated, maintained, and continuously operated according to the requirements in paragraphs (g)(1) and (2) of this section. (40 CFR 60.255(g))
 - (a) The COMS must meet Performance Specification 1 in 40 CFR part 60, appendix B. (40 CFR 60.255(g)(1))
 - (b) The COMS must comply with the quality assurance requirements in paragraphs (g)(2)(i) through (v) of this section. (40 CFR 60.255(g)(2))
 - (i) The owner or operator must automatically (intrinsic to the opacity monitor) check the zero and upscale (span) calibration drifts at least once daily. For particular COMS, the acceptable range of zero and upscale calibration materials is as defined in the applicable version of Performance Specification 1

in 40 CFR part 60, appendix B. (40 CFR 60.255(g)(2)(i))

- (ii) The owner or operator must adjust the zero and span whenever the 24-hour zero drift or 24-hour span drift exceeds 4 percent opacity. The COMS must allow for the amount of excess zero and span drift measured at the 24-hour interval checks to be recorded and quantified. The optical surfaces exposed to the effluent gases must be cleaned prior to performing the zero and span drift adjustments, except for systems using automatic zero adjustments. For systems using automatic zero adjustments, the optical surfaces must be cleaned when the cumulative automatic zero compensation exceeds 4 percent opacity. (40 CFR 60.255(g)(2)(ii))
- (iii) The owner or operator must apply a method for producing a simulated zero opacity condition and an upscale (span) opacity condition using a certified neutral density filter or other related technique to produce a known obscuration of the light beam. All procedures applied must provide a system check of the analyzer internal optical surfaces and all electronic circuitry including the lamp and photodetector assembly. (40 CFR 60.255(g)(2)(iii))
- (iv) Except during periods of system breakdowns, repairs, calibration checks, and zero and span adjustments, the COMS must be in continuous operation and must complete a minimum of one cycle of sampling and analyzing for each successive 10-second period and one cycle of data recording for each successive 6-minute period. (40 CFR 60.255(g)(2)(iv))
- (v) The owner or operator must reduce all data from the COMS to 6- minute averages. Six-minute opacity averages must be calculated from 36 or more data points equally spaced over each 6-minute period. Data recorded during periods of system breakdowns, repairs, calibration checks, and zero and span adjustments must not be included in the data averages. An arithmetic or integrated average of all data may be used. (40 CFR 60.255(g)(2)(v))

ii. Continuous monitoring requirements (if applicable) (40 CFR 60.256)

- 1) The owner or operator of each affected facility constructed, reconstructed, or modified after April 28, 2008, that has one or more mechanical vents must install, calibrate, maintain, and continuously operate the monitoring devices specified in paragraphs (b)(1) through (3) of this section, as applicable to the mechanical vent and any control device installed on the vent. (40 CFR 60.256(b))
 - (a) For mechanical vents with fabric filters (baghouses) with design controlled potential PM emissions rates of 25 Mg (28 tons) per year or more, a bag leak detection system according to the requirements in paragraph (c) of this section. (40 CFR 60.256(b)(1))
 - (b) For mechanical vents with wet scrubbers, monitoring devices according to the requirements in paragraphs (b)(2)(i) through (iv) of this section. (40 CFR 60.256(b)(2))
 - (i) A monitoring device for the continuous measurement of the pressure loss through the venturi constriction of the control equipment. The monitoring device is to be certified by the manufacturer to be accurate within ± 1 inch water gauge. (40 CFR 60.256(b)(2)(i))
 - (ii) A monitoring device for the continuous measurement of the water supply flow rate to the control equipment. The monitoring device is to be certified by the manufacturer to be accurate within ± 5 percent of design water supply flow rate. (40 CFR 60.256(b)(2)(ii))
 - (iii) A monitoring device for the continuous measurement of the pH of the wet scrubber liquid. The monitoring device is to be certified by the manufacturer to be accurate within ± 5 percent of design pH. (40 CFR 60.256(b)(2)(iii))
 - (iv) An average value for each monitoring parameter must be determined during each performance test. Each monitoring parameter must then be maintained within 10 percent of the value established during the most recent performance test on an operating day

average basis. (40 CFR 60.256(b)(2)(iv))

- (c) For mechanical vents with control equipment other than wet scrubbers, a monitoring device for the continuous measurement of the reagent injection flow rate to the control equipment, as applicable. The monitoring device is to be certified by the manufacturer to be accurate within ± 5 percent of design injection flow rate. An average reagent injection flow rate value must be determined during each performance test. The reagent injection flow rate must then be maintained within 10 percent of the value established during the most recent performance test on an operating day average basis. (40 CFR 60.256(b)(3))
- 2) Each bag leak detection system used to comply with provisions of this subpart must be installed, calibrated, maintained, and continuously operated according to the requirements in paragraphs (c)(1) through (3) of this section. (40 CFR 60.256(c))
- (a) The bag leak detection system must meet the specifications and requirements in paragraphs (c)(1)(i) through (viii) of this section. (40 CFR 60.256(c)(1))
 - (i) The bag leak detection system must be certified by the manufacturer to be capable of detecting PM emissions at concentrations of 1 milligram per dry standard cubic meter (mg/dscm) (0.00044 grains per actual cubic foot (gr/acf)) or less. (40 CFR 60.256(c)(1)(i))
 - (ii) The bag leak detection system sensor must provide output of relative PM loadings. The owner or operator shall continuously record the output from the bag leak detection system using electronic or other means (e.g., using a strip chart recorder or a data logger). (40 CFR 60.256(c)(1)(ii))
 - (iii) The bag leak detection system must be equipped with an alarm system that will sound when the system detects an increase in relative particulate loading over the alarm set point established according to paragraph (c)(1)(iv) of this section, and the alarm must be located such that it can be heard by the appropriate plant personnel. (40 CFR 60.256(c)(1)(iii))

- (iv) In the initial adjustment of the bag leak detection system, the owner or operator must establish, at a minimum, the baseline output by adjusting the sensitivity (range) and the averaging period of the device, the alarm set points, and the alarm delay time. (40 CFR 60.256(c)(1)(iv))
 - (v) Following initial adjustment, the owner or operator must not adjust the averaging period, alarm set point, or alarm delay time without approval from the Administrator or delegated authority except as provided in paragraph (c)(2)(vi) of this section. (40 CFR 60.256(c)(1)(v))
 - (vi) Once per quarter, the owner or operator may adjust the sensitivity of the bag leak detection system to account for seasonal effects, including temperature and humidity, according to the procedures identified in the site-specific monitoring plan required by paragraph (c)(2) of this section. (40 CFR 60.256(c)(1)(vi))
 - (vii) The owner or operator must install the bag leak detection sensor downstream of the fabric filter. (40 CFR 60.256(c)(1)(vii))
 - (viii) Where multiple detectors are required, the system's instrumentation and alarm may be shared among detectors. (40 CFR 60.256(c)(1)(viii))
- (b) The owner or operator must develop and submit to the Administrator or delegated authority for approval a site-specific monitoring plan for each bag leak detection system. This plan must be submitted to the Administrator or delegated authority 30 days prior to startup of the affected facility. The owner or operator must operate and maintain the bag leak detection system according to the site-specific monitoring plan at all times. Each monitoring plan must describe the items in paragraphs (c)(2)(i) through (vi) of this section. (40 CFR 60.256(c)(2))
- (i) Installation of the bag leak detection system; (40 CFR 60.256(c)(2)(i))
 - (ii) Initial and periodic adjustment of the bag leak detection system, including how the alarm set-point

- will be established; (40 CFR 60.256(c)(2)(ii))
- (iii) Operation of the bag leak detection system, including quality assurance procedures; (40 CFR 60.256(c)(2)(iii))
 - (iv) How the bag leak detection system will be maintained, including a routine maintenance schedule and spare parts inventory list; (40 CFR 60.256(c)(2)(iv))
 - (v) How the bag leak detection system output will be recorded and stored; and (40 CFR 60.256(c)(2)(v))
 - (vi) Corrective action procedures as specified in paragraph (c)(3) of this section. In approving the site-specific monitoring plan, the Administrator or delegated authority may allow the owner and operator more than 3 hours to alleviate a specific condition that causes an alarm if the owner or operator identifies in the monitoring plan this specific condition as one that could lead to an alarm, adequately explains why it is not feasible to alleviate this condition within 3 hours of the time the alarm occurs, and demonstrates that the requested time will ensure alleviation of this condition as expeditiously as practicable. (40 CFR 60.256(c)(2)(vi))
- (c) For each bag leak detection system, the owner or operator must initiate procedures to determine the cause of every alarm within 1 hour of the alarm. Except as provided in paragraph (c)(2)(vi) of this section, the owner or operator must alleviate the cause of the alarm within 3 hours of the alarm by taking whatever corrective action(s) are necessary. Corrective actions may include, but are not limited to the following: (40 CFR 60.256(c)(3))
- (i) Inspecting the fabric filter for air leaks, torn or broken bags or filter media, or any other condition that may cause an increase in PM emissions; (40 CFR 60.256(c)(3)(i))
 - (ii) Sealing off defective bags or filter media; (40 CFR 60.256(c)(3)(ii))

- (iii) Replacing defective bags or filter media or otherwise repairing the control device; (40 CFR 60.256(c)(3)(iii))
 - (iv) Sealing off a defective fabric filter compartment; (40 CFR 60.256(c)(3)(iv))
 - (v) Cleaning the bag leak detection system probe or otherwise repairing the bag leak detection system; or (40 CFR 60.256(c)(3)(v))
 - (vi) Shutting down the process producing the PM emissions. (40 CFR 60.256(c)(3)(vi))
- iii. Test methods and procedures (if applicable) (40 CFR 60.257)
- 1) The owner or operator must determine compliance with the applicable opacity standards as specified in paragraphs (a)(1) through (3) of this section. (40 CFR 60.257(a))
 - (a) Method 9 of appendix A-4 of this part and the procedures in 40 CFR 60.11 must be used to determine opacity, with the exceptions specified in paragraphs (a)(1)(i) and (ii). (40 CFR 60.257(a)(1))
 - (i) The duration of the Method 9 of appendix A-4 of this part performance test shall be 1 hour (ten 6-minute averages). (40 CFR 60.257(a)(1)(i))
 - (ii) If, during the initial 30 minutes of the observation of a Method 9 of appendix A-4 of this part performance test, all of the 6-minute average opacity readings are less than or equal to half the applicable opacity limit, then the observation period may be reduced from 1 hour to 30 minutes. (40 CFR 60.257(a)(1)(ii))
 - (b) To determine opacity for fugitive coal dust emissions sources, the additional requirements specified in paragraphs (a)(2)(i) through (iii) must be used. (40 CFR 60.257(a)(2))
 - (i) The minimum distance between the observer and the emission source shall be 5.0 meters (16 feet), and the sun shall be oriented in the 140-degree sector of the back. (40 CFR 60.257(a)(2)(i))

- (ii) The observer shall select a position that minimizes interference from other fugitive coal dust emissions sources and make observations such that the line of vision is approximately perpendicular to the plume and wind direction. (40 CFR 60.257(a)(2)(ii))
 - (iii) The observer shall make opacity observations at the point of greatest opacity in that portion of the plume where condensed water vapor is not present. Water vapor is not considered a visible emission. (40 CFR 60.257(a)(2)(iii))
 - (c) A visible emissions observer may conduct visible emission observations for up to three fugitive, stack, or vent emission points within a 15-second interval if the following conditions specified in paragraphs (a)(3)(i) through (iii) of this section are met. (40 CFR 60.257(a)(3))
 - (i) No more than three emissions points may be read concurrently. (40 CFR 60.257(a)(3)(i))
 - (ii) All three emissions points must be within a 70 degree viewing sector or angle in front of the observer such that the proper sun position can be maintained for all three points. (40 CFR 60.257(a)(3)(ii))
 - (iii) If an opacity reading for any one of the three emissions points is within 5 percent opacity from the applicable standard (excluding readings of zero opacity), then the observer must stop taking readings for the other two points and continue reading just that single point. (40 CFR 60.257(a)(3)(iii))
- 2) The owner or operator must conduct all performance tests required by 40 CFR 60.8 to demonstrate compliance with the applicable emissions standards specified in 40 CFR 60.252 according to the requirements in 40 CFR 60.8 using the applicable test methods and procedures in paragraphs (b)(1) through (8) of this section. (40 CFR 60.257(b))
 - (a) Method 1 or 1A of appendix A-4 of this part shall be used to select sampling port locations and the number of traverse points in each stack or duct. Sampling sites must be located at the outlet of the control device (or at the outlet of the

emissions source if no control device is present) prior to any releases to the atmosphere. (40 CFR 60.257(b)(1))

- (b) Method 2, 2A, 2C, 2D, 2F, or 2G of appendix A-4 of this part shall be used to determine the volumetric flow rate of the stack gas. (40 CFR 60.257(b)(2))
- (c) Method 3, 3A, or 3B of appendix A-4 of this part shall be used to determine the dry molecular weight of the stack gas. The owner or operator may use ANSI/ASME PTC 19.10-1981, "Flue and Exhaust Gas Analyses (incorporated by reference—see 40 CFR 60.17) as an alternative to Method 3B of appendix A-2 of this part. (40 CFR 60.257(b)(3))
- (d) Method 4 of appendix A-4 of this part shall be used to determine the moisture content of the stack gas. (40 CFR 60.257(b)(4))
- (e) Method 5, 5B or 5D of appendix A-4 of this part or Method 17 of appendix A-7 of this part shall be used to determine the PM concentration as follows: (40 CFR 60.257(b)(5))
 - (i) The sampling time and sample volume for each run shall be at least 60 minutes and 0.85 dscm (30 dscf). Sampling shall begin no less than 30 minutes after startup and shall terminate before shutdown procedures begin. A minimum of three valid test runs are needed to comprise a PM performance test. (40 CFR 60.257(b)(5)(i))
 - (ii) Method 5 of appendix A of this part shall be used only to test emissions from affected facilities without wet flue gas desulfurization (FGD) systems. (40 CFR 60.257(b)(5)(ii))
 - (iii) Method 5B of appendix A of this part is to be used only after wet FGD systems. (40 CFR 60.257(b)(5)(iii))
 - (iv) Method 5D of appendix A-4 of this part shall be used for positive pressure fabric filters and other similar applications (e.g., stub stacks and roof vents). (40 CFR 60.257(b)(5)(iv))
 - (v) Method 17 of appendix A-6 of this part may be used

at facilities with or without wet scrubber systems provided the stack gas temperature does not exceed a temperature of 160 °C (320 °F). The procedures of sections 8.1 and 11.1 of Method 5B of appendix A-3 of this part may be used in Method 17 of appendix A-6 of this part only if it is used after a wet FGD system. Do not use Method 17 of appendix A-6 of this part after wet FGD systems if the effluent is saturated or laden with water droplets. (40 CFR 60.257(b)(5)(v))

- iv. The owner or operator of a coal preparation and processing plant that commenced construction, reconstruction, or modification after April 28, 2008, shall maintain in a logbook (written or electronic) on-site and make it available upon request. The logbook shall record the following: (40 CFR 60.258(a))
- 1) The manufacturer's recommended maintenance procedures and the date and time of any maintenance and inspection activities and the results of those activities. Any variance from manufacturer recommendation, if any, shall be noted. (40 CFR 60.258(a)(1))
 - 2) The date and time of periodic coal preparation and processing plant visual observations, noting those sources with visible emissions along with corrective actions taken to reduce visible emissions. Results from the actions shall be noted. (40 CFR 60.258(a)(2))
 - 3) The amount and type of coal processed each calendar month. (40 CFR 60.258(a)(3))
 - 4) The amount of chemical stabilizer or water purchased for use in the coal preparation and processing plant. (40 CFR 60.258(a)(4))
 - 5) Monthly certification that the dust suppressant systems were operational when any coal was processed and that manufacturer's recommendations were followed for all control systems. Any variance from the manufacturer's recommendations, if any, shall be noted. (40 CFR 60.258(a)(5))
 - 6) Monthly certification that the fugitive coal dust emissions control plan was implemented as described. Any variance from the plan, if any, shall be noted. A copy of the applicable fugitive coal dust emissions control plan and any letters from the Administrator providing approval of any alternative control measures shall be maintained with the logbook. Any actions, e.g. objections, to the plan and any actions relative to the alternative control measures,

e.g. approvals, shall be noted in the logbook as well. (40 CFR 60.258(a)(6))

- 7) For each bag leak detection system, the owner or operator must keep the records specified in paragraphs (a)(7)(i) through (iii) of this section. (40 CFR 60.258(a)(7))
 - (a) Records of the bag leak detection system output; (40 CFR 60.258(a)(7)(i))
 - (b) Records of bag leak detection system adjustments, including the date and time of the adjustment, the initial bag leak detection system settings, and the final bag leak detection settings; and (40 CFR 60.258(a)(7)(ii))
 - (c) The date and time of all bag leak detection system alarms, the time that procedures to determine the cause of the alarm were initiated, the cause of the alarm, an explanation of the actions taken, the date and time the cause of the alarm was alleviated, and whether the cause of the alarm was alleviated within 3 hours of the alarm. (40 CFR 60.258(a)(7)(iii))
- 8) A copy of any applicable monitoring plan for a digital opacity compliance system and monthly certification that the plan was implemented as described. Any variance from plan, if any, shall be noted. (40 CFR 60.258(a)(8))
- 9) During a performance test of a wet scrubber, and each operating day thereafter, the owner or operator shall record the measurements of the scrubber pressure loss, water supply flow rate, and pH of the wet scrubber liquid. (40 CFR 60.258(a)(9))
- 10) During a performance test of control equipment other than a wet scrubber, and each operating day thereafter, the owner or operator shall record the measurements of the reagent injection flow rate, as applicable. (40 CFR 60.258(a)(10))

d. **TAC**

See Plant-wide Requirements S2.b.

S3. **Reporting** (Regulation 2.16, section 4.1.9.3)

The owner or operator shall submit quarterly compliance reports that include the information in this section.

a. **PM**

There are no routine reporting requirements for this equipment. (See comment 1)

b. **Opacity**

The owner or operator shall identify all periods of exceeding an opacity standard during a quarterly reporting period. The report shall include the following:

- i. Any deviation from the requirement to perform and record the results of visible emission surveys or Method 9 tests;
- ii. The number, date, and time of each visible emissions survey where visible emissions were observed and the results of the Method 9 test performed;
- iii. Identification of all periods of exceeding the opacity standard; and
- iv. Description of any corrective action taken for each exceedance of the opacity standard.

c. **Standards of Performance for Coal Preparation and Processing Plants (40 CFR 60, Subpart Y)**

- i. For the purpose of reports required under section 60.7(c), any owner operator subject to the provisions of this subpart also shall report semiannually periods of excess emissions as follow: (40 CFR 60.258(b))
 - 1) The owner or operator of an affected facility with a wet scrubber shall submit semiannual reports to the Administrator or delegated authority of occurrences when the measurements of the scrubber pressure loss, water supply flow rate, or pH of the wet scrubber liquid vary by more than 10 percent from the average determined during the most recent performance test. (40 CFR 60.258(b)(1))
 - 2) The owner or operator of an affected facility with control equipment other than a wet scrubber shall submit semiannual reports to the Administrator or delegated authority of occurrences when the measurements of the reagent injection flow rate, as applicable, vary by more than 10 percent from the average determined during the most recent performance test. (40 CFR 60.258(b)(2))
 - 3) All 6-minute average opacities that exceed the applicable standard. (40 CFR 60.258(b)(3))
- ii. The owner or operator of an affected facility shall submit the results of initial performance tests to the Administrator or delegated authority, consistent with the provisions of section 60.8. The owner or operator who elects to comply with the reduced performance testing provisions of sections 60.255(c) or (d) shall include in the performance test report

identification of each affected facility that will be subject to the reduced testing. The owner or operator electing to comply with section 60.255(d) shall also include information which demonstrates that the control devices are identical. (40 CFR 60.258(c))

- iii. After July 1, 2011, within 60 days after the date of completing each performance evaluation conducted to demonstrate compliance with this subpart, the owner or operator of the affected facility must submit the test data to EPA by successfully entering the data electronically into EPA's WebFIRE data base available at <http://cfpub.epa.gov/oarweb/index.cfm?action=fire.main>. For performance tests that cannot be entered into WebFIRE (i.e., Method 9 of appendix A-4 of this part opacity performance tests) the owner or operator of the affected facility must mail a summary copy to United States Environmental Protection Agency; Energy Strategies Group; 109 TW Alexander DR; mail code: D243-01; RTP, NC 27711. (40 CFR 60.258(d))

d. **TAC**

See Plant-wide Requirements S2.b.

Emission Unit U22: Landfill**U22 Applicable Regulations:**

| FEDERALLY ENFORCEABLE REGULATIONS | | |
|--|---|----------------------------|
| Regulation | Title | Applicable Sections |
| 1.14 | Control of Fugitive Particulate Emissions | 1, 2, 3, 4, 5, 8, 9 |

| DISTRICT ONLY ENFORCEABLE REGULATIONS | | |
|--|---|----------------------------|
| Regulation | Title | Applicable Sections |
| 5.00 | Definitions | 1, 2 |
| 5.01 | General Provisions | 1 through 2 |
| 5.20 | Methodology for Determining Benchmark Ambient Concentration of a Toxic Air Contaminant | 1 through 6 |
| 5.21 | Environmental Acceptability for Toxic Air Contaminants | 1 through 5 |
| 5.22 | Procedures for Determining the Maximum Ambient Concentration of a Toxic Air Contaminant | 1 through 5 |
| 5.23 | Categories of Toxic Air Contaminants | 1 through 6 |

U22 Equipment:

| Emission Point | Description | Applicable Regulation | Control ID | Stack ID |
|-----------------------|---------------------------------|--|-------------------|-----------------|
| E48a | Landfill haul roads | 1.14, 5.00, 5.01, 5.20, 5.21, 5.22, 5.23 | N/A | N/A |
| E48b | Landfill drop points | | N/A | N/A |
| E48c | Landfill wind erosion emissions | | N/A | N/A |

U22 Control Devices:

Particulate emissions from landfill haul roads are controlled according to an approved plant-wide Fugitive Dust Control Plan.¹²⁸ (See Attachment F)

¹²⁸ LG&E submitted a Fugitive Dust Control Plan for Paved & Unpaved Roads on June 28, 2013 and the District approved the plan on 06/05/2014.

U22 Specific Conditions

S1. Standards (Regulation 2.16, section 4.1.1)

a. PM

The owner or operator shall not allow any materials to be handled, transported, or stored, or a road to be used without taking reasonable precautions to prevent particulate matter from becoming airborne beyond the work site. Such precautions shall include, where applicable, but shall not be limited to the following: (Regulation 1.14, section 2.1)

- i. Using, where possible, water or chemicals for control of dust in the grading of roads or the clearing of land,
- ii. Applying and maintaining asphalt, oil, water, or suitable chemicals on roads, materials stockpiles, and other surfaces which can create airborne dusts, (Regulation 1.14, section 2.1.2)
- iii. Covering at all times, except when loading and unloading, open bodied trucks transporting materials likely to become airborne, (Regulation 1.14, section 2.1.4)

b. Opacity

- i. The owner or operator shall not allow visible emissions to equal or exceed 20% opacity. (Regulation 1.14, section 2.3)
- ii. The owner or operator shall not allow visible fugitive emissions beyond the lot line of the property on which the emissions originate. (Regulation 1.14, section 2.4)

c. TAC

See Plant-wide Requirements S1.b.¹²⁹

S2. Monitoring and Record Keeping (Regulation 2.16, sections 4.1.9.1 and 4.1.9.2)

The owner or operator shall maintain the required records for a minimum of 5 years and make the records readily available to the District upon request.

¹²⁹ LG&E submitted a TAC Environmental Acceptability Demonstration for this unit on July 19 and July 31, 2013. It has been demonstrated that the risk values of this unit are in compliance with the EA Goals.

a. **PM**

- i. The owner or operator shall keep records of type and amount of the materials transferred to the landfill area.
- ii. The owner or operator shall keep records of vehicle miles traveled (VMT) and weights for the vehicles traveled on the landfill area.

b. **Opacity**

See Specific Condition S2.a.

c. **TAC**

See Plant-wide Requirements S2.b

S3. **Reporting** (Regulation 2.16, section 4.1.9.3)

The owner or operator shall submit quarterly compliance reports that include the information in this section.

a. **PM/ Opacity**

The owner or operator shall report any deviation from the attached Fugitive Dust Control Plan during the reporting period.

b. **TAC**

See Plant-wide Requirements S2.b

Permit Shield

The owner or operator is hereby granted a permit shield that shall apply as long as the owner or operator demonstrates ongoing compliance with all conditions of this permit. Compliance with the conditions of this permit shall be deemed compliance with all applicable requirements of the regulations cited in this permit as of the date of issuance, pursuant to Regulation 2.16, section 4.6.1.

Off-Permit Documents

There are no off permit documents associated with this Title V permit.

Alternative Operating Scenario

The company requested no alternative operating scenario in its Title V application.

Insignificant Activities

| Equipment | Quan. | PTE (tpy) | Regulation Basis |
|---|-------|-----------------------|------------------------------------|
| Fuel or Lubricating oils storage tanks with vapor pressure <10mm Hg @ 20 deg C (See unit IA-OT) | 17 | 0.005 VOC | Regulation 1.02, Appendix A, 3.9.2 |
| 1,000 gallon storage tank for #1 fuel oil with annual turnover < 2X the capacity (See unit IA-OT) | 1 | 0.001 VOC | Regulation 1.02, Appendix A, 3.25 |
| Minor natural gas combustion sources <10 MMBtu/hr (direct heat exchangers) | 24 | 0.79 NOx | Regulation 2.16, section 1.23 |
| Emergency relief vents for boiler steam supply | 24 | 0 | Regulation 1.02, Appendix A, 3.10 |
| Lab exhaust systems | 3 | 0.001 VOC | Regulation 1.02, Appendix A, 3.11 |
| Portable kerosene storage tanks with capacity less than 500 gallons (See unit IA-OT) | 1 | 3.5e-5 VOC | Regulation 1.02, Appendix A, 3.23 |
| Ash pond with wet storage | 1 | 0 | Regulation 2.16, section 1.23 |
| Cooling Towers for Unit 2 and Unit 3 (See unit IA-OT) | 2 | 3.35 PM ₁₀ | Regulation 2.16, section 1.23 |
| Stack piles (coal, limestone, gypsum piles) | 3 | 1.66 PM ₁₀ | Regulation 2.16, section 1.23 |
| Turbine oil reservoir vapor extractor | 4 | 0 | Regulation 2.16, section 1.23 |
| Hydrogen seal oil tank vent | 4 | 0 | Regulation 2.16, section 1.23 |
| Gypsum handling equipment (See unit IA-OT) | 1 | 4.69 PM ₁₀ | Regulation 2.16, section 1.23 |
| Portable gypsum dewatering systems (See unit IA-OT) | 2 | 1.27 PM ₁₀ | Regulation 2.16, section 1.23 |
| Gasoline storage tank, 3,000 gallons (previous U10, see unit IA1) | 1 | 1.87 VOC | Regulation 2.16, section 1.23 |
| Non-halogenated cold solvent parts washers with secondary reservoir (previous U11, see unit IA2) | 8 | 0.33 VOC | Regulation 2.16, section 1.23 |
| Emergency generators, 800 HP each (previous U13, | 2 | 4.93 NOx | Regulation 2.16, section 1.23 |

| Equipment | Quan. | PTE (tpy) | Regulation Basis |
|--|--------------|------------------|-------------------------------|
| see unit IA3) | | | |
| Fire pumps, 157 HP and 183 HP (See unit IA4) | 2 | 1.42 NOx | Regulation 2.16, section 1.23 |
| Emergency vent for U1 and U2 boilers | 1 | 0.7 NOx | Regulation 2.16, section 1.23 |

- 1) Insignificant Activities identified in District Regulation 1.02 Appendix A may be subject to size or production rate disclosure requirements.
- 2) Insignificant Activities identified in District Regulation 1.02 Appendix A shall comply with generally applicable requirements.
- 3) Activities identified in Regulation 1.02, Appendix A, may not require a permit and may be insignificant with regard to application disclosure requirements but may still have generally applicable requirements that continue to apply to the source and must be included in the permit.
- 4) Emissions from Insignificant Activities shall be reported in conjunction with the reporting of annual emissions of the facility as required by the District.
- 5) In lieu of recording annual throughputs and calculating actual annual emissions, the owner or operator may elect to report the pollutant Potential To Emit (PTE) quantity listed in the Insignificant Activities table, as the annual emission for each piece of equipment.
- 6) The Insignificant Activities Table is correct as of the date the permit was proposed for review by U.S. EPA, Region 4.
- 7) The owner or operator shall submit an updated list of Insignificant Activities whenever changes in equipment located at the facility occur that cause changes to the plant wide emissions.

Emission Unit IA1: Gasoline storage tank¹³⁰

IA1 Applicable Regulations:

| FEDERALLY ENFORCEABLE REGULATIONS | | |
|--|--|---|
| Regulation | Title | Applicable Sections |
| 6.40 | Standards of Performance for Gasoline Transfer to Motor Vehicles (Stage II Vapor Recovery) | 1.3 |
| 7.15 | Standards of Performance for Gasoline Transfer to New Service Station Storage Tanks (Stage I Vapor Recovery) | 1, 2, 3.1, 3.3, 3.4, 3.6, 3.7, 3.8, and 5 |

IA1 Equipment:¹³¹

| Emission Point | Description | Applicable Regulation | Control ID |
|-----------------------|---|------------------------------|-------------------|
| E20 | One (1) Stage I gasoline refueling station, including one 3,000 gallon unleaded gasoline storage tank | 6.40 and 7.15 | N/A |

IA1 Control Devices:

This unit is equipped with a Stage I vapor recovery system.

¹³⁰ Per Regulation 5.21, section 2.3, emissions from insignificant activity are de minimis.

¹³¹ The storage tank under this unit meets the definition of insignificant activities per Regulation 2.16, section 1.23. However, Regulation 6.40 or 7.15 applies to gasoline storage vessels. These tanks shall meet the requirements under Regulation 6.40 or 7.15.

IA1 Specific Conditions**S1. Standards** (Regulation 2.16, section 4.1.1)**VOC** (Regulation 7.15, section 3 and Regulation 6.40, section 1.3)

- i. The owner or operator of an affected facility shall install, maintain, and operate the following devices on the storage tank: (Regulation 7.15, section 3.1)
 - 1) Submerged fill pipe; (Regulation 7.15, section 3.1.1)
 - 2) If the gasoline storage tank is equipped with a separate gauge well, a gauge well drop tube shall be installed which extends to within six inches of the bottom of the tank; (Regulation 7.15, section 3.1.2)
 - 3) Vent line restrictions on the affected facility; and (Regulation 7.15, section 3.1.3)
 - 4) Vapor balance system and vapor tight connections on the liquid fill and vapor return hoses. The cross-sectional area of the vapor return hose and any other vapor return passages in the circuit connecting the vapor space in the service station tank to that of the truck tank must be at least 50% of the liquid fill hose cross-sectional area for each tank and free of flow restrictions to achieve acceptable recovery. The vapor balance equipment must be maintained according to the manufacturer's specifications. The type, size and design of the vapor balance system are subject to the approval of the District. (Regulation 7.15, section 3.1.4)
- ii. The owner or operator shall not allow delivery of fuel to the storage tanks until the vapor balance system is properly connected to the transport vehicle and the affected facility. (Regulation 7.15, section 3.3)
- iii. No person shall deliver gasoline to a service station as defined in Regulation 7.15 without connecting the vapor return hose between the tank of the delivery truck and the storage tank receiving the product. The vapor balance system must be operating in accordance with the manufacturer's specifications. (Regulation 7.15, section 3.4)
- iv. The owner or operator shall equip above ground tanks with dry breaks with any liquid spillage upon the line disconnect not exceeding 10 ml. (Regulation 7.15, section 3.7)
- v. The owner or operator shall operate and maintain equipment with no defects and: (Regulation 7.15, section 3.8)

- 1) All fill tubes shall be equipped with vapor-tight covers including gaskets, (Regulation 7.15, section 3.8.1)
- 2) All dry breaks shall have vapor-tight seals and shall be equipped with vapor-tight covers or dust covers, (Regulation 7.15, section 3.8.2)
- 3) All vapor return passages shall be operated so there can be no obstruction of vapor passage from the storage tank back to the delivery vehicle, (Regulation 7.15, section 3.8.3)
- 4) All storage tank vapor return pipes and fill pipes without dry breaks shall be equipped with vapor-tight covers including gaskets, and (Regulation 7.15, section 3.8.4)
- 5) All hoses, fittings, and couplings shall be in a vapor-tight condition. (Regulation 7.15, section 3.8.5)

- vi. The owner or operator shall not dispense more than 10,000 gallons per month based on the average volume of gasoline dispensed during any consecutive 12 months. (Regulation 6.40, section 1.1)

S2. Monitoring and Record Keeping (Regulation 2.16, sections 4.1.9.1 and 4.1.9.2)

The owner or operator shall maintain the following records for a minimum of 5 years and make the records readily available to the District upon request.

VOC

The owner or operator shall keep a record of the amount of throughput of gasoline per month to determine compliance with Specific Condition S1.vi. (Regulation 6.40, section 3.1.1)

S3. Reporting (Regulation 2.16, section 4.1.9.3)

The owner or operator shall submit compliance reports that include the information in this section.

VOC

The owner or operator shall submit a report by April 15th every year showing that they are still exempt from Regulation 6.40. (Regulation 6.40, section 2.2.1)

Emission Unit IA2: Parts washers with secondary reservoirs¹³²**IA2 Applicable Regulations:**

| FEDERALLY ENFORCEABLE REGULATIONS | | |
|--|---|----------------------------|
| Regulation | Title | Applicable Sections |
| 6.18 | Standards of Performance for Solvent metal Cleaning Equipment | 1 through 6 |

IA2 Equipment:¹³³

| Emission Point | Description | Applicable Regulation | Control ID |
|-----------------------|--|------------------------------|-------------------|
| IE1 – IE8 | Eight (8) parts washers each equipped with a secondary reservoir | 6.18 | N/A |

IA2 Control Devices:

There are no control devices associated with emission unit IA2.

¹³² Per Regulation 5.21, section 2.3, emissions from insignificant activity are de minimis.

¹³³ The parts washers under this unit meet the definition of insignificant activities per Regulation 2.16, section 1.23. However, Regulation 6.18 applies to each cold cleaner that uses VOC to remove soluble impurities from metal surfaces. These parts washers shall meet the requirements under Regulation 6.18.

IA2 Specific Conditions**S1. Standards** (Regulation 2.16, section 4.1.1)**VOC**

- a. The owner or operator shall install, maintain, and operate the control equipment as follows: (Regulation 6.18, section 4.1)
 - i. The cold cleaner shall be equipped with a tightly fitting cover that is free of cracks, holes, or other defects. If the solvent is agitated or heated, then the cover shall be designed so that it can be easily operated with 1 hand. (Regulation 6.18, section 4.1.1)
 - ii. The cold cleaner shall be equipped with a drainage facility that is designed so that the solvent that drains off parts removed from the cleaner will return to the cold cleaner. The drainage facility may be external if the District determines that an internal type cannot fit into the cleaning system. (Regulation 6.18, section 4.1.2)
 - iii. A permanent, conspicuous label summarizing the operating requirements specified in Specific Condition S1.b. shall be installed on or near the cold cleaner. (Regulation 6.18, section 4.1.3)
 - iv. If used, the solvent spray shall be a fluid stream, not a fine, atomized, or shower type spray, at a pressure that does not cause excessive splashing. Flushing of parts using a flexible hose or other flushing device shall be performed only within the freeboard area of the cold cleaner. Solvent flow shall be directed downward to avoid turbulence at the air-solvent interface and to prevent solvent from splashing outside of the cold cleaner. (Regulation 6.18, section 4.1.4)
 - v. Work area fans shall be located and positioned so that they do not blow across the opening of the cold cleaner. (Regulation 6.18, section 4.1.6)
 - vi. The solvent-containing portion of the cold cleaner shall be free of all liquid leaks. Auxiliary cold cleaner equipment such as pumps, water separators, steam traps, or distillation units shall not have any visible liquid leaks, visible tears, or cracks. (Regulation 6.18, section 4.1.8)
- b. The owner or operator shall observe at all times the following operating requirements: (Regulation 6.18, section 4.2)
 - i. Waste solvent shall neither be disposed of nor transferred to another party in a manner such that more than 20% by weight of the waste solvent can evaporate. Waste solvent shall be stored only in a covered container. A

covered container may contain a device that allows pressure relief, but does not allow liquid solvent to drain from the container. (Regulation 6.18, section 4.2.1)

- ii. The solvent level in the cold cleaner shall not exceed the fill line. (Regulation 6.18, section 4.2.2)
 - iii. The cold cleaner cover shall be closed whenever a part is not being handled in the cold cleaner. (Regulation 6.18, section 4.2.3)
 - iv. Parts to be cleaned shall be racked or placed into the cold cleaner in a manner that will minimize drag-out losses. (Regulation 6.18, section 4.2.4)
 - v. Cleaned parts shall be drained for at least 15 seconds or until dripping ceases, whichever is longer. Parts having cavities or blind holes shall be tipped or rotated while the part is draining. During the draining, tipping, or rotating, the parts shall be positioned so that the solvent drains directly back to the cold cleaner. (Regulation 6.18, section 4.2.5)
 - vi. A spill during solvent transfer shall be cleaned immediately, and the wipe rags or other sorbent material shall be immediately stored in a covered container for disposal or recycling, unless enclosed storage of these items is not allowed by fire protection authorities. (Regulation 6.18, section 4.2.6)
 - vii. Sponges, fabric, wood, leather, paper products, and other absorbent material shall not be cleaned in a cold cleaner. (Regulation 6.18, section 4.2.7)
- c. The owner or operator shall not operate a cold cleaner using a solvent with a vapor pressure that exceeds 1.0 mm Hg (0.019 psi) measured at 20°C (68°F). (Regulation 6.18, section 4.3.2)

S2. Monitoring and Record Keeping (Regulation 2.16, sections 4.1.9.1 and 4.1.9.2)

VOC

- a. The owner or operator shall maintain records that include the following for each purchase: (Regulation 6.18, section 4.4.2)
 - i. The name and address of the solvent supplier,
 - ii. The date of the purchase,
 - iii. The type of the solvent, and
 - iv. The vapor pressure of the solvent measured in mm Hg at 20°C (68°F).

- b. All records required in Specific Condition S2.a shall be retained for 5 years and made available to the District upon request. (Regulation 6.18, section 4.4.3)

S3. **Reporting** (Regulation 2.16, section 4.1.9.3)

VOC

There are no routine compliance reporting requirements for Regulation 6.18.

Emission Unit IA3: Two (2) emergency generators¹³⁴**IA3 Applicable Regulations:**

| FEDERALLY ENFORCEABLE REGULATIONS | | |
|-----------------------------------|--|---|
| Regulation | Title | Applicable Sections |
| 40 CFR 63, Subpart ZZZZ | National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines | 63.6603, 6604, 6605, 6625, 6640, 6645, 6655 |
| 40 CFR 60, Subpart IIII | Standards of Performance for Stationary Compression Ignition Internal Combustion Engines | 60.4200 - 4219 |

IA3 Equipment:^{135,136}

| Emission Point | Description | Applicable Regulation | Control ID | Stack ID |
|----------------|--|--|------------|----------|
| E36 | One (1) Turning Gear diesel generator, make Caterpillar, model C18, rated at 800 HP (597 KW) with an internal 404 gallon diesel fuel tank. Model year 2007 (Tier 2) ¹³⁷ | 40 CFR 63, Subpart ZZZZ, 40 CFR 60, Subpart IIII | N/A | N/A |
| E37 | One (1) diesel generator for FGD Quench Water system, make Caterpillar, model 3412, rated at 800 HP (597 KW) with an internal 450 gallon diesel fuel tank. Model year 2005 (Tier 1) ¹³⁸ | 40 CFR 63, Subpart ZZZZ | | |

IA3 Control Devices:

There are no control devices associated with this equipment.

¹³⁴ Per Regulation 5.21, section 2.3, emissions from insignificant activity are de minimis.

¹³⁵ This unit was previously permitted under construction permit 426-07. The associated internal storage tank for diesel fuel is exempt from District permitting requirements in accordance with Regulation 1.02, section 3.9.2.

¹³⁶ Potential emissions for this permitted operation are greatest for nitrogen oxides (NOx). Based on AP-42 Emission Factors and 500 hours per year for an emergency generator, as defined by EPA, the potential NOx emissions for this permitted operation is less than 5 tons per year.

¹³⁷ This engine (E36) is subject to 40 CFR 63, Subpart ZZZZ, National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines, because it involves a stationary reciprocating internal combustion engine (RICE) located at a major source of HAP emissions. It is also subject 40 CFR 60, Subpart IIII due to the engine's manufacture date and installation date.

¹³⁸ This engine (E37) is subject to 40 CFR 63, Subpart ZZZZ, National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines, because it involves a stationary reciprocating internal combustion engine (RICE) located at a major source of HAP emissions.

IA3 Specific Conditions

S1. Standards (Regulation 2.16, section 4.1.1)

a. Unit Operation

i. For E36: The owner or operator of 2007 model year and later emergency stationary CI ICE with a displacement of less than 30 liters per cylinder that are not fire pump engines shall comply with the emission standards for new nonroad CI engines in 40 CFR 60.4202, for all pollutants. (40 CFR 60.4205(b))

1) The stationary CI internal combustion engine manufacturers shall certify engines with a maximum engine power greater than or equal to 37 KW (50 HP) with the certification emission standards for new nonroad CI engines for the same model year and maximum engine power in 40 CFR 89.112 and 40 CFR 89.113 for all pollutants beginning in model year 2007. (40 CFR 60.4202(a)(2))

2) Exhaust emission standards and upper limit for family emission limits according 40 CFR 89.112(a) and (d):

| unit: g/KW-hr | NO _x | HC | NMHC+ NO _x | CO | PM |
|------------------------|-----------------|-----|-----------------------|-----|------|
| Emission Standards | N/A | N/A | 6.4 | 3.5 | 0.2 |
| Family Emission Limits | N/A | N/A | 10.5 | N/A | 0.54 |

ii. For E36: The owner or operator that must comply with the emission standards specified in 40 CFR 60, Subpart IIII shall do all of the following: (40 CFR 60.4211(a))

1) Operate and maintain the stationary CI internal combustion engine and control device according to the manufacturer's emission-related written instructions; (40 CFR 60.4211(a)(1))

2) Change only those emission-related settings that are permitted by the manufacturer; (40 CFR 60.4211(a)(2))

iii. For E36: The owner or operator shall purchase an engine certified to the emission standards in 40 CFR 60.4205(b), as applicable for the same model year and maximum engine power. The engine must be installed and configured according to the manufacturer's specifications. (40 CFR 60.4211(c))

- iv. For both E36 and E37: In order for the engine to be considered an emergency stationary ICE, any operation other than emergency operation, maintenance and testing, emergency demand response, and operation in non-emergency situations for 50 hours per year, as described in 40 CFR 60.4211(f)(1) through (3), is prohibited. If the owner or operator does not operate the engine according to the requirements in 40 CFR 60.4211(f)(1) through (3), the engine will not be considered an emergency engine and must meet all requirements for non-emergency engines. (40 CFR 60.4211(f), 40 CFR 63.6640(f))
- 1) There is no time limit on the use of emergency stationary ICE in emergency situations. (40 CFR 60.4211(f)(1), 40 CFR 63.6640(f)(1))
 - 2) The owner or operator may operate the emergency stationary ICE for any combination of the purposes specified in 40 CFR 60.4211(f)(2)(i) through (iii) for a maximum of 100 hours per calendar year. Any operation for non-emergency situations as allowed by 40 CFR 60.4211(f)(3) counts as part of the 100 hours per calendar year allowed by this paragraph. (40 CFR 60.4211(f)(2), 40 CFR 63.6640(f)(2)).
 - (a) Emergency stationary ICE may be operated for maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that federal, state, or local standards require maintenance and testing of emergency ICE beyond 100 hours per calendar year. (40 CFR 60.4211(f)(2)(i), 40 CFR 63.6640(f)(2)(i))
 - (b) Emergency stationary ICE may be operated for emergency demand response for periods in which the Reliability Coordinator under the North American Electric Reliability Corporation (NERC) Reliability Standard EOP-002-3, Capacity and Energy Emergencies (incorporated by reference, see 40 CFR 60.17), or other authorized entity as determined by the Reliability Coordinator, has declared an Energy Emergency Alert Level 2 as defined in the NERC

Reliability Standard EOP-002-3. (40 CFR 60.4211(f)(2)(ii), 40 CFR 63.6640(f)(2)(ii))

- (c) Emergency stationary ICE may be operated for periods where there is a deviation of voltage or frequency of 5 percent or greater below standard voltage or frequency. (40 CFR 60.4211(f)(2)(iii), 40 CFR 63.6640(f)(2)(iii))
- 3) Emergency stationary ICE may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing and emergency demand response provided in 40 CFR 60.4211(f)(2). Except as provided in 40 CFR 60.4211(f)(3)(i), the 50 hours per calendar year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to an electric grid or otherwise supply power as part of a financial arrangement with another entity. (40 CFR 60.4211(f)(3), 40 CFR 63.6640(f)(3))
- (a) The 50 hours per year for non-emergency situations can be used to supply power as part of a financial arrangement with another entity if all of the following conditions are met: (40 CFR 60.4211(f)(3)(i))
 - (i) The engine is dispatched by the local balancing authority or local transmission and distribution system operator; (40 CFR 60.4211(f)(3)(i)(A))
 - (ii) The dispatch is intended to mitigate local transmission and/or distribution limitations so as to avert potential voltage collapse or line overloads that could lead to the interruption of power supply in a local area or region. (40 CFR 60.4211(f)(3)(i)(B))
 - (iii) The dispatch follows reliability, emergency operation or similar protocols that follow specific NERC, regional, state, public utility commission or local standards or guidelines. (40 CFR 60.4211(f)(3)(i)(C))
 - (iv) The power is provided only to the facility itself or to support the local transmission and distribution system. (40 CFR 60.4211(f)(3)(i)(D))

- (v) The owner or operator identifies and records the entity that dispatches the engine and the specific NERC, regional, state, public utility commission or local standards or guidelines that are being followed for dispatching the engine. The local balancing authority or local transmission and distribution system operator may keep these records on behalf of the engine owner or operator. (40 CFR 60.4211(f)(3)(i)(E))
- v. For E37: At all times the owner or operator shall operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require the owner or operator to make any further efforts to reduce emissions if levels required by this standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source. (40 CFR 63.6605(b))
- b. **SO₂**
 - i. For E36: The owner or operator shall not combust in the engine a nonroad diesel fuel that contains more than 15 ppm of sulfur. (40 CFR 60.4207(b)) (40 CFR 80.510(b)(1)(i))
 - ii. For E37: Beginning January 1, 2015, the owner or operator shall not combust in the engine a nonroad diesel fuel that contains more than 15 ppm of sulfur. The diesel fuel shall meet the requirements in 40 CFR 80.510(b) for nonroad diesel fuel, except that any existing diesel fuel purchased (or otherwise obtained) prior to January 1, 2015, may be used until depleted. (40 CFR 63.6604(c))
- c. **HAP**

For both E36 and E37: The equipment listed in this emission unit is subject to 40 CFR 63, Subpart ZZZZ, however, there are no applicable HAP standards in this regulation. (See Comment 1)

S2. Monitoring and Record Keeping (Regulation 2.16, sections 4.1.9.1 and 4.1.9.2)

The owner or operator shall maintain the required records for a minimum of 5 years and make the records readily available to the District upon request.

a. **Unit Operation**

- i. For E36: The owner or operator of an emergency stationary CI internal combustion engine that does not meet the standards applicable to non-emergency engines, the owner or operator shall install a non-resettable hour meter prior to startup of the engine. (40 CFR 60.4209(a))
- ii. For E36: The owner or operator is not required to submit an initial notification. Starting with the model years in table 5 to this subpart, if the emergency engine does not meet the standards applicable to non-emergency engines in the applicable model year, the owner or operator shall keep records of the operation of the engine in emergency and non-emergency service that are recorded through the non-resettable hour meter. The owner must record the time of operation of the engine and the reason the engine was in operation during that time. (40 CFR 60.4214(b))

b. **SO₂**

The owner or operator shall maintain records of the fuel MSDS sheets and receipts showing dates, amounts of fuel purchased, sulfur content of fuel purchased and supplier's name and address, to show compliance with Specific Condition S1.b.

c. **HAP**

For both E36 and E37: There are no compliance monitoring or record keeping requirements for HAP.

S3. **Reporting** (Regulation 2.16, section 4.1.9.3)

The owner or operator shall submit quarterly compliance reports that include the information in this section.

a. **Unit Operation**

- i. For E36: The owner or operator is not required to submit an initial notification. (40 CFR 60.4214(b))
- ii. For E37:
 - 1) The owner or operator shall submit an Initial Notification not later than 120 days after become subject to 40 CFR 63, Subpart ZZZZ. (40 CFR 63.6645(c))
 - 2) If the owner or operator are required to submit an Initial Notification but are otherwise not affected by the requirements of

this subpart, the notification should include the information in 40 CFR 63.9(b)(2)(i) through (v), and a statement that your stationary RICE has no additional requirements and explain the basis of the exclusion. (40 CFR 63.6645(f))

b. **SO₂**

For both E36 and E37:

There are no routine compliance reporting requirements for this equipment.

c. **HAP**

For both E36 and E37:

There are no routine compliance reporting requirements for this equipment.

Emission Unit IA4: Two (2) fire pump engines¹³⁹**IA4 Applicable Regulations:**

| FEDERALLY ENFORCEABLE REGULATIONS | | |
|--|--|---|
| Regulation | Title | Applicable Sections |
| 40 CFR 63, Subpart ZZZZ | National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines | 63.6603, 6604, 6605, 6625, 6640, 6645, 6655 |
| 40 CFR 60, Subpart IIII | Standards of Performance for Stationary Compression Ignition Internal Combustion Engines | 60.4200 - 4219 |

IA4 Equipment:^{140,141}

| Emission Point | Description | Applicable Regulation | Control ID | Stack ID |
|-----------------------|--|---|-------------------|-----------------|
| IE9 | One (1) diesel fire pump engine, make Clarke, model JU4H-UFADY8, rated at 157 HP with a 187 gallon diesel fuel tank. ^{142,143} | 40 CFR 63, Subpart ZZZZ,
40 CFR 60, Subpart IIII | N/A | N/A |
| IE10 | One (1) diesel fire pump engine, make Clarke, model JU6H-UFADY58, rated at 183 HP with a 300 gallon diesel fuel tank. ^{142,143} | | | |

IA4 Control Devices:

There are no control devices associated with this equipment.

¹³⁹ Per Regulation 5.21, section 2.3, emissions from insignificant activity are de minimis.

¹⁴⁰ The associated storage tank for diesel fuel is exempt from District permitting requirements in accordance with Regulation 1.02, section 3.9.2.

¹⁴¹ Potential emissions for this permitted operation are greatest for nitrogen oxides (NOx). Based on AP-42 Emission Factors and 500 hours per year for an emergency generator, as defined by EPA, the potential NOx emissions for this permitted operation is less than 5 tons per year.

¹⁴² This operation is subject to 40 CFR 63, Subpart ZZZZ, National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines, because it involves a stationary reciprocating internal combustion engine (RICE) located at a major source of HAP emissions. The proposed new stationary RICE meets the definition in 40 CFR 63.6675 of an emergency stationary RICE, which, per 40 CFR 63.6590(c), shall meet the requirements of 40 CFR 63, Subpart ZZZZ and 40 CFR 60, Subpart IIII.

¹⁴³ Fire pump engine is an emergency engine per 40 CFR 60, Subpart IIII, 60.4219, "Fire pump engine" means an emergency stationary internal combustion engine certified to NFPA requirements that is used to provide power to pump water for fire suppression or protection."

IA4 Specific Conditions

S1. Standards (Regulation 2.16, section 4.1.1)

a. Unit Operation

- i. The owner or operator that must comply with the emission standards specified in 40 CFR 60, Subpart IIII shall do all of the following: (40 CFR 60.4211(a))
 - 1) Operate and maintain the stationary CI internal combustion engine and control device according to the manufacturer's emission-related written instructions; (40 CFR 60.4211(a)(1))
 - 2) Change only those emission-related settings that are permitted by the manufacturer; (40 CFR 60.4211(a)(2))
- ii. The owner or operator shall purchase an engine certified to the emission standards in 40 CFR 60.4205(c), as applicable for the same model year and maximum engine power. The engine must be installed and configured according to the manufacturer’s specifications. (40 CFR 60.4211(c))
- iii. Engine manufacturers shall certify the fire pump stationary CI engines to the emission standards in table 4 to 40 CFR 60, Subpart IIII, for all pollutants, for the same model year and NFPA nameplate power. (40 CFR 60.4202(d))

Fire pump engines for this unit are subject to following emission standards in g/KW-hr (g/HP-hr): (Table 4 to 40 CFR 60, Subpart IIII)

| Equipment Description | Model Year | NMHC+ NO _x | CO | PM |
|------------------------|------------|-----------------------|-----|-------------|
| IE9: 157 HP fire pump | 2013 | 4.0 (3.0) | N/A | 0.30 (0.22) |
| IE10: 183 HP fire pump | 2013 | 4.0 (3.0) | N/A | 0.20 (0.15) |

- iv. In order for the engine to be considered an emergency stationary ICE under this subpart, any operation other than emergency operation, maintenance and testing, emergency demand response, and operation in non-emergency situations for 50 hours per year, as described in 40 CFR 60.4211(f)(1) through (3), is prohibited. If the owner or operator does not operate the engine according to the requirements in 40 CFR 60.4211(f)(1) through (3), the engine will not be considered an emergency engine under this subpart and must meet all requirements for non-emergency engines. (40 CFR 60.4211(f), 40 CFR 63.6640(f))

- 1) There is no time limit on the use of emergency stationary ICE in emergency situations. (40 CFR 60.4211(f)(1), 40 CFR 63.6640(f)(1))
 - 2) The owner or operator may operate the emergency stationary ICE for any combination of the purposes specified in 40 CFR 60.4211(f)(2)(i) through (iii) for a maximum of 100 hours per calendar year. Any operation for non-emergency situations as allowed by 40 CFR 60.4211(f)(3) counts as part of the 100 hours per calendar year allowed by this paragraph. (40 CFR 60.4211(f)(2), 40 CFR 63.6640(f)(2)).
 - (a) Emergency stationary ICE may be operated for maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that federal, state, or local standards require maintenance and testing of emergency ICE beyond 100 hours per calendar year. (40 CFR 60.4211(f)(2)(i), 40 CFR 63.6640(f)(2)(i))
 - 3) Emergency stationary ICE may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing. (40 CFR 60.4211(f)(3), 40 CFR 63.6640(f)(3))
- v. At all times the owner or operator shall operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require the owner or operator to make any further efforts to reduce emissions if levels required by this standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source. (40 CFR 63.6605(b))

b. **SO₂**

The owner or operator shall not combust in the engine a nonroad diesel fuel that contains more than 15 ppm of sulfur. (40 CFR 60.4207(b))
(40 CFR 80.510(b)(1)(i))

c. **HAP**

The equipment listed in this emission unit is subject to 40 CFR 63, Subpart ZZZZ, however, there are no HAP standards.

S2. **Monitoring and Record Keeping** (Regulation 2.16, sections 4.1.9.1 and 4.1.9.2)

The owner or operator shall maintain the required records for a minimum of 5 years and make the records readily available to the District upon request.

a. **Unit Operation**

The owner or operator is not required to submit an initial notification. The owner or operator shall keep records of the operation of the engine in emergency and non-emergency service that are recorded through the non-resettable hour meter. The owner must record the time of operation of the engine and the reason the engine was in operation during that time. (40 CFR 60.4214(b))

b. **SO₂**

The owner or operator shall maintain records of the fuel MSDS sheets and receipts showing dates, amounts of fuel purchased, sulfur content of fuel purchased and supplier's name and address, to show compliance with Specific Condition S1.e.

c. **HAP**

There are no compliance monitoring or record keeping requirements for HAP.

S3. **Reporting** (Regulation 2.16, section 4.1.9.3)

The owner or operator shall submit quarterly compliance reports that include the information in this section.

a. **Unit Operation**

There are no routine compliance reporting requirements for this equipment.

b. **SO₂**

There are no routine compliance reporting requirements for this equipment.

c. **HAP**

There are no routine compliance reporting requirements for this equipment.

Emission Unit IA-OT: Other insignificant activities¹⁴⁴**IA-OT Applicable Regulations:**

| FEDERALLY ENFORCEABLE REGULATIONS | | |
|--|--|----------------------------|
| Regulation | Title | Applicable Sections |
| 7.08 | Standards of Performance for New Affected Facilities | 1, 2, 3, 4, 5, 6 |
| 7.12 | Standard of Performance for New Storage Vessels for Volatile Organic Compounds | 1, 2, 3, 4, 5, 6, 7, 8 |

IA-OT Equipment:

| Emission Point | Description | Applicable Regulation | Control ID | Stack ID |
|-----------------------|--|------------------------------|-------------------|-----------------|
| IE11 | Seventeen (17) lubricating oil tanks, capacity ranged from 400 to 20,000 gallons, each has a vapor pressure less than 1.0 mmHg (< 0.019 psi) | 7.12 | N/A | N/A |
| IE12 | One (1) 1,000 gallon storage tank for #1 fuel oil with annual turnover < 2X the capacity, vapor pressure less than 0.019 psi | 7.12 | N/A | N/A |
| IE13 | One (1) portable kerosene storage tanks with capacity less than 500 gallons, vapor pressure less than 0.019 psi | 7.12 | N/A | N/A |
| IE14 | Two (2) cooling towers for Unit 2 and Unit 3 | 7.08 | N/A | N/A |
| IE15 | One (1) gypsum handling equipment, including two (2) stackers, two (2) overland conveyors, one (1) barge loading, and one (1) truck loading | 7.08 | N/A | N/A |
| IE16 | Two (2) portable gypsum dewatering systems, make SynMat, consist of two (2) belt filters, three (3) belt conveyors, and two (2) radial stacker (A and B) | 7.08 | N/A | N/A |

IA-OT Control Devices:

There are no control devices associated with this equipment.

¹⁴⁴ Per Regulation 5.21, section 2.3, emissions from insignificant activity are de minimis.

IA-OT Specific Conditions

S1. Standards (Regulation 2.16, section 4.1.1)

a. PM

- i. For cooling towers (IE14): The owner or operator shall not allow PM emissions to exceed 93.4 lb/hr for Unit 2 cooling tower and 98.2 lb/hr for Unit 3 cooling tower, based on actual operating hours in a calendar day.¹⁴⁵ (Regulation 7.08, section 3.1.2)
- ii. For gypsum handling equipment (IE15): The owner or operator shall not allow PM emissions from all the gypsum handling equipment combined to exceed 36.2 lb/hr based on actual operating hours in a calendar day.¹⁴⁵ (Regulation 7.08, section 3.1.2)
- iii. For gypsum dewatering system (IE16): The owner or operator shall not allow PM emissions from each gypsum system to exceed 30.1 lb/hr based on actual operating hours in a calendar day.¹⁴⁵ (Regulation 7.08, section 3.1.2)

b. Opacity

For IE14, IE15, and IE16: The owner or operator shall not allow visible emissions to equal or exceed 20% opacity. (Regulation 6.09, section 3.1) (Regulation 7.08, section 3.1.1)

c. VOC

For storage tanks IE11, IE12, and IE13:

The owner or operator shall not store materials with an as stored vapor pressure of greater than or equal to 1.5 psia in the storage vessel(s), unless the storage tank is equipped with a permanent submerged fill pipe. (Regulation 7.12, section 3.3)

S2. Monitoring and Record Keeping (Regulation 2.16, sections 4.1.9.1 and 4.1.9.2)

The owner or operator shall maintain the required records for a minimum of 5 years and make the records readily available to the District upon request.

a. PM/ Opacity

There are no monitoring and record keeping requirements for these pollutants.

¹⁴⁵ It has been demonstrated that the PM emissions from this equipment cannot exceed the lb/hr PM standards uncontrolled.

b. **VOC**

The owner or operator of the storage vessel(s) shall maintain records of the material stored and the vapor pressure in each storage vessel and if the contents of the storage vessel(s) are changed a record shall be made of the new contents, the date of the change, and the new vapor pressure.

S3. **Reporting** (Regulation 2.16, section 4.1.9.3)

PM/ Opacity/ VOC

There are no compliance reporting requirements for this equipment.

Attachment A - 40 CFR 63, Subpart UUUUU (MACT)¹⁴⁶

The owner or operator shall comply with the following requirements unless there are more current promulgated regulations:

Specific Conditions

S1. Standards (Regulation 2.16, section 4.1.1)

HAP

- i. Compliance date: (40 CFR 63.9984)
 - 1) Unit U1, U2, U3, and U4 are existing EGUs according to 40 CFR 63.9982(d), therefore the owner or operator shall comply with 40 CFR 63, Subpart UUUUU no later than April 16, 2016.¹⁴⁷ (40 CFR 63.9984(b))
 - 2) The owner or operator shall meet the notification requirements in 40 CFR63.10030 according to the schedule in 40 CFR63.10030 and in subpart A of this part (i.e., 40 CFR 63). Some of the notifications must be submitted before the owner or operator is required to comply with the emission limits and work practice standards in 40 CFR 63, Subpart UUUUU. (40 CFR 63.9984(c))
 - 3) The owner or operator shall demonstrate that compliance has been achieved, by conducting the required performance tests and other activities, no later than 180 days after the compliance date. (40 CFR 63.9984(f))
- ii. Emission limitations, work practice standards, and operating limits: (40 CFR 63.9991)
 - 1) The owner or operator shall meet the requirements in the following paragraphs. The owner or operator shall meet these requirements at all times. (40 CFR 63.9991(a))
 - (a) The owner or operator shall meet each emission limit and work practice standard in Table 1 through 3 to 40 CFR 63, Subpart UUUUU that applies to the EGU, for each EGU at the source, except as provided under 40 CFR63.10009. (40 CFR 63.9991(a)(1))

¹⁴⁶ 40 CFR 60, Subpart UUUUU is revised according to Federal Register 81 FR 20172, 4/6/2016.

¹⁴⁷ According to 40 CFR 63.9984(b), the compliance date for an existing EGU is April 16, 2015. LG&E requested a year extension and the District has approved the request for the extension per (40 CFR 63.6(i)(4)(i)). Therefore the compliance date for the EGUs under this construction is April 16, 2016.

Table 2 to Subpart UUUUU of Part 63 - Emission Limits for Existing EGUs [As stated in 40 CFR63.9991. The owner or operator shall comply with the following applicable emission limits]¹ (Modified to include requirements for LG&E only)

| If the EGU is in this subcategory | For the following pollutants | The owner or operator shall meet the following emission limits and work practice standards | Using these requirements, as appropriate (e.g., specified sampling volume or test run duration) and limitations with the test methods in Table 5 |
|---|---|--|---|
| 1. Coal-fired unit not low rank virgin coal | a. Filterable particulate matter (PM) ... | 3.0E-2 lb/MMBtu or 3.0E-1 lb/MWh ² ... | Collect a minimum of 1 dscm per run. |
| | OR | OR | |
| | Total non-Hg HAP metals ... | 5.0E-5 lb/MMBtu or 5.0E-1 lb/GWh ... | Collect a minimum of 1 dscm per run. |
| | OR | | |
| | Individual HAP metals | | |
| | Antimony (Sb) ... | 8.0E-1 lb/TBtu or 8.0E-3 lb/GWh ... | |
| | Arsenic (As) ... | 1.1E0 lb/TBtu or 2.0E-2 lb/GWh ... | |
| | Beryllium (Be) ... | 2.0E-1 lb/TBtu or 2.0E-3 lb/GWh ... | |
| | Cadmium (Cd) ... | 3.0E-1 lb/TBtu or 3.0E-3 lb/GWh ... | |
| | Chromium (Cr) ... | 2.8E0 lb/TBtu or 3.0E-2 lb/GWh ... | |
| | Cobalt (Co) ... | 8.0E-1 lb/TBtu or 8.0E-3 lb/GWh ... | |
| | b. Hydrogen chloride (HCl) ... | 2.0E-3 lb/MMBtu or 2.0E-2 lb/MWh ... | For Method 26A, collect a minimum of 0.75 dscm per run; for Method 26, collect a minimum of 120 liters per run. For ASTM D6348-03 ³ or method 320, sample for a minimum of 1 hour. |

| If the EGU is in this subcategory | For the following pollutants | The owner or operator shall meet the following emission limits and work practice standards | Using these requirements, as appropriate (e.g., specified sampling volume or test run duration) and limitations with the test methods in Table 5 |
|-----------------------------------|--|--|--|
| | OR
Sulfur dioxide (SO ₂) ¹⁴⁸
as a surrogate for HCl | 2.0E-1 lb/MMBtu or
1.5E0 lb/MWh ... | SO2 CEMS |
| | c. Mercury (Hg) ... | 1.2E0 lb/TBtu or
1.3E-2 lb/GWh ... | LEE Testing for 30 days with a sampling period consistent with that given in section 5.2.1 of appendix A to this subpart per Method 30B at appendix A-8 to part 60 of this chapter run or Hg CEMS or sorbent trap monitoring system only |

1. For LEE emissions testing for total PM, total HAP metals, individual HAP metals, HCl, and HF, the required minimum sampling volume must be increased nominally by a factor of two.
2. Gross output.
3. Incorporated by reference, see 40 CFR 63.14.

Table 3 to Subpart UUUUU of Part 63 - Work Practice Standards¹⁴⁹ [As stated in 40 CFR 63.9991. The owner or operator shall comply with the following applicable work practice standards] (Modified to include requirements for LG&E only)

| If the EGU is ... | The owner or operator shall meet the following . . . |
|---|---|
| 1. An existing EGU ... | Conduct a tune-up of the EGU burner and combustion controls at least each 36 calendar months, or each 48 calendar months if neural network combustion optimization software is employed, as specified in 40 CFR 63.10021(e). |
| 3. A coal-fired, liquid oil-fired, or solid oil-derived fuel-fired EGU during startup ... | a. You have the option of complying using either of the following work practice standards:
(1) If you choose to comply using paragraph (1) of the definition of “startup” in § 63.10042, you must operate all CMS during startup. Startup means either the first-ever firing of fuel in a boiler for the purpose of producing electricity, or the firing of fuel in a boiler after a shutdown event for any purpose. Startup ends when any of the steam from the boiler is used to generate electricity for sale over the grid or for any other purpose (including on site use). For startup of a unit, you must use clean fuels as defined in § 63.10042 for ignition. Once you convert to firing coal, residual oil, or solid oil-derived fuel, you must engage all of the applicable control technologies except dry scrubber and SCR. You must start your dry scrubber and SCR systems, if present, appropriately to |

¹⁴⁸ In a letter dated 7/21/2014, LG&E elected to comply with the alternate SO₂ limit with use of wet FGD and SO₂ CEMS.

¹⁴⁹ In this table, the work practice standards during startup and shutdown apply only to MATS.

| If the EGU is ... | The owner or operator shall meet the following . . . |
|---|---|
| | <p>comply with relevant standards applicable during normal operation. You must comply with all applicable emissions limits at all times except for periods that meet the applicable definitions of startup and shutdown in this subpart. You must keep records during startup periods. You must provide reports concerning activities and startup periods, as specified in § 63.10011(g) and § 63.10021(h) and (i).</p> <p>(2) If you choose to comply using paragraph (2) of the definition of “startup” in § 63.10042, you must operate all CMS during startup. You must also collect appropriate data, and you must calculate the pollutant emission rate for each hour of startup.</p> <p>For startup of an EGU, you must use one or a combination of the clean fuels defined in § 63.10042 to the maximum extent possible, taking into account considerations such as boiler or control device integrity, throughout the startup period. You must have sufficient clean fuel capacity to engage and operate your PM control device within one hour of adding coal, residual oil, or solid oil-derived fuel to the unit. You must meet the startup period work practice requirements as identified in § 63.10020(e).</p> <p>Once you start firing coal, residual oil, or solid oil-derived fuel, you must vent emissions to the main stack(s). You must comply with the applicable emission limits beginning with the hour after startup ends. You must engage and operate your particulate matter control(s) within 1 hour of first firing of coal, residual oil, or solid oil-derived fuel.</p> <p>You must start all other applicable control devices as expeditiously as possible, considering safety and manufacturer/supplier recommendations, but, in any case, when necessary to comply with other standards made applicable to the EGU by a permit limit or a rule other than this Subpart that require operation of the control devices.</p> <p>b. Relative to the syngas not fired in the combustion turbine of an IGCC EGU during startup, you must either: (1) Flare the syngas, or (2) route the syngas to duct burners, which may need to be installed, and route the flue gas from the duct burners to the heat recovery steam generator.</p> <p>c. If you choose to use just one set of sorbent traps to demonstrate compliance with the applicable Hg emission limit, you must comply with the limit at all times; otherwise, you must comply with the applicable emission limit at all times except for startup and shutdown periods.</p> <p>d. You must collect monitoring data during startup periods, as specified in § 63.10020(a) and (e). You must keep records during startup periods, as provided in § § 63.10032 and 63.10021(h). You must provide reports concerning activities and startup periods, as specified in § § 63.10011(g), 63.10021(i), and 63.10031.</p> |
| <p>4. A coal-fired, liquid oil-fired, or solid oil-derived fuel-fired EGU during shutdown ...</p> | <p>You must operate all CMS during shutdown. You must also collect appropriate data, and you must calculate the pollutant emission rate for each hour of shutdown for those pollutants for which a CMS is used.</p> <p>While firing coal, residual oil, or solid oil-derived fuel during shutdown, you must vent emissions to the main stack(s) and operate all applicable control devices and continue to operate those control devices after the cessation of coal, residual oil, or solid oil-derived fuel being fed into the EGU and for as long as possible thereafter considering operational and</p> |

| If the EGU is ... | The owner or operator shall meet the following . . . |
|-------------------|--|
| | <p>safety concerns. In any case, you must operate your controls when necessary to comply with other standards made applicable to the EGU by a permit limit or a rule other than this Subpart and that require operation of the control devices.</p> <p>If, in addition to the fuel used prior to initiation of shutdown, another fuel must be used to support the shutdown process, that additional fuel must be one or a combination of the clean fuels defined in § 63.10042 and must be used to the maximum extent possible, taking into account considerations such as not compromising boiler or control device integrity.</p> <p>Relative to the syngas not fired in the combustion turbine of an IGCC EGU during shutdown, you must either: (1) Flare the syngas, or (2) route the syngas to duct burners, which may need to be installed, and route the flue gas from the duct burners to the heat recovery steam generator. You must comply with all applicable emission limits at all times except during startup periods and shutdown periods at which time you must meet this work practice. You must collect monitoring data during shutdown periods, as specified in § 63.10020(a). You must keep records during shutdown periods, as provided in § § 63.10032 and 63.10021(h). Any fraction of an hour in which shutdown occurs constitutes a full hour of shutdown. You must provide reports concerning activities and shutdown periods, as specified in § § 63.10011(g), 63.10021(i), and 63.10031.</p> |

- (b) The owner or operator shall meet each operating limit in Table 4 to 40 CFR 63, Subpart UUUUU that applies to the EGU. (40 CFR 63.9991(a)(2))

Table 4 to Subpart UUUUU of Part 63 - Operating Limits for EGUs [As stated in 40 CFR63.9991. The owner or operator shall comply with the applicable operating limits]

| If the owner or operator demonstrates compliance using ... | The owner or operator shall meet these operating limits ... |
|--|---|
| 1. PM CPMS ... | Maintain the 30–boiler operating day rolling average PM CPMS output determined in accordance with the requirements of 40 CFR 63.10023(b)(2) and obtained during the most recent performance test demonstrating compliance with the filterable PM, total non-mercury HAP metals (total HAP metals, for liquid oil fired units), or individual non-mercury HAP metals (individual HAP metals including Hg, for liquid oil-fired units) emissions limitation(s). |

- 2) As provided in 40 CFR63.6(g), the Administrator may approve use of an alternative to the work practice standards in this section. (40 CFR 63.9991(b))

- 3) The owner or operator may use the alternate SO₂ limit in Tables 1 and 2 to 40 CFR 63, Subpart UUUUU only if the EGU: (40 CFR 63.9991(c))
 - (a) Has a system using wet or dry flue gas desulfurization technology and SO₂ continuous emissions monitoring system (CEMS) installed on the EGU; and (40 CFR 63.9991(c)(1))
 - (b) At all times, the owner or operator operates the wet or dry flue gas desulfurization technology and the SO₂ CEMS installed on the unit consistent with 40 CFR 63.10000(b). (40 CFR 63.9991(c)(2))
- iii. General requirements for complying with 40 CFR 63, Subpart UUUUU: (40 CFR 63.10000)
 - 1) The owner or operator shall be in compliance with the emission limits and operating limits in 40 CFR 63, Subpart UUUUU. These limits apply to the owner or operator at all times except during periods of startup and shutdown; however, for coal-fired, liquid oil-fired, or solid oil-derived fuel-fired EGUs, the owner or operator is required to meet the work practice requirements, items 3 and 4, in Table 3 to 40 CFR 63, Subpart UUUUU during periods of startup or shutdown. (40 CFR 63.10000(a))
 - 2) At all times the owner or operator shall operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the EPA Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source. (40 CFR 63.10000(b))
 - 3) For coal-fired units, solid oil-derived fuel-fired units, and IGCC EGUs, initial performance testing is required for all pollutants, to demonstrate compliance with the applicable emission limits. (40 CFR 63.10000(c)(1))
 - (a) For a coal-fired or solid oil-derived fuel-fired EGU or IGCC EGU, the owner or operator may conduct the initial performance testing in accordance with 40

CFR63.10005(h), to determine whether the EGU qualifies as a low emitting EGU (LEE) for one or more applicable emissions limits, except as otherwise provided in paragraphs (c)(1)(i)(A) and (B) of this section: (40 CFR 63.10000(c)(1)(i))

- (i) Except as provided in paragraph (c)(1)(i)(C) of this section, the owner or operator may not pursue the LEE option if the coal-fired, IGCC, or solid oil-derived fuel-fired EGU is equipped with a main stack and bypass stack or bypass duct configuration that allows the effluent to bypass any pollutant control device. (40 CFR 63.10000(c)(1)(i)(A))
- (ii) The owner or operator may not pursue the LEE option for Hg if the coal-fired, solid oil-derived fuel fired EGU or IGCC EGU is new. (40 CFR 63.10000(c)(1)(i)(B))
- (iii) The owner or operator may pursue the LEE option provided that: (40 CFR 63.10000(c)(1)(i)(C))
 - (A) The owner or operator's EGU's control device bypass emissions are measured in the bypass stack or duct or your control device bypass exhaust is routed through the EGU main stack so that emissions are measured during the bypass event; or (40 CFR 63.10000(c)(1)(i)(C)(1))
 - (B) Except for hours during which only clean fuel is combusted, you bypass your EGU control device only during emergency periods for no more than a total of 2 percent of your EGU's annual operating hours; you use clean fuels to the maximum extent possible during an emergency period; and you prepare and submit a report describing the emergency event, its cause, corrective action taken, and estimates of emissions released during the emergency event. The owner or operator shall include these emergency emissions along with performance test results in assessing whether your EGU maintains LEE status. (40 CFR 63.10000(c)(1)(i)(C)(2))

- (b) For a qualifying LEE for Hg emissions limits, the owner or operator shall conduct a 30-day performance test using Method 30B at least once every 12 calendar months to demonstrate continued LEE status. (40 CFR 63.10000(c)(1)(ii))
- (c) For a qualifying LEE of any other applicable emissions limits, the owner or operator shall conduct a performance test at least once every 36 calendar months to demonstrate continued LEE status. (40 CFR 63.10000(c)(1)(iii))
- (d) If the coal-fired or solid oil-derived fuel-fired EGU or IGCC EGU does not qualify as a LEE for total non-mercury HAP metals, individual non-mercury HAP metals, or filterable particulate matter (PM), the owner or operator shall demonstrate compliance through an initial performance test and the owner or operator shall monitor continuous performance through either use of a particulate matter continuous parametric monitoring system (PM CPMS), a PM CEMS, or for an existing EGU compliance performance testing repeated quarterly. (40 CFR 63.10000(c)(1)(iv))
- (e) If the coal-fired or solid oil-derived fuel-fired EGU does not qualify as a LEE for hydrogen chloride (HCl), the owner or operator may demonstrate initial and continuous compliance through use of an HCl CEMS, installed and operated in accordance with Appendix B to 40 CFR 63, Subpart UUUUU. As an alternative to HCl CEMS, the owner or operator may demonstrate initial and continuous compliance by conducting an initial and periodic quarterly performance stack test for HCl. If the EGU uses wet or dry flue gas desulfurization technology (this includes limestone injection into a fluidized bed combustion unit), the owner or operator may apply a second alternative to HCl CEMS by installing and operating a sulfur dioxide (SO₂) CEMS installed and operated in accordance with part 75 of this chapter to demonstrate compliance with the applicable SO₂ emissions limit. (40 CFR 63.10000(c)(1)(v))
- (f) If the coal-fired or solid oil-derived fuel-fired EGU does not qualify as a LEE for Hg, the owner or operator shall demonstrate initial and continuous compliance through use of a Hg CEMS or a sorbent trap monitoring system, in

accordance with appendix A to 40 CFR 63, Subpart UUUUU. (40 CFR 63.10000(c)(1)(vi))

- 4) Site-specific monitoring plan:
 - (a) If the owner or operator demonstrates compliance with any applicable emissions limit through use of a continuous monitoring system (CMS), where a CMS includes a continuous parameter monitoring system (CPMS) as well as a continuous emissions monitoring system (CEMS), the owner or operator shall develop a site-specific monitoring plan and submit this site-specific monitoring plan, if requested, at least 60 days before the initial performance evaluation (where applicable) of the CMS. This requirement also applies to the owner or operator if the owner or operator petitions the Administrator for alternative monitoring parameters under 40 CFR63.8(f). This requirement to develop and submit a site-specific monitoring plan does not apply to affected sources with existing monitoring plans that apply to CEMS and CPMS prepared under Appendix B to part 60 or part 75 of this chapter, and that meet the requirements of 40 CFR63.10010. Using the process described in 40 CFR63.8(f)(4), the owner or operator may request approval of monitoring system quality assurance and quality control procedures alternative to those specified in this paragraph of this section and, if approved, include those in the site-specific monitoring plan. The monitoring plan must address the provisions in paragraphs (d)(2) through (5) of this section. (40 CFR 63.10000(d)(1))
 - (b) The site-specific monitoring plan shall include the information specified in paragraphs (d)(5)(i) through (d)(5)(vii) of this section. Alternatively, the requirements of paragraphs (d)(5)(i) through (d)(5)(vii) are considered to be met for a particular CMS or sorbent trap monitoring system if:
 - (i) The CMS or sorbent trap monitoring system is installed, certified, maintained, operated, and quality-assured either according to part 75 of this chapter, or appendix A or B to 40 CFR 63, Subpart UUUUU; and (40 CFR 63.10000(d)(2)(i))
 - (ii) The recordkeeping and reporting requirements of part 75 of this chapter, or appendix A or B to 40

CFR 63, Subpart UUUUU, that pertain to the CMS are met. (40 CFR 63.10000(d)(2)(ii))

- (c) If requested by the Administrator, the owner or operator shall submit the monitoring plan (or relevant portion of the plan) at least 60 days before the initial performance evaluation of a particular CMS, except where the CMS has already undergone a performance evaluation that meets the requirements of 40 CFR63.10010 (e.g., if the CMS was previously certified under another program). (40 CFR 63.10000(d)(3))
- (d) The owner or operator shall operate and maintain the CMS according to the site-specific monitoring plan. (40 CFR 63.10000(d)(4))
- (e) The provisions of the site-specific monitoring plan must address the following items: (40 CFR 63.10000(d)(5))
 - (i) Installation of the CMS or sorbent trap monitoring system sampling probe or other interface at a measurement location relative to each affected process unit such that the measurement is representative of control of the exhaust emissions (e.g., on or downstream of the last control device). See 40 CFR63.10010(a) for further details. For PM CPMS installations, follow the procedures in 40 CFR63.10010(h). (40 CFR 63.10000(d)(5)(i))
 - (ii) Performance and equipment specifications for the sample interface, the pollutant concentration or parametric signal analyzer, and the data collection and reduction systems. (40 CFR 63.10000(d)(5)(ii))
 - (iii) Schedule for conducting initial and periodic performance evaluations. (40 CFR 63.10000(d)(5)(iii))
 - (iv) Performance evaluation procedures and acceptance criteria (e.g., calibrations), including quality control program in accordance with the general requirements of 40 CFR63.8(d). (40 CFR 63.10000(d)(5)(iv))
 - (v) On-going operation and maintenance procedures, in accordance with the general requirements of 40

CFR63.8(c)(1)(ii), (c)(3), and (c)(4)(ii). (40 CFR 63.10000(d)(5)(v))

- (vi) Conditions that define a CMS that is out of control consistent with 40 CFR63.8(c)(7)(i) and for responding to out of control periods consistent with 40 CFR63.8(c)(7)(ii) and (c)(8). (40 CFR 63.10000(d)(5)(vi))
- (vii) On-going recordkeeping and reporting procedures, in accordance with the general requirements of 40 CFR63.10(c), (e)(1), and (e)(2)(i), or as specifically required under 40 CFR 63, Subpart UUUUU. (40 CFR 63.10000(d)(5)(vii))

5) As part of the demonstration of continuous compliance, the owner or operator shall perform periodic tune-ups of the EGU(s), according to 40 CFR63.10021(e). (40 CFR 63.10000(e))

iv. General Provisions: (40 CFR 63.10040)

Table 9 to 40 CFR 63, Subpart UUUUU shows which parts of the General Provisions in 40 CFR63.1 through 63.15 apply to the owner or operator.

Table 9 to Subpart UUUUU of Part 63 – Applicability of General Provisions to Subpart UUUUU [As stated in 40 CFR63.10040. The owner or operator shall comply with the applicable General Provisions according to the following]

| Citation | Subject | Applies to subpart UUUUU |
|--|--|--|
| 40 CFR 63.1 | Applicability | Yes. |
| 40 CFR 63.2 | Definitions | Yes. Additional terms defined in 40 CFR 63.10042. |
| 40 CFR 63.3 | Units and Abbreviations | Yes. |
| 40 CFR 63.4 | Prohibited Activities and Circumvention | Yes. |
| 40 CFR 63.5 | Preconstruction Review and Notification Requirements | Yes. |
| 40 CFR 63.6(a), (b)(1)-(b)(5), (b)(7), (c), (f)(2)-(3), (g), (h)(2)-(h)(9), (i), (j) | Compliance with Standards and Maintenance Requirements | Yes. |
| 40 CFR 63.6(e)(1)(i) | General Duty to minimize emissions | No. See 40 CFR 63.10000(b) for general duty requirement. |
| 40 CFR 63.6(e)(1)(ii) | Requirement to correct malfunctions ASAP | No. |
| 40 CFR 63.6(e)(3) | SSM Plan requirements | No. |

| Citation | Subject | Applies to subpart UUUUU |
|---|--|--|
| 40 CFR 63.6(f)(1) | SSM exemption | No. |
| 40 CFR 63.6(h)(1) | SSM exemption | No. |
| 40 CFR 63.7(a), (b), (c), (d), (e)(2)-(e)(9), (f), (g), and (h) | Performance Testing Requirements | Yes. |
| 40 CFR 63.7(e)(1) | Performance testing | No. See 40 CFR 63.10007. |
| 40 CFR 63.8 | Monitoring Requirements | Yes. |
| 63.8(c)(1)(i) | General duty to minimize emissions and CMS operation | No. See 40 CFR 63.10000(b) for general duty requirement. |
| 40 CFR 63.8(c)(1)(iii) | Requirement to develop SSM Plan for CMS | No. |
| 40 CFR 63.8(d)(3) | Written procedures for CMS | Yes, except for last sentence, which refers to an SSM plan. SSM plans are not required. |
| 40 CFR 63.9 | Notification requirements | Yes, except (1) for the 60-day notification prior to conducting a performance test in 40 CFR 63.9(e); instead use a 30-day notification period per 40 CFR 63.10030(d). (2) the notification of the CMS performance evaluation in 40 CFR 63.9(g)(1) is limited to RATAs, and (3) the information required per 40 CFR 63.9(h)(2)(i); instead provide the information required per 40 CFR 63.10030(e)(1) through (e)(6) and (e)(8). |
| 40 CFR 63.10(a), (b)(1), (c), (d)(1)-(2), (e), and (f) | Recordkeeping and Reporting Requirements | Yes, except for the requirements to submit written reports under 40 CFR 63.10(e)(3)(v). |
| 40 CFR 63.10(b)(2)(i) | Recordkeeping of occurrence and duration of startups and shutdowns | No. |
| 40 CFR 63.10(b)(2)(ii) | Recordkeeping of malfunctions | No. See 63.10001 for recordkeeping of (1) occurrence and duration and (2) actions taken during malfunction. |
| 40 CFR 63.10(b)(2)(iii) | Maintenance records | Yes. |
| 40 CFR 63.10(b)(2)(iv) | Actions taken to minimize emissions during SSM | No. |

| Citation | Subject | Applies to subpart UUUUU |
|---|--|--|
| 40 CFR 63.10(b)(2)(v) | Actions taken to minimize emissions during SSM | No. |
| 40 CFR 63.10(b)(2)(vi) | Recordkeeping for CMS malfunctions | Yes. |
| 40 CFR 63.10(b)(2)(vii)-(ix) | Other CMS requirements | Yes. |
| 40 CFR 63.10(b)(3), and (d)(3)-(5) | | No. |
| 40 CFR 63.10(c)(7) | Additional recordkeeping requirements for CMS—identifying exceedances and excess emissions | Yes. |
| 40 CFR 63.10(c)(8) | Additional recordkeeping requirements for CMS—identifying exceedances and excess emissions | Yes. |
| 40 CFR 63.10(c)(10) | Recording nature and cause of malfunctions | No. See 63.10032(g) and (h) for malfunctions recordkeeping requirements. |
| 40 CFR 63.10(c)(11) | Recording corrective actions | No. See 63.10032(g) and (h) for malfunctions recordkeeping requirements. |
| 40 CFR 63.10(c)(15) | Use of SSM Plan | No. |
| 40 CFR 63.10(d)(5) | SSM reports | No. See 63.10021(h) and (i) for malfunction reporting requirements. |
| 40 CFR 63.11 | Control Device Requirements | No. |
| 40 CFR 63.12 | State Authority and Delegation | Yes. |
| 40 CFR 63.13-63.16 | Addresses, Incorporation by Reference, Availability of Information, Performance Track Provisions | Yes. |
| 40 CFR 63.1(a)(5), (a)(7)-(a)(9), (b)(2), (c)(3)-(4), (d), 63.6(b)(6), (c)(3), (c)(4), (d), (e)(2), (e)(3)(ii), (h)(3), (h)(5)(iv), 63.8(a)(3), 63.9(b)(3), (h)(4), 63.10(c)(2)-(4), (c)(9) | Reserved | No. |

S2. Monitoring and Record Keeping (Regulation 2.16, sections 4.1.9.1 and 4.1.9.2)

HAP

Testing and Initial Compliance Requirements:

- i. Initial compliance requirements and date to conduct performance tests: (40 CFR 63.10005)
 - 1) General requirements: For each of the affected EGUs, the owner or operator shall demonstrate initial compliance with each applicable emissions limit in Table 1 or 2 of 40 CFR 63, Subpart UUUUU through performance testing. Where two emissions limits are specified for a particular pollutant (e.g., a heat input based limit in lb/MMBtu and an electrical output-based limit in lb/MWh), the owner or operator may demonstrate compliance with either emission limit. For a particular compliance demonstration, the owner or operator may be required to conduct one or more of the following activities in conjunction with performance testing: collection of data, e.g., hourly gross output data (megawatts); establishment of operating limits according to 40 CFR 63.10011 and Tables 4 and 7 to 40 CFR 63, Subpart UUUUU; and CMS performance evaluations. In all cases, the owner or operator shall demonstrate initial compliance no later than the date in paragraph (f) of this section for tune-up work practices for existing EGUs; the date that compliance must be demonstrated, as given in § 63.9984 for other requirements for existing EGUs; and in paragraph (g) of this section for all requirements for new EGUs. (40 CFR 63.10005(a))
 - (a) To demonstrate initial compliance with an applicable emissions limit in Table 1 or 2 to 40 CFR 63, Subpart UUUUU using stack testing, the initial performance test generally consists of three runs at specified process operating conditions using approved methods. If the owner or operator is required to establish operating limits (see paragraph (d) of this section and Table 4 to 40 CFR 63, Subpart UUUUU), the owner or operator shall collect all applicable parametric data during the performance test period. Also, if the owner or operator chooses to comply with an electrical output-based emission limit, the owner or operator shall collect hourly gross output data during the test period. (40 CFR 63.10005(a)(1))
 - (b) To demonstrate initial compliance using either a CMS that measures HAP concentrations directly (i.e., an Hg, HCl, or HF CEMS, or a sorbent trap monitoring system) or an SO₂ or PM CEMS, the initial performance test consists of 30- or, for certain coal-fired existing EGUs that use emissions averaging for Hg, 90- boiler operating days. If the CMS is certified prior to the compliance date (or, if applicable, the

approved extended compliance date), the test shall begin with the first operating day on or after that date, except as otherwise provided in paragraph (b) of this section. If the CMS is not certified prior to the compliance date, the test shall begin with the first operating day after certification testing is successfully completed. In all cases, the initial 30- or 90- operating day averaging period must be completed on or before the date that compliance must be demonstrated (i.e., 180 days after the applicable compliance date). (40 CFR 63.10005(a)(2))

- (i) The CMS performance test must demonstrate compliance with the applicable Hg, HCl, HF, PM, or SO₂ emissions limit in Table 1 or 2 to 40 CFR 63, Subpart UUUUU. (40 CFR 63.10005(a)(2)(i))
- (ii) The owner or operator shall collect hourly data from auxiliary monitoring systems (i.e., stack gas flow rate, CO₂, O₂, or moisture, as applicable) during the performance test period, in order to convert the pollutant concentrations to units of the standard. If you choose to comply with a gross output-based emission limit, you must also collect hourly gross output data during the performance test period. (40 CFR 63.10005(a)(2)(ii))
- (iii) For a group of affected units that are in the same subcategory, are subject to the same emission standards, and share a common stack, if you elect to demonstrate compliance by monitoring emissions at the common stack, startup and shutdown emissions (if any) that occur during the 30-(or, if applicable, 90-) boiler operating day performance test must either be excluded from or included in the compliance demonstration as follows: (40 CFR 63.10005(a)(2)(iii))
 - (A) If one of the units that shares the stack either starts up or shuts down at a time when none of the other units is operating, you must exclude all pollutant emission rates measured during the startup or shutdown period, unless you are using a sorbent trap monitoring system to measure Hg emissions and have elected to include startup and shutdown emissions in the compliance

demonstrations; (40 CFR 63.10005(a)(2)(iii)(A))

- (B) If all units that are currently operating are in the startup or shutdown mode, you must exclude all pollutant emission rates measured during the startup or shutdown period, unless you are using a sorbent trap monitoring system to measure Hg emissions and have elected to include startup and shutdown emissions in the compliance demonstrations; or (40 CFR 63.10005(a)(2)(iii)(B))
 - (C) If any unit starts up or shuts down at a time when another unit is operating, and the other unit is not in the startup or shutdown mode, you must include all pollutant emission rates measured during the startup or shutdown period in the compliance demonstrations. (40 CFR 63.10005(a)(2)(iii)(C))
- 2) Performance testing requirements: If the owner or operator chooses to use performance testing to demonstrate initial compliance with the applicable emissions limits in Tables 1 and 2 to 40 CFR 63, Subpart UUUUU for the EGUs, the owner or operator shall conduct the tests according to 40 CFR 63.10007 and Table 5 to 40 CFR 63, Subpart UUUUU. For the purposes of the initial compliance demonstration, the owner or operator may use test data and results from a performance test conducted prior to the date on which compliance is required as specified in 40 CFR 63.9984, provided that the following conditions are fully met: (40 CFR 63.10005(b))
- (a) For a performance test based on stack test data, the test was conducted no more than 12 calendar months prior to the date on which compliance is required as specified in 40 CFR 63.9984; (40 CFR 63.10005(b)(1))
 - (b) For a performance test based on data from a certified CEMS or sorbent trap monitoring system, the test consists of all valid CMS data recorded in the 30 boiler operating days immediately preceding that date; (40 CFR 63.10005(b)(2))

- (c) The performance test was conducted in accordance with all applicable requirements in 40 CFR 63.10007 and Table 5 to 40 CFR 63, Subpart UUUUU; (40 CFR 63.10005(b)(3))
 - (d) A record of all parameters needed to convert pollutant concentrations to units of the emission standard (e.g., stack flow rate, diluent gas concentrations, hourly gross outputs) is available for the entire performance test period; and (40 CFR 63.10005(b)(4))
 - (e) For each performance test based on stack test data, the owner or operator certify, and keep documentation demonstrating, that the EGU configuration, control devices, and fuel(s) have remained consistent with conditions since the prior performance test was conducted. (40 CFR 63.10005(b)(5))
 - (f) For performance stack test data that are collected prior to the date that compliance must be demonstrated and are used to demonstrate initial compliance with applicable emissions limits, the interval for subsequent stack tests begins on the date that compliance must be demonstrated. (40 CFR 63.10005(b)(6))
- 3) Operating limits: In accordance with 40 CFR 63.10010 and Table 4 to 40 CFR 63, Subpart UUUUU, the owner or operator may be required to establish operating limits using PM CPMS and using site-specific monitoring for certain liquid oil-fired units as part of the initial compliance demonstration. (40 CFR 63.10005(c))
- 4) CMS requirements: If, for a particular emission or operating limit, the owner or operator is required to (or elect to) demonstrate initial compliance using a continuous monitoring system, the CMS must pass a performance evaluation prior to the initial compliance demonstration. If a CMS has been previously certified under another state or federal program and is continuing to meet the on-going quality-assurance (QA) requirements of that program, then, provided that the certification and QA provisions of that program meet the applicable requirements of 40 CFR 63.10010(b) through (h), an additional performance evaluation of the CMS is not required under 40 CFR 63, Subpart UUUUU. (40 CFR 63.10005(d))
- (a) For an affected coal-fired, solid oil-derived fuel-fired, or liquid oil-fired EGU, the owner or operator may demonstrate initial compliance with the applicable SO₂,

HCl, or HF emissions limit in Table 1 or 2 to 40 CFR 63, Subpart UUUUU through use of an SO₂, HCl, or HF CEMS installed and operated in accordance with part 75 to this chapter or Appendix B to 40 CFR 63, Subpart UUUUU, as applicable. The owner or operator may also demonstrate compliance with a filterable PM emission limit in Table 1 or 2 to 40 CFR 63, Subpart UUUUU through use of a PM CEMS installed, certified, and operated in accordance with 40 CFR 63.10010(i). Initial compliance is achieved if the arithmetic average of 30-boiler operating days of quality-assured CEMS data, expressed in units of the standard (see 40 CFR 63.10007(e)), meets the applicable SO₂, PM, HCl, or HF emissions limit in Table 1 or 2 to 40 CFR 63, Subpart UUUUU. Use Equation 19-19 of Method 19 in appendix A-7 to part 60 of this chapter to calculate the 30-boiler operating day average emissions rate. (Note: for this calculation, the term E_{ij} in Equation 19-19 must be in the same units of measure as the applicable HCl or HF emission limit in Table 1 or 2 to 40 CFR 63, Subpart UUUUU). (40 CFR 63.10005(d)(1))

- (b) For affected coal-fired or solid oil-derived fuel-fired EGUs that demonstrate compliance with the applicable emission limits for total nonmercury HAP metals, individual nonmercury HAP metals, total HAP metals, individual HAP metals, or filterable PM listed in Table 1 or 2 to 40 CFR 63, Subpart UUUUU using initial performance testing and continuous monitoring with PM CPMS: (40 CFR 63.10005(d)(2))
- (i) The owner or operator shall demonstrate initial compliance no later than the applicable date specified in 40 CFR 63.9984(f) for existing EGUs and in paragraph (g) of this section for new EGUs. (40 CFR 63.10005(d)(2)(i))
 - (ii) The owner or operator shall demonstrate continuous compliance with the PM CPMS site-specific operating limit that corresponding to the results of the performance test demonstrating compliance with the pollutant with which the owner or operator choose to comply. (40 CFR 63.10005(d)(2)(ii))
 - (iii) The owner or operator shall repeat the performance test annually for the selected pollutant emissions limit and reassess and adjust the site-specific

operating limit in accordance with the results of the performance test. (40 CFR 63.10005(d)(2)(iii))

- (c) For affected EGUs that are either required to or elect to demonstrate initial compliance with the applicable Hg emission limit in Table 1 or 2 of 40 CFR 63, Subpart UUUUU using Hg CEMS or sorbent trap monitoring systems, initial compliance must be demonstrated no later than the applicable date specified in 40 CFR 63.9984(f) for existing EGUs and in paragraph (g) of this section for new EGUs. Initial compliance is achieved if the arithmetic average of 30- (or 90-) boiler operating days of quality-assured CEMS (or sorbent trap monitoring system) data, expressed in units of the standard (see section 6.2 of appendix A to 40 CFR 63, Subpart UUUUU), meets the applicable Hg emission limit in Table 1 or 2 to 40 CFR 63, Subpart UUUUU. (40 CFR 63.10005(d)(3))
- 5) Tune-ups. All affected EGUs are subject to the work practice standards in Table 3 of 40 CFR 63, Subpart UUUUU. As part of the initial compliance demonstration, the owner or operator shall conduct a performance tune-up of the EGU according to 40 CFR 63.10021(e). (40 CFR 63.10005(e))
- 6) For an existing EGU without a neural network, a tune-up, following the procedures in 40 CFR 63.10021(e), must occur within 6 months (180 days) after April 16, 2015. For an existing EGU with a neural network, a tune-up must occur within 18 months (545 days) after April 16, 2016. If a tune-up occurs prior to April 16, 2015, you must keep records showing that the tune-up met all rule requirements. (40 CFR 63.10005(f))
- 7) Low emitting EGUs (40 CFR 63.10005(h))

The provisions of this paragraph (h) apply to pollutants with emissions limits from new EGUs except Hg and to all pollutants with emissions limits from existing EGUs. The owner or operator may pursue this compliance option unless prohibited pursuant to 40 CFR 63.10000(c)(1)(i).

- (a) An EGU may qualify for low emitting EGU (LEE) status for Hg, HCl, HF, filterable PM, total non-Hg HAP metals, or individual non-Hg HAP metals (or total HAP metals or individual HAP metals, for liquid oil-fired EGUs) if the owner or operator collect performance test data that meet

the requirements of this paragraph (h), and if those data demonstrate: (40 CFR 63.10005(h)(1))

- (i) For all pollutants except Hg, performance test emissions results less than 50 percent of the applicable emissions limits in Table 1 or 2 to 40 CFR 63, Subpart UUUUU for all required testing for 3 consecutive years; or (40 CFR 63.10005(h)(1)(i))
- (ii) For Hg emissions from an existing EGU, either:
 - (A) Average emissions less than 10 percent of the applicable Hg emissions limit in Table 2 to 40 CFR 63, Subpart UUUUU (expressed either in units of lb/TBtu or lb/GWh); or (40 CFR 63.10005(h)(1)(ii)(A))
 - (B) Potential Hg mass emissions of 29.0 or fewer pounds per year and compliance with the applicable Hg emission limit in Table 2 to 40 CFR 63, Subpart UUUUU (expressed either in units of lb/TBtu or lb/GWh). (40 CFR 63.10005(h)(1)(ii)(B))
- (b) For all pollutants except Hg, the owner or operator shall conduct all required performance tests described in 40 CFR 63.10007 to demonstrate that a unit qualifies for LEE status. (40 CFR 63.10005(h)(2))
 - (i) When conducting emissions testing to demonstrate LEE status, the owner or operator shall increase the minimum sample volume specified in Table 1 or 2 nominally by a factor of two. (40 CFR 63.10005(h)(2)(i))
 - (ii) Follow the instructions in 40 CFR 63.10007(e) and Table 5 to 40 CFR 63, Subpart UUUUU to convert the test data to the units of the applicable standard. (40 CFR 63.10005(h)(2)(ii))
- (c) For Hg, the owner or operator shall conduct a 30- (or 90-) boiler operating day performance test using Method 30B in appendix A-8 to part 60 of this chapter to determine whether a unit qualifies for LEE status. Locate the Method

30B sampling probe tip at a point within the 10 percent of the duct area centered about the duct's centroid at a location that meets Method 1 in appendix A-1 to part 60 of this chapter and conduct at least three nominally equal length test runs over the 30- (or 90-) boiler operating day test period. The owner or operator may use a pair of sorbent traps to sample the stack gas for a period consistent with that given in section 5.2.1 of appendix A to this subpart. Collect Hg emissions data continuously over the entire test period (except when changing sorbent traps or performing required reference method QA procedures). As an alternative to constant rate sampling per Method 30B, you may use proportional sampling per section 8.2.2 of Performance Specification 12 B in appendix B to part 60 of this chapter. (40 CFR 63.10005(h)(3))

- (i) Depending on whether the owner or operator intend to assess LEE status for Hg in terms of the lb/TBtu or lb/GWh emission limit in Table 2 to 40 CFR 63, Subpart UUUUU or in terms of the annual Hg mass emissions limit of 29.0 lb/year, the owner or operator will have to collect some or all of the following data during the 30-boiler operating day test period (see paragraph (h)(3)(iii) of this section): (40 CFR 63.10005(h)(3)(i))
 - (A) Diluent gas (CO₂ or O₂) data, using either Method 3A in appendix A-3 to part 60 of this chapter or a diluent gas monitor that has been certified according to part 75 of this chapter. (40 CFR 63.10005(h)(3)(i)(A))
 - (B) Stack gas flow rate data, using either Method 2, 2F, or 2G in appendices A-1 and A-2 to part 60 of this chapter, or a flow rate monitor that has been certified according to part 75 of this chapter. (40 CFR 63.10005(h)(3)(i)(B))
 - (C) Stack gas moisture content data, using either Method 4 in appendix A-1 to part 60 of this chapter, or a moisture monitoring system that has been certified according to part 75 of this chapter. Alternatively, an appropriate fuel-specific default moisture value from 40 CFR 75.11(b) of this chapter may be used in

the calculations or the owner or operator may petition the Administrator under 40 CFR 75.66 of this chapter for use of a default moisture value for non-coal-fired units. (40 CFR 63.10005(h)(3)(i)(C))

- (D) Hourly gross output data (megawatts), from facility records. (40 CFR 63.10005(h)(3)(i)(D))
- (ii) If the owner or operator use CEMS to measure CO₂ (or O₂) concentration, and/or flow rate, and/or moisture, record hourly average values of each parameter throughout the 30-boiler operating day test period. If the owner or operator opt to use EPA reference methods rather than CEMS for any parameter, the owner or operator shall perform at least one representative test run on each operating day of the test period, using the applicable reference method. (40 CFR 63.10005(h)(3)(ii))
- (iii) Calculate the average Hg concentration, in $\mu\text{g}/\text{m}^3$ (dry basis), for the 30- (or 90-) boiler operating day performance test, as the arithmetic average of all Method 30B sorbent trap results. Also calculate, as applicable, the average values of CO₂ or O₂ concentration, stack gas flow rate, stack gas moisture content, and gross output for the test period. Then: (40 CFR 63.10005(h)(3)(iii))
- (A) To express the test results in units of lb/TBtu, follow the procedures in 40 CFR 63.10007(e). Use the average Hg concentration and diluent gas values in the calculations. (40 CFR 63.10005(h)(3)(iii)(A))
- (B) To express the test results in units of lb/GWh, use Equations A-3 and A-4 in section 6.2.2 of appendix A to 40 CFR 63, Subpart UUUUU, replacing the hourly values “C_h”, “Q_h”, “B_{ws}” and “(MW)_h” with the average values of these parameters from the performance test. (40 CFR 63.10005(h)(3)(iii)(B))

- (C) To calculate pounds of Hg per year, use one of the following methods: (40 CFR 63.10005(h)(3)(iii)(C))
- Multiply the average lb/TBtu Hg emission rate (determined according to paragraph (h)(3)(iii)(A) of this section) by the maximum potential annual heat input to the unit (TBtu), which is equal to the maximum rated unit heat input (TBtu/hr) times 8,760 hours. If the maximum rated heat input value is expressed in units of MMBtu/hr, multiply it by 10^{-6} to convert it to TBtu/hr; or (40 CFR 63.10005(h)(3)(iii)(C)(1))
 - Multiply the average lb/GWh Hg emission rate (determined according to paragraph (h)(3)(iii)(B) of this section) by the maximum potential annual electricity generation (GWh), which is equal to the maximum rated electrical output of the unit (GW) times 8,760 hours. If the maximum rated electrical output value is expressed in units of MW, multiply it by 10^{-3} to convert it to GW; or (40 CFR 63.10005(h)(3)(iii)(C)(2))
 - If an EGU has a federally-enforceable permit limit on either the annual heat input or the number of annual operating hours, the owner or operator may modify the calculations in paragraph (h)(3)(iii)(C)(1) of this section by replacing the maximum potential annual heat input or 8,760 unit operating hours with the permit limit on annual heat input or operating hours (as applicable). (40 CFR 63.10005(h)(3)(iii)(C)(3))
- (d) For a group of affected units that vent to a common stack, the owner or operator may either assess LEE status for the units individually by performing a separate emission test of each unit in the duct leading from the unit to the common stack, or the owner or operator may perform a single emission test in the common stack. If the owner or operator choose the common stack testing option, the units in the

configuration qualify for LEE status if: (40 CFR 63.10005(h)(4))

- (i) The emission rate measured at the common stack is less than 50 percent (10 percent for Hg) of the applicable emission limit in Table 1 or 2 to 40 CFR 63, Subpart UUUUU; or (40 CFR 63.10005(h)(4)(i))
 - (ii) For Hg from an existing EGU, the applicable Hg emission limit in Table 2 to 40 CFR 63, Subpart UUUUU is met and the potential annual mass emissions, calculated according to paragraph (h)(3)(iii) of this section (with some modifications), are less than or equal to 29.0 pounds times the number of units sharing the common stack. Base your calculations on the combined heat input capacity of all units sharing the stack (i.e., either the combined maximum rated value or, if applicable, a lower combined value restricted by permit conditions or operating hours). (40 CFR 63.10005(h)(4)(ii))
- (e) For an affected unit with a multiple stack or duct configuration in which the exhaust stacks or ducts are downstream of all emission control devices, the owner or operator shall perform a separate emission test in each stack or duct. The unit qualifies for LEE status if: (40 CFR 63.10005(h)(5))
- (i) The emission rate, based on all test runs performed at all of the stacks or ducts, is less than 50 percent (10 percent for Hg) of the applicable emission limit in Table 1 or 2 to 40 CFR 63, Subpart UUUUU; or (40 CFR 63.10005(h)(5)(i))
 - (ii) For Hg from an existing EGU, the applicable Hg emission limit in Table 2 to 40 CFR 63, Subpart UUUUU is met and the potential annual mass emissions, calculated according to paragraph (h)(3)(iii) of this section, are less than or equal to 29.0 pounds. Use the average Hg emission rate from paragraph (h)(5)(i) of this section in your calculations. (40 CFR 63.10005(h)(5)(ii))

- 8) Startup and shutdown for coal-fired or solid oil derived-fired units: The owner or operator shall follow the requirements given in Table 3 to 40 CFR 63, Subpart UUUUU. (40 CFR 63.10005(j))
- 9) The owner or operator shall submit a Notification of Compliance Status summarizing the results of the initial compliance demonstration, as provided in 40 CFR 63.10030. (40 CFR 63.10005(k))
- ii. Date to conduct subsequent performance tests or tune-ups: (40 CFR 63.10006)
 - 1) For liquid oil-fired, solid oil-derived fuel-fired and coal-fired EGUs and IGCC units using PM CPMS to monitor continuous performance with an applicable emission limit as provided for under 40 CFR 63.10000(c), the owner or operator shall conduct all applicable performance tests according to Table 5 to 40 CFR 63, Subpart UUUUU and 40 CFR 63.10007 at least every year. (40 CFR 63.10006(a))

Table 5 to Subpart UUUUU of Part 63 - Performance Testing Requirements [As stated in 40 CFR 63.10007. The owner or operator shall comply with the following requirements for performance testing for existing, new or reconstructed affected sources 1] (Modified to include applicable requirements, see Subpart UUUUU for other options)

| To conduct a performance test for the following pollutant ... | Using ... | The owner or operator shall perform the following activities, as applicable to the input- or output-based emission limit ... | Using ... |
|--|-------------------|---|---|
| 1. Filterable Particulate matter (PM) ... | Emissions Testing | a. Select sampling ports location and the number of traverse points | Method 1 at Appendix A-1 to part 60 of this chapter. |
| | | b. Determine velocity and volumetric flow-rate of the stack gas | Method 2, 2A, 2C, 2F, 2G or 2H at Appendix A-1 or A-2 to part 60 of this chapter. |
| | | c. Determine oxygen and carbon dioxide concentrations of the stack gas | Method 3A or 3B at Appendix A-2 to part 60 of this chapter, or ANSI/ASME PTC 19.10-1981. ³ |
| | | d. Measure the moisture content of the stack gas | Method 4 at Appendix A-3 to part 60 of this chapter. |
| | | e. Measure the filterable PM concentration | Method 5 at Appendix A-3 to part 60 of this chapter. |

| To conduct a performance test for the following pollutant . . . | Using ... | The owner or operator shall perform the following activities, as applicable to the input- or output-based emission limit . . . | Using ... |
|---|-------------------|--|--|
| | | | For positive pressure fabric filters, Method 5D at Appendix A-3 to part 60 of this chapter for filterable PM emissions.

Note that the Method 5 front half temperature shall be 160 ° ± 14 ° C (320 ° ± 25 ° F). |
| | | f. Convert emissions concentration to lb/MMBtu or lb/MWh emissions rates | Method 19 F-factor methodology at Appendix A-7 to part 60 of this chapter, or calculate using mass emissions rate and electrical output data (see 40 CFR 63.10007(e)). |
| | OR
PM CEMS | a. Install, certify, operate, and maintain the PM CEMS | Performance Specification 11 at Appendix B to part 60 of this chapter and Procedure 2 at Appendix F to Part 60 of this chapter. |
| | | b. Install, certify, operate, and maintain the diluent gas, flow rate, and/or moisture monitoring systems | Part 75 of this chapter and 40 CFR 40 CFR 63.10010(a), (b), (c), and (d). |
| | | c. Convert hourly emissions concentrations to 30 boiler operating day rolling average lb/MMBtu or lb/MWh emissions rates | Method 19 F-factor methodology at Appendix A-7 to part 60 of this chapter, or calculate using mass emissions rate and electrical output data (see 40 CFR 63.10007(e)). |
| 2. Total or individual non-Hg HAP metals | Emissions Testing | a. Select sampling ports location and the number of traverse points | Method 1 at Appendix A-1 to part 60 of this chapter. |
| | | b. Determine velocity and volumetric flow-rate of the stack gas | Method 2, 2A, 2C, 2F, 2G or 2H at Appendix A-1 or A-2 to part 60 of this chapter. |
| | | c. Determine oxygen and carbon dioxide concentrations of the stack gas | Method 3A or 3B at Appendix A-2 to part 60 of this chapter, or ANSI/ASME PTC 19.10-1981. ³ |
| | | d. Measure the moisture content of the stack gas | Method 4 at Appendix A-3 to part 60 of this chapter. |

| To conduct a performance test for the following pollutant . . . | Using ... | The owner or operator shall perform the following activities, as applicable to the input- or output-based emission limit . . . | Using ... |
|---|---------------------|--|--|
| | | e. Measure the HAP metals emissions concentrations and determine each individual HAP metals emissions concentration, as well as the total filterable HAP metals emissions concentration and total HAP metals emissions concentration | Method 29 at Appendix A-8 to part 60 of this chapter. For liquid oil-fired units, Hg is included in HAP metals and the owner or operator may use Method 29, Method 30B at Appendix A-8 to part 60 of this chapter; for Method 29, the owner or operator shall report the front half and back half results separately. When using Method 29, report metals matrix spike and recovery levels. |
| | | f. Convert emissions concentrations (individual HAP metals, total filterable HAP metals, and total HAP metals) to lb/MMBtu or lb/MWh emissions rates | Method 19 F-factor methodology at Appendix A-7 to part 60 of this chapter, or calculate using mass emissions rate and electrical output data (see 40 CFR 63.10007(e)). |
| 3. Hydrogen chloride (HCl) and hydrogen fluoride (HF) | Emissions Testing | a. Select sampling ports location and the number of traverse points | Method 1 at Appendix A-1 to part 60 of this chapter. |
| | | b. Determine velocity and volumetric flow-rate of the stack gas | Method 2, 2A, 2C, 2F, 2G or 2H at Appendix A-1 or A-2 to part 60 of this chapter. |
| | | c. Determine oxygen and carbon dioxide concentrations of the stack gas | Method 3A or 3B at Appendix A-2 to part 60 of this chapter, or ANSI/ASME PTC 19.10-1981. ³ |
| | | d. Measure the moisture content of the stack gas | Method 4 at Appendix A-3 to part 60 of this chapter. |
| | | e. Measure the HCl and HF emissions concentrations | Method 26 or Method 26A at Appendix A-8 to part 60 of this chapter or Method 320 at Appendix A to part 63 of this chapter or ASTM 6348-03 ³ with (1) additional quality assurance measures in footnote ⁴ and (2) spiking levels nominally no greater than two times the level corresponding to the applicable emission limit. Method 26A must be used if there are entrained water droplets in the exhaust stream. |
| | | f. Convert emissions concentration to lb/MMBtu or lb/MWh emissions rates | Method 19 F-factor methodology at Appendix A-7 to part 60 of this chapter, or calculate using mass emissions rate and electrical output data (see 40 CFR 63.10007(e)). |
| | OR
HCl and/or HF | a. Install, certify, operate, and maintain the HCl or HF CEMS | Appendix B of 40 CFR 63, Subpart UUUUU. |

| To conduct a performance test for the following pollutant ... | Using ... | The owner or operator shall perform the following activities, as applicable to the input- or output-based emission limit ... | Using ... |
|---|-----------------------|--|--|
| | CEMS | b. Install, certify, operate, and maintain the diluent gas, flow rate, and/or moisture monitoring systems | Part 75 of this chapter and 40 CFR40 CFR 63.10010(a), (b), (c), and (d). |
| | | c. Convert hourly emissions concentrations to 30 boiler operating day rolling average lb/MMBtu or lb/MWh emissions rates | Method 19 F-factor methodology at Appendix A-7 to part 60 of this chapter, or calculate using mass emissions rate and electrical output data (see 40 CFR 63.10007(e)). |
| 4. Mercury (Hg) ... | Emissions Testing ... | a. Select sampling ports location and the number of traverse points | Method 1 at Appendix A-1 to part 60 of this chapter or Method 30B at Appendix A-8 for Method 30B point selection. |
| | | b. Determine velocity and volumetric flow-rate of the stack gas | Method 2, 2A, 2C, 2F, 2G or 2H at Appendix A-1 or A-2 to part 60 of this chapter. |
| | | c. Determine oxygen and carbon dioxide concentrations of the stack gas | Method 3A or 3B at Appendix A-1 to part 60 of this chapter, or ANSI/ASME PTC 19.10-1981. ³ |
| | | d. Measure the moisture content of the stack gas | Method 4 at Appendix A-3 to part 60 of this chapter. |
| | | e. Measure the Hg emission concentration | Method 30B at Appendix A-8 to part 60 of this chapter, ASTM D6784 ³ , or Method 29 at Appendix A-8 to part 60 of this chapter; for Method 29, the owner or operator shall report the front half and back half results separately. |
| | | f. Convert emissions concentration to lb/TBtu or lb/GWh emission rates | Method 19 F-factor methodology at Appendix A-7 to part 60 of this chapter, or calculate using mass emissions rate and electrical output data (see 40 CFR 63.10007(e)). |
| | OR Hg CEMs | a. Install, certify, operate, and maintain the CEMS | Sections 3.2.1 and 5.1 of Appendix A of 40 CFR 63, Subpart UUUUU. |
| | | b. Install, certify, operate, and maintain the diluent gas, flow rate, and/or moisture monitoring systems | Part 75 of this chapter and 40 CFR40 CFR 63.10010(a), (b), (c), and (d). |
| | | c. Convert hourly emissions concentrations to 30 boiler operating day rolling average lb/TBtu or lb/GWh emissions rates | Section 6 of Appendix A to 40 CFR 63, Subpart UUUUU. |

| To conduct a performance test for the following pollutant . . . | Using ... | The owner or operator shall perform the following activities, as applicable to the input- or output-based emission limit . . . | Using ... |
|---|--|--|---|
| | OR
Sorbent trap monitoring systems... | a. Install, certify, operate, and maintain the sorbent trap monitoring system | Sections 3.2.2 and 5.2 of Appendix A to 40 CFR 63, Subpart UUUUU. |
| | | b. Install, operate, and maintain the diluent gas, flow rate, and/or moisture monitoring systems | Part 75 of this chapter and 40 CFR 40 CFR 63.10010(a), (b), (c), and (d). |
| | | c. Convert emissions concentrations to 30 boiler operating day rolling average lb/TBtu or lb/GWh emissions rates | Section 6 of Appendix A to 40 CFR 63, Subpart UUUUU. |
| | OR
LEE testing | a. Select sampling ports location and the number of traverse points | Single point located at the 10% centroidal area of the duct at a port location per Method 1 at Appendix A-1 to part 60 of this chapter or Method 30B at Appendix A-8 for Method 30B point selection. |
| | | b. Determine velocity and volumetric flow-rate of the stack gas | Method 2, 2A, 2C, 2F, 2G, or 2H at Appendix A-1 or A-2 to part 60 of this chapter or flow monitoring system certified per Appendix A of 40 CFR 63, Subpart UUUUU. |
| | | c. Determine oxygen and carbon dioxide concentrations of the stack gas | Method 3A or 3B at Appendix A-1 to part 60 of this chapter, or ANSI/ASME PTC 19.10-1981, ³ or diluent gas monitoring systems certified according to Part 75 of this chapter. |
| | | d. Measure the moisture content of the stack gas | Method 4 at Appendix A-3 to part 60 of this chapter, or moisture monitoring systems certified according to part 75 of this chapter. |
| | | e. Measure the Hg emission concentration | Method 30B at Appendix A-8 to part 60 of this chapter; perform a 30 operating day test, with a maximum of 10 operating days per run (<i>i.e.</i> , per pair of sorbent traps) or sorbent trap monitoring system or Hg CEMS certified per Appendix A of 40 CFR 63, Subpart UUUUU. |
| | | f. Convert emissions concentrations from the LEE test to lb/TBtu or lb/GWh emissions rates | Method 19 F-factor methodology at Appendix A-7 to part 60 of this chapter, or calculate using mass emissions rate and electrical output data (see 40 CFR 63.10007(e)). |

| To conduct a performance test for the following pollutant ... | Using ... | The owner or operator shall perform the following activities, as applicable to the input- or output-based emission limit ... | Using ... |
|---|--------------------------|--|--|
| | | g. Convert average lb/TBtu or lb/GWh Hg emission rate to lb/year, if the owner or operator are attempting to meet the 22.0 lb/year threshold | Potential maximum annual heat input in TBtu or potential maximum electricity generated in GWh. |
| 5. Sulfur dioxide (SO ₂) ... | SO ₂ CEMS ... | a. Install, certify, operate, and maintain the CEMS | Part 75 of this chapter and 40 CFR 40 CFR 63.10010(a) and (f). |
| | | b. Install, operate, and maintain the diluent gas, flow rate, and/or moisture monitoring systems | Part 75 of this chapter and 40 CFR 40 CFR 63.10010(a), (b), (c), and (d). |
| | | c. Convert hourly emissions concentrations to 30 boiler operating day rolling average lb/MMBtu or lb/MWh emissions rates | Method 19 F-factor methodology at Appendix A-7 to part 60 of this chapter, or calculate using mass emissions rate and electrical output data (see 40 CFR 63.10007(e)). |

- 2) For affected units meeting the LEE requirements of 40 CFR 63.10005(h), the owner or operator shall repeat the performance test once every 3 years (once every year for Hg) according to Table 5 and 40 CFR 63.10007. Should subsequent emissions testing results show the unit does not meet the LEE eligibility requirements, LEE status is lost. If this should occur: (40 CFR 63.10006(b))
- (a) For all pollutant emission limits except for Hg, the owner or operator shall conduct emissions testing quarterly, except as otherwise provided in 40 CFR 63.10021(d)(1). (40 CFR 63.10006(b)(1))
- (b) For Hg, the owner or operator shall install, certify, maintain, and operate a Hg CEMS or a sorbent trap monitoring system in accordance with appendix A to 40 CFR 63, Subpart UUUUU, within 6 calendar months of losing LEE eligibility. Until the Hg CEMS or sorbent trap monitoring system is installed, certified, and operating, the owner or operator shall conduct Hg emissions testing quarterly, except as otherwise provided in 40 CFR 63.10021(d)(1). The owner or operator shall have 3 calendar years of testing and CEMS or sorbent trap monitoring system data that satisfy the LEE emissions criteria to reestablish LEE status. (40 CFR 63.10006(b)(2))

- 3) Except where paragraphs (a) or (b) of this section apply, or where the owner or operator install, certify, and operate a PM CEMS to demonstrate compliance with a filterable PM emissions limit, for liquid oil-, solid oil-derived fuel-, coal-fired and IGCC EGUs, the owner or operator shall conduct all applicable periodic emissions tests for filterable PM, individual, or total HAP metals emissions according to Table 5 to 40 CFR 63, Subpart UUUUU, 40 CFR 63.10007, and 40 CFR 63.10000(c), except as otherwise provided in 40 CFR 63.10021(d)(1). (40 CFR 63.10006(c))
- 4) Except where paragraph (b) of this section applies, for solid oil-derived fuel- and coal-fired EGUs that do not use either an HCl CEMS to monitor compliance with the HCl limit or an SO₂ CEMS to monitor compliance with the alternate equivalent SO₂ emission limit, the owner or operator shall conduct all applicable periodic HCl emissions tests according to Table 5 to 40 CFR 63, Subpart UUUUU and 40 CFR 63.10007 at least quarterly, except as otherwise provided in 40 CFR 63.10021(d)(1). (40 CFR 63.10006(d))
- 5) Time between performance tests. (40 CFR 63.10006(f))
 - (a) Notwithstanding the provisions of § 63.10021(d)(1), the requirements listed in paragraphs (g) and (h) of this section, and the requirements of paragraph (f)(3) of this section, you must complete performance tests for your EGU as follows: (40 CFR 63.10006(f)(1))
 - (i) At least 45 calendar days, measured from the test's end date, must separate performance tests conducted every quarter; (40 CFR 63.10006(f)(1)(i))
 - (ii) For annual testing: (40 CFR 63.10006(f)(1)(ii))
 - (A) At least 320 calendar days, measured from the test's end date, must separate performance tests; (40 CFR 63.10006(f)(1)(ii)(A))
 - (B) At least 320 calendar days, measured from the test's end date, must separate annual sorbent trap mercury testing for 30-boiler operating day LEE tests; (40 CFR 63.10006(f)(1)(ii)(B))

- (C) At least 230 calendar days, measured from the test's end date, must separate annual sorbent trap mercury testing for 90-boiler operating day LEE tests; and (40 CFR 63.10006(f)(1)(ii)(C))
- (iii) At least 1,050 calendar days, measured from the test's end date, must separate performance tests conducted every 3 years. (40 CFR 63.10006(f)(1)(iii))
- (b) For units demonstrating compliance through quarterly emission testing, you must conduct a performance test in the 4th quarter of a calendar year if your EGU has skipped performance tests in the first 3 quarters of the calendar year. (40 CFR 63.10006(f)(2))
- (c) If your EGU misses a performance test deadline due to being inoperative and if 168 or more boiler operating hours occur in the next test period, you must complete an additional performance test in that period as follows: (40 CFR 63.10006(f)(3))
 - (i) At least 15 calendar days must separate two performance tests conducted in the same quarter. (40 CFR 63.10006(f)(3)(i))
 - (ii) At least 107 calendar days must separate two performance tests conducted in the same calendar year. (40 CFR 63.10006(f)(3)(ii))
 - (iii) At least 350 calendar days must separate two performance tests conducted in the same 3 year period. (40 CFR 63.10006(f)(3)(iii))
- 6) If the owner or operator elects to demonstrate compliance using emissions averaging under 40 CFR 63.10009, the owner or operator shall continue to conduct performance stack tests at the appropriate frequency given in section (c) through (f) of this section. (40 CFR 63.10006(g))
- 7) If a performance test on a non-mercury LEE shows emissions in excess of 50 percent of the emission limit and if the owner or operator choose to reapply for LEE status, the owner or operator shall conduct performance tests at the appropriate frequency given in section (c) through (e) of this section for that pollutant until all

- performance tests over a consecutive 3-year period show compliance with the LEE criteria. (40 CFR 63.10006(h))
- 8) If the owner or operator is required to meet an applicable tune-up work practice standard, the owner or operator shall conduct a performance tune-up according to 40 CFR 63.10021 (e). (40 CFR 63.10006(i))
 - (a) For EGUs not employing neural network combustion optimization during normal operation, each performance tune-up specified in 40 CFR 63.10021(e) must be no more than 36 calendar months after the previous performance tune-up. (40 CFR 63.10006(i)(1))
 - (b) For EGUs employing neural network combustion optimization systems during normal operation, each performance tune-up specified in 40 CFR 63.10021(e) must be no more than 48 calendar months after the previous performance tune-up. (40 CFR 63.10006(i)(2))
 - 9) The owner or operator shall report the results of performance tests and performance tune-ups within 60 days after the completion of the performance tests and performance tune-ups. The reports for all subsequent performance tests must include all applicable information required in 40 CFR 63.10031. (40 CFR 63.10006(j))
- iii. Methods and other procedures used for the performance tests: (40 CFR 63.10007)
- 1) Except as otherwise provided in this section, the owner or operator shall conduct all required performance tests according to 40 CFR 63.7(d), (e), (f), and (h). The owner or operator shall also develop a site-specific test plan according to the requirements in 40 CFR 63.7(c). (40 CFR 63.10007(a))
 - (a) If the owner or operator uses CEMS (Hg, HCl, SO₂, or other) to determine compliance with a 30–boiler operating day rolling average emission limit, the owner or operator shall collect data for all nonexempt unit operating conditions (see 40 CFR 63.10011(g) and Table 3 to 40 CFR 63, Subpart UUUUU). (40 CFR 63.10007(a)(1))
 - (b) If the owner or operator conducts performance testing with test methods in lieu of continuous monitoring, operate the unit at maximum normal operating load conditions during each periodic (e.g., quarterly) performance test. Maximum

normal operating load will be generally between 90 and 110 percent of design capacity but should be representative of site specific normal operations during each test run. (40 CFR 63.10007(a)(2))

- (c) For establishing operating limits with particulate matter continuous parametric monitoring system (PM CPMS) to demonstrate compliance with a PM or non Hg metals emissions limit, operate the unit at maximum normal operating load conditions during the performance test period. Maximum normal operating load will be generally between 90 and 110 percent of design capacity but should be representative of site specific normal operations during each test run. (40 CFR 63.10007(a)(3))
- 2) The owner or operator shall conduct each performance test (including traditional 3–run stack tests, 30–boiler operating day tests based on CEMS data (or sorbent trap monitoring system data), and 30–boiler operating day Hg emission tests for LEE qualification) according to the requirements in Table 5 to 40 CFR 63, Subpart UUUUU. (40 CFR 63.10007(b))
 - 3) If the owner or operator chooses to comply with the filterable PM emission limit and demonstrate continuous performance using a PM CPMS for an applicable emission limit as provided for in 40 CFR 63.10000(c), The owner or operator shall also establish an operating limit according to 40 CFR 63.10011(b), 63.10023, and Tables 4 and 6 to 40 CFR 63, Subpart UUUUU. Should the owner or operator desire to have operating limits that correspond to loads other than maximum normal operating load, the owner or operator shall conduct testing at those other loads to determine the additional operating limits. (40 CFR 63.10007(c))
 - 4) Except for a 30–boiler operating day performance test based on CEMS (or sorbent trap monitoring system) data, where the concept of test runs does not apply, the owner or operator shall conduct a minimum of three separate test runs for each performance test, as specified in 40 CFR 63.7(e)(3). Each test run must comply with the minimum applicable sampling time or volume specified in Table 1 or 2 to 40 CFR 63, Subpart UUUUU. Sections 63.10005(d) and (h), respectively, provide special instructions for conducting performance tests based on CEMS or sorbent trap monitoring systems, and for conducting emission tests for LEE qualification. (40 CFR 63.10007(d))

- 5) To use the results of performance testing to determine compliance with the applicable emission limits in Table 1 or 2 to 40 CFR 63, Subpart UUUUU, proceed as follows: (40 CFR 63.10007(e))
- (a) Except for a 30–boiler operating day performance test based on CEMS (or sorbent trap monitoring system) data, if measurement results for any pollutant are reported as below the method detection level (e.g., laboratory analytical results for one or more sample components are below the method defined analytical detection level), the owner or operator shall use the method detection level as the measured emissions level for that pollutant in calculating compliance. The measured result for a multiple component analysis (e.g., analytical values for multiple Method 29 fractions both for individual HAP metals and for total HAP metals) may include a combination of method detection level data and analytical data reported above the method detection level. (40 CFR 63.10007(e)(1))
 - (b) If the limits are expressed in lb/MMBtu or lb/TBtu, the owner or operator shall use the F-factor methodology and equations in sections 12.2 and 12.3 of EPA Method 19 in appendix A–7 to part 60 of this chapter. In cases where an appropriate F-factor is not listed in Table 19–2 of Method 19, the owner or operator may use F-factors from Table 1 in section 3.3.5 of appendix F to part 75 of this chapter, or F-factors derived using the procedures in section 3.3.6 of appendix to part 75 of this chapter. Use the following factors to convert the pollutant concentrations measured during the initial performance tests to units of lb/scf, for use in the applicable Method 19 equations: (40 CFR 63.10007(e)(2))
 - (i) Multiply SO₂ ppm by 1.66×10^{-7} ;
 - (ii) Multiply HCl ppm by 9.43×10^{-8} ;
 - (iii) Multiply HF ppm by 5.18×10^{-8} ;
 - (iv) Multiply HAP metals concentrations (mg/dscm) by 6.24×10^{-8} ; and
 - (v) Multiply Hg concentrations (µg/scm) by 6.24×10^{-11} .
 - (c) To determine compliance with emission limits expressed in lb/MWh or lb/GWh, the owner or operator shall first calculate the pollutant mass emission rate during the performance test, in units of lb/h. For Hg, if a CEMS or sorbent trap monitoring system is used, use Equation A–2 or A–3 in appendix A to 40 CFR 63, Subpart UUUUU (as

applicable). In all other cases, use an equation that has the general form of Equation A-2 or A-3, replacing the value of K with 1.66×10^{-7} lb/scf-ppm for SO₂, 9.43×10^{-8} lb/scf-ppm for HCl (if an HCl CEMS is used), 5.18×10^{-8} lb/scf-ppm for HF (if an HF CEMS is used), or 6.24×10^{-8} lb-scm/mg-scf for HAP metals and for HCl and HF (when performance stack testing is used), and defining C_h as the average SO₂, HCl, or HF concentration in ppm, or the average HAP metals concentration in mg/dscm. This calculation requires stack gas volumetric flow rate (scfh) and (in some cases) moisture content data (see 40 CFR 63.10005(h)(3) and 63.10010). Then, if the applicable emission limit is in units of lb/GWh, use Equation A-4 in appendix A to 40 CFR 63, Subpart UUUUU to calculate the pollutant emission rate in lb/GWh. In this calculation, define (M)_h as the calculated pollutant mass emission rate for the performance test (lb/h), and define (MW)_h as the average gross output during the performance test (megawatts). If the applicable emission limit is in lb/MWh rather than lb/GWh, omit the 10³ term from Equation A-4 to determine the pollutant emission rate in lb/MWh. (40 CFR 63.10007(e)(3))

- 6) If the owner or operator elect to (or are required to) use CEMS to continuously monitor Hg, HCl, HF, SO₂, or PM emissions (or, if applicable, sorbent trap monitoring systems to continuously collect Hg emissions data), the following default values are available for use in the emission rate calculations during startup periods or shutdown periods (as defined in § 63.10042). For the purposes of this subpart, these default values are not considered to be substitute data. (40 CFR 63.10007(f))
- (a) **Diluent cap values.** If you use CEMS (or, if applicable, sorbent trap monitoring systems) to comply with a heat input-based emission rate limit, you may use the following diluent cap values for a startup or shutdown hour in which the measured CO₂ concentration is below the cap value or the measured O₂ concentration is above the cap value: (40 CFR 63.10007(f)(1))
- (i) For an IGCC EGU, you may use 1% for CO₂ or 19% for O₂. (40 CFR 63.10007(f)(1)(i))
- (ii) For all other EGUs, you may use 5% for CO₂ or 14% for O₂. (40 CFR 63.10007(f)(1)(ii))

- (b) **Default gross output.** If you use CEMS to continuously monitor Hg, HCl, HF, SO₂, or PM emissions (or, if applicable, sorbent trap monitoring systems to continuously collect Hg emissions data), the following default value is available for use in the emission rate calculations during startup periods or shutdown periods (as defined in § 63.10042). For the purposes of this subpart, this default value is not considered to be substitute data. For a startup or shutdown hour in which there is heat input to an affected EGU but zero gross output, you must calculate the pollutant emission rate using a value equivalent to 5% of the maximum sustainable gross output, expressed in megawatts, as defined in section 6.5.2.1(a)(1) of appendix A to part 75 of this chapter. This default gross output is either the nameplate capacity of the EGU or the highest gross output observed in at least four representative quarters of EGU operation. For a monitored common stack, the default gross output is used only when all EGUs are operating (*i.e.*, combusting fuel) are in startup or shutdown mode, and have zero electrical generation. Under those conditions, a default gross output equal to 5% of the combined maximum sustainable gross output of the EGUs that are operating but have a total of zero gross output must be used to calculate the hourly gross output-based pollutant emissions rate. (40 CFR 63.10007(f)(2))
- iv. Use emissions averaging to comply with 40 CFR 63, Subpart UUUUU. (40 CFR 63.10009)
- 1) General eligibility (40 CFR 63.10009(a))
- (a) The owner or operator may use emissions averaging as described in paragraph (a)(2) of this section as an alternative to meeting the requirements of 40 CFR 63.9991 for filterable PM, SO₂, HF, HCl, non-Hg HAP metals, or Hg on an EGU-specific basis if: (40 CFR 63.10009(a)(1))
- (i) The owner or operator has more than one existing EGU in the same subcategory located at one or more contiguous properties, belonging to a single major industrial grouping, which are under common control of the same person (or persons under common control); and (40 CFR 63.10009(a)(1)(i))
- (ii) You use CEMS (or sorbent trap monitoring systems for determining Hg emissions) or quarterly

emissions testing for demonstrating compliance. (40 CFR 63.10009(a)(1)(ii))

- (b) The owner or operator may demonstrate compliance by emissions averaging among the existing EGUs in the same subcategory, if your averaged Hg emissions for EGUs in the “unit designed for coal $\geq 8,300$ Btu/lb” subcategory are equal to or less than 1.0 lb/TBtu or 1.1E-2 lb/GWh or if your averaged emissions of individual, other pollutants from other subcategories of such EGUs are equal to or less than the applicable emissions limit in Table 2, according to the procedures in this section. Note that except for Hg emissions from EGUs in the “unit designed for coal $\geq 8,300$ Btu/lb” subcategory, the averaging time for emissions averaging for pollutants is 30 days (rolling daily) using data from CEMS or a combination of data from CEMS and manual performance (LEE) testing. The averaging time for emissions averaging for the alternate Hg limit (equal to or less than 1.0 lb/TBtu or 1.1E-2 lb/GWh) from EGUs in the “unit designed for coal $\geq 8,300$ Btu/lb” subcategory is 90-boiler operating days (rolling daily) using data from CEMS, sorbent trap monitoring, or a combination of monitoring data and data from manual performance (LEE) testing. For the purposes of this paragraph, 30- (or 90-day) group boiler operating days is defined as a period during which at least one unit in the emissions averaging group operates on each of the 30 or 90 days. The owner or operator shall calculate the weighted average emissions rate for the group in accordance with the procedures in this paragraph using the data from all units in the group including any that operate fewer than 30 (or 90) days during the preceding 30 (or 90) group boiler days. (40 CFR 63.10009(a)(2))
- (i) The owner or operator may choose to have your EGU emissions averaging group meet either the heat input basis (MMBtu or TBtu, as appropriate for the pollutant) or gross output basis (MWh or GWh, as appropriate for the pollutant). (40 CFR 63.10009(a)(2)(i))
- (ii) The owner or operator may not mix bases within your EGU emissions averaging group. (40 CFR 63.10009(a)(2)(ii))
- (iii) The owner or operator may use emissions averaging

for affected units in different subcategories if the units vent to the atmosphere through a common stack (see paragraph (m) of this section). (40 CFR 63.10009(a)(2)(iii))

2) Equations (40 CFR 63.10009(b))

Use the following equations when performing calculations for your EGU emissions averaging group:

(a) Group eligibility equations (40 CFR 63.10009(b)(1))

$$WAER_m = \frac{[\sum_{j=1}^p Herm_j \times Rmm_j] + \sum_{k=1}^m Ter_k \times Rmt_k}{(\sum_{j=1}^p Rmm_j) + \sum_{k=1}^m Rmt_k} \quad (Eq. 1a)$$

Where:

WAER_m = Maximum Weighted Average Emission Rate in terms of lb/heat input or lb/gross output,

Herm_{i,j} = hourly emission rate (e.g., lb/MMBtu, lb/MWh) from CEMS or sorbent trap monitoring as determined during the initial compliance determination from EGU j,

Rmm_j = Maximum rated heat input, MMBtu/h, or maximum rated gross output, MWh/h, for EGU j,

p = number of EGUs in emissions averaging group that rely on CEMS,

Ter_k = Emissions rate (lb/MMBTU or lb/MWh) as determined during the initial compliance determination of EGU k,

Rmt_k = Maximum rated heat input, MMBtu/h, or maximum rated gross output, MWh/h, for EGU k, and

m = number of EGUs in emissions averaging group that rely on emissions testing.

$$WAER_m = \frac{\sum [(\sum_{j=1}^p Herm_{i,j}) \times Smm_j \times Cfm_j] + \sum_{k=1}^m Ter_k \times Smt_k \times Cft_k}{\sum [\sum_{j=1}^p Smm_j \times Cfm_j] + \sum_{k=1}^m Smt_k \times Cft_k} \quad (Eq. 1b)$$

Where:

Variables with the similar names share the descriptions for Equation 1a of this section,

Smm_j = maximum steam generation, lb_{steam}/h or lb/gross output, for EGU j,

Cfm_j = conversion factor, calculated from the most recent compliance test results, in terms units of heat output or gross output per pound of steam generated (MMBtu/lb_{steam} or MWh/lb_{steam}) from EGU j,

Smt_k = maximum steam generation, lb_{steam}/h or $lb/gross$ output, for EGU k , and

Cfm_k = conversion factor, calculated from the most recent compliance test results, in terms units of heat output or gross output per pound of steam generated ($MMBtu/lb_{steam}$ or MWh/lb_{steam}) from EGU k .

- (b) Weighted 30-boiler operating day rolling average emissions rate equations for pollutants other than Hg. Use equation 2a or 2b to calculate the 30 day rolling average emissions daily. (40 CFR 63.10009(b)(2))

$$WAER = \frac{\sum_{i=1}^p [\sum_{i=1}^n (Her_i \times Rm_i)]_p + \sum_{i=1}^m (Ter_i \times Rt_i)}{\sum_{i=1}^p [\sum_{i=1}^n (Rm_i)]_p + \sum_{i=1}^m Rt_i} \quad (Eq. 2a)$$

Where:

Her_i = hourly emission rate (e.g., $lb/MMBtu$, lb/MWh) from unit i 's CEMS for the preceding 30-group boiler operating days,

Rm_i = hourly heat input or gross output from unit i for the preceding 30-group boiler operating days,

p = number of EGUs in emissions averaging group that rely on CEMS or sorbent trap monitoring,

n = number of hourly rates collected over 30-group boiler operating days,

Ter_i = Emissions rate from most recent emissions test of unit i in terms of $lb/heat$ input or $lb/gross$ output,

Rt_i = Total heat input or gross output of unit i for the preceding 30-boiler operating days, and

m = number of EGUs in emissions averaging group that rely on emissions testing.

$$WAER = \frac{\sum_{i=1}^p [\sum_{i=1}^n (Her_i \times Sm_i \times Cfm_i)]_p + \sum_{i=1}^m (Ter_i \times St_i \times Cft_i)}{\sum_{i=1}^p [\sum_{i=1}^n (Sm_i \times Cfm_i)]_p + \sum_{i=1}^m St_i \times Cft_i} \quad (Eq. 2b)$$

Where:

variables with similar names share the descriptions for Equation 2a,

Sm_i = steam generation in units of pounds from unit i that uses CEMS for the preceding 30-group boiler operating days,

Cfm_i = conversion factor, calculated from the most recent compliance test results, in units of heat input per pound of steam generated or gross output per pound of steam generated, from unit i that uses CEMS from the preceding 30 group boiler operating days,

St_i = steam generation in units of pounds from unit i that uses emissions testing, and

Cft_i = conversion factor, calculated from the most recent compliance test results, in units of heat input per pound of steam generated or gross output per pound of steam generated, from unit i that uses emissions testing.

(c) Weighted 90-boiler operating day rolling average emissions rate equations for Hg emissions from EGUs in the “coal-fired unit not low rank virgin coal” subcategory. Use equation 3a or 3b to calculate the 90-day rolling average emissions daily. (40 CFR 63.10009(b)(3))

$$WAER = \frac{\sum_{i=1}^p [\sum_{j=1}^n (Her_i \times Rm_i)]_p + \sum_{i=1}^m (Ter_i \times Rt_i)}{\sum_{i=1}^p [\sum_{j=1}^n (Rm_i)]_p + \sum_{i=1}^m Rt_i} \quad (Eq. 3a)$$

Where:

Her_i = hourly emission rate from unit i 's CEMS or Hg sorbent trap monitoring system for the preceding 90-group boiler operating days,

Rm_i = hourly heat input or gross output from unit i for the preceding 90-group boiler operating days,

p = number of EGUs in emissions averaging group that rely on CEMS,

n = number of hourly rates collected over the 90-group boiler operating days,

Ter_i = Emissions rate from most recent emissions test of unit i in terms of lb/heat input or lb/gross output,

Rt_i = Total heat input or gross output of unit i for the preceding 90-boiler operating days, and

m = number of EGUs in emissions averaging group that rely on emissions testing.

$$WAER = \frac{\sum_{i=1}^p [\sum_{j=1}^n (Her_i \times Sm_i \times Cfm_i)]_p + \sum_{i=1}^m (Ter_i \times St_i \times Cft_i)}{\sum_{i=1}^p [\sum_{j=1}^n (Sm_i \times Cfm_i)]_p + \sum_{i=1}^m St_i \times Cft_i} \quad (Eq. 3b)$$

Where:

variables with similar names share the descriptions for Equation 2a,

Sm_i = steam generation in units of pounds from unit i that uses CEMS or a Hg sorbent trap monitoring for the preceding 90-group boiler operating days,

Cfm_i = conversion factor, calculated from the most recent compliance test results, in units of heat input per pound of steam generated or gross output per pound of steam

generated, from unit i that uses CEMS or sorbent trap monitoring from the preceding 90-group boiler operating days,

St_i = steam generation in units of pounds from unit i that uses emissions testing, and

Cft_i = conversion factor, calculated from the most recent emissions test results, in units of heat input per pound of steam generated or gross output per pound of steam generated, from unit i that uses emissions testing.

3) Separate stack requirements (40 CFR 63.10009(c))

For a group of two or more existing EGUs in the same subcategory that each vent to a separate stack, the owner or operator may average filterable PM, SO_2 , HF, HCl, non-Hg HAP metals, or Hg emissions to demonstrate compliance with the limits in Table 2 to 40 CFR 63, Subpart UUUUU if the owner or operator satisfy the requirements in paragraphs (d) through (j) of this section.

4) For each existing EGU in the averaging group: (40 CFR 63.10009(d))

(a) The emissions rate achieved during the initial performance test for the HAP being averaged must not exceed the emissions level that was being achieved 180 days after April 16, 2015, or the date on which emissions testing done to support your emissions averaging plan is complete (if the Administrator does not require submission and approval of your emissions averaging plan), or the date that the owner or operator begin emissions averaging, whichever is earlier; or (40 CFR 63.10009(d)(1))

(b) The control technology employed during the initial performance test must not be less than the design efficiency of the emissions control technology employed 180 days after April 16, 2015 or the date that the owner or operator begin emissions averaging, whichever is earlier. (40 CFR 63.10009(d)(2))

5) The weighted-average emissions rate from the existing EGUs participating in the emissions averaging option must be in compliance with the limits in Table 2 to 40 CFR 63, Subpart UUUUU at all times following the date that you begin emissions averaging.. (40 CFR 63.10009(e))

- 6) Emissions averaging group eligibility demonstration. The owner or operator shall demonstrate the ability for the EGUs included in the emissions averaging group to demonstrate initial compliance according to paragraph (f)(1) or (2) of this section using the maximum rated heat input or gross output over a 30- (or 90-) boiler operating day period of each EGU and the results of the initial performance tests. For this demonstration and prior to preparing your emissions averaging plan, the owner or operator shall conduct required emissions monitoring for 30- (or 90-) days of boiler operation and any required manual performance testing to calculate maximum weighted average emissions rate in accordance with this section. If, before the start of your initial compliance demonstration, the Administrator becomes aware that you intend to use emissions averaging for that demonstration, or if your initial Notification of Compliance Status (NOCS) indicates that you intend to implement emissions averaging at a future date, the Administrator may require you to submit your proposed emissions averaging plan and supporting data for approval. If the Administrator requires approval of your plan, the owner or operator may not begin using emissions averaging until the Administrator approves your plan. (40 CFR 63.10009(f))
- (a) The owner or operator shall use Equation 1a in paragraph (b) of this section to demonstrate that the maximum weighted average emissions rates of filterable PM, HF, SO₂, HCl, non-Hg HAP metals, or Hg emissions from the existing units participating in the emissions averaging option do not exceed the emissions limits in Table 2 to 40 CFR 63, Subpart UUUUU. (40 CFR 63.10009(f)(1))
- (b) If the owner or operators are not capable of monitoring heat input or gross output, and the EGU generates steam for purposes other than generating electricity, the owner or operator may use Equation 1b of this section as an alternative to using Equation 1a of this section to demonstrate that the maximum weighted average emissions rates of filterable PM, HF, SO₂, HCl, non-Hg HAP metals, or Hg emissions from the existing units participating in the emissions averaging group do not exceed the emission limits in Table 2 to 40 CFR 63, Subpart UUUUU. (40 CFR 63.10009(f)(2))
- 7) The owner or operator shall determine the weighted average emissions rate in units of the applicable emissions limit on a 30 group boiler operating day rolling average basis (or, if applicable, on a 90 group boiler operating day rolling average basis for Hg)

basis according to paragraphs (g)(1) through (2) of this section. The first averaging period ends on the 30th (or, if applicable, 90th for the alternate Hg emission limit) group boiler operating day after the date that you begin emissions averaging. (40 CFR 63.10009(g))

(a) The owner or operator shall use Equation 2a or 3a of paragraph (b) of this section to calculate the weighted average emissions rate using the actual heat input or gross output for each existing unit participating in the emissions averaging option. (40 CFR 63.10009(g)(1))

(b) If the owner or operators are not capable of monitoring heat input or gross output, the owner or operator may use Equation 2b or 3b of paragraph (b) of this section as an alternative to using Equation 2a of paragraph (b) of this section to calculate the average weighted emission rate using the actual steam generation from the units participating in the emissions averaging option. (40 CFR 63.10009(g)(2))

8) 63.10009(h) CEMS (or sorbent trap monitoring) use. (40 CFR 63.10009(h))

If an EGU in your emissions averaging group uses CEMS (or a sorbent trap monitor for Hg emissions) to demonstrate compliance, the owner or operator shall use those data to determine the 30 (or 90) group boiler operating day rolling average emissions rate.

9) Emissions testing (40 CFR 63.10009(i))

If the owner or operator use manual emissions testing to demonstrate compliance for one or more EGUs in your emissions averaging group, the owner or operator shall use the results from the most recent performance test to determine the 30 (or 90) day rolling average. The owner or operator may use CEMS or sorbent trap data in combination with data from the most recent manual performance test in calculating the 30 (or 90) group boiler operating day rolling average emissions rate.

10) Emissions averaging plan. (40 CFR 63.10009(j))

The owner or operator shall develop an implementation plan for emissions averaging according to the following procedures and requirements in paragraphs (j)(1) and (2) of this section.

- (a) The owner or operator shall include the information contained in paragraphs (j)(1)(i) through (v) of this section in your implementation plan for all the emissions units included in an emissions averaging: (40 CFR 63.10009(j)(1))
- (i) The identification of all existing EGUs in the emissions averaging group, including for each either the applicable HAP emission level or the control technology installed as of 180 days after February 16, 2015, or the date on which the owner or operator complete the emissions measurements used to support your emissions averaging plan (if the Administrator does not require submission and approval of your emissions averaging plan), or the date that the owner or operator begin emissions averaging, whichever is earlier; and the date on which the owner or operator are requesting emissions averaging to commence; (40 CFR 63.10009(j)(1)(i))
 - (ii) The process weighting parameter (heat input, gross output, or steam generated) that will be monitored for each averaging group; (40 CFR 63.10009(j)(1)(ii))
 - (iii) The specific control technology or pollution prevention measure to be used for each emission EGU in the averaging group and the date of its installation or application. If the pollution prevention measure reduces or eliminates emissions from multiple EGUs, the owner or operator shall identify each EGU; (40 CFR 63.10009(j)(1)(iii))
 - (iv) The means of measurement (*e.g.*, CEMS, sorbent trap monitoring, manual performance test) of filterable PM, SO₂, HF, HCl, individual or total non-Hg HAP metals, or Hg emissions in accordance with the requirements in 40 CFR 63.10007 and to be used in the emissions averaging calculations; and (40 CFR 63.10009(j)(1)(iv))
 - (v) A demonstration that emissions averaging can produce compliance with each of the applicable emission limit(s) in accordance with paragraph (b)(1) of this section. (40 CFR 63.10009(j)(1)(v))

- (b) If, as described in paragraph (f) of this section, the Administrator requests the owner or operator to submit the averaging plan for review and approval, the owner or operator shall receive approval before initiating emissions averaging. (40 CFR 63.10009(j)(2))
 - (i) The Administrator shall use following criteria in reviewing and approving or disapproving the plan: (40 CFR 63.10009(j)(2)(i))
 - (A) Whether the content of the plan includes all of the information specified in paragraph (j)(1) of this section; and (40 CFR 63.10009(j)(2)(i)(A))
 - (B) Whether the plan presents information sufficient to determine that compliance will be achieved and maintained. (40 CFR 63.10009(j)(2)(i)(B))
 - (ii) The Administrator shall not approve an emissions averaging implementation plan containing any of the following provisions: (40 CFR 63.10009(j)(2)(ii))
 - (A) Any averaging between emissions of different pollutants or between units located at different facilities; or (40 CFR 63.10009(j)(2)(ii)(A))
 - (B) The inclusion of any emissions unit other than an existing unit in the same subcategory. (40 CFR 63.10009(j)(2)(ii)(B))
- 11) Common stack requirements (40 CFR 63.10009(k))

For a group of two or more existing affected units, each of which vents through a single common stack, the owner or operator may average emissions to demonstrate compliance with the limits in Table 2 to 40 CFR 63, Subpart UUUUU if the owner or operator satisfy the requirements in paragraph (l) or (m) of this section.
- 12) For a group of two or more existing units in the same subcategory and which vent through a common emissions control system to a common stack that does not receive emissions from units in other subcategories or categories, the owner or operator may treat such

averaging group as a single existing unit for purposes of 40 CFR 63, Subpart UUUUU and comply with the requirements of 40 CFR 63, Subpart UUUUU as if the group were a single unit. (40 CFR 63.10009(l))

- 13) For all other groups of units subject to paragraph (k) of this section, the owner or operator may elect to conduct manual performance tests according to procedures specified in 40 CFR 63.10007 in the common stack. If emissions from affected units included in the emissions averaging and from other units not included in the emissions averaging (*e.g.*, in a different subcategory) or other nonaffected units all vent to the common stack, the owner or operator shall shut down the units not included in the emissions averaging and the nonaffected units or vent their emissions to a different stack during the performance test. Alternatively, the owner or operator may conduct a performance test of the combined emissions in the common stack with all units operating and show that the combined emissions meet the most stringent emissions limit. The owner or operator may also use a CEMS or sorbent trap monitoring to apply this latter alternative to demonstrate that the combined emissions comply with the most stringent emissions limit on a continuous basis. (40 CFR 63.10009(m))
 - 14) Combination requirements. The common stack of a group of two or more existing EGUs in the same subcategory subject to paragraph (k) of this section may be treated as a single stack for purposes of paragraph (c) of this section and included in an emissions averaging group subject to paragraph (c) of this section. (40 CFR 63.10009(n))
- v. Monitoring, installation, operation, and maintenance requirements: (40 CFR 63.10010)
- 1) Flue gases from the affected units under 40 CFR 63, Subpart UUUUU exhaust to the atmosphere through a variety of different configurations, including but not limited to individual stacks, a common stack configuration or a main stack plus a bypass stack. For the CEMS, PM CPMS, and sorbent trap monitoring systems used to provide data under 40 CFR 63, Subpart UUUUU, the continuous monitoring system installation requirements for these exhaust configurations are as follows: (40 CFR 63.10010(a))
 - (a) Single unit-single stack configurations. For an affected unit that exhausts to the atmosphere through a single, dedicated stack, the owner or operator shall either install the required

CEMS, PM CPMS, and sorbent trap monitoring systems in the stack or at a location in the ductwork downstream of all emissions control devices, where the pollutant and diluents concentrations are representative of the emissions that exit to the atmosphere. (40 CFR 63.10010(a)(1))

- (b) Unit utilizing common stack with other affected unit(s). When an affected unit utilizes a common stack with one or more other affected units, but no non-affected units, the owner or operator shall either: (40 CFR 63.10010(a)(2))
 - (i) Install the required CEMS, PM CPMS, and sorbent trap monitoring systems in the duct leading to the common stack from each unit; or (40 CFR 63.10010(a)(2)(i))
 - (ii) Install the required CEMS, PM CPMS, and sorbent trap monitoring systems in the common stack. (40 CFR 63.10010(a)(2)(ii))
- (c) Unit(s) utilizing common stack with non-affected unit(s). (40 CFR 63.10010(a)(3))
 - (i) When one or more affected units shares a common stack with one or more non-affected units, the owner or operator shall either: (40 CFR 63.10010(a)(3)(i))
 - (A) Install the required CEMS, PM CPMS, and sorbent trap monitoring systems in the ducts leading to the common stack from each affected unit; or (40CFR63.10010(a)(3)(i)(A))
 - (B) Install the required CEMS, PM CPMS, and sorbent trap monitoring systems described in this section in the common stack and attribute all of the emissions measured at the common stack to the affected unit(s). (40CFR63.10010(a)(3)(i)(B))
 - (ii) If the owner or operator chooses the common stack monitoring option: (40 CFR 63.10010(a)(3)(ii))
 - (A) For each hour in which valid data are obtained for all parameters, the owner or operator shall calculate the pollutant

- emission rate and
(40CFR63.10010(a)(3)(ii)(A))
- (B) The owner or operator shall assign the calculated pollutant emission rate to each unit that shares the common stack. (40CFR63.10010(a)(3)(ii)(B))
- (d) Unit with a main stack and a bypass stack that exhausts to the atmosphere independent of the main stack. If the exhaust configuration of an affected unit consists of a main stack and a bypass stack, the owner or operator shall install CEMS on both the main stack and the bypass stack. If it is not feasible to certify and quality-assure the data from a monitoring system on the bypass stack, the owner or operator shall: (40 CFR 63.10010(a)(4))
- (i) Route the exhaust from the bypass through the main stack and its monitoring so that bypass emissions are measured; or (40 CFR 63.10010(a)(4)(i))
- (ii) Install a CEMS only on the main stack and count hours that the bypass stack is in use as hours of deviation from the monitoring requirements. (40 CFR 63.10010(a)(4)(ii))
- (e) Unit with a common control device with multiple stack or duct configuration. If the flue gases from an affected unit, which is configured such that emissions are controlled with a common control device or series of control devices, are discharged to the atmosphere through more than one stack or are fed into a single stack through two or more ducts, the owner or operator may: (40 CFR 63.10010(a)(5))
- (i) Install required CEMS, PM CPMS, and sorbent trap monitoring systems in each of the multiple stacks; (40 CFR 63.10010(a)(5)(i))
- (ii) Install required CEMS, PM CPMS, and sorbent trap monitoring systems in each of the ducts that feed into the stack; (40 CFR 63.10010(a)(5)(ii))
- (iii) Install required CEMS, PM CPMS, and sorbent trap monitoring systems in one of the multiple stacks or ducts and monitor the flows and dilution rates in all multiple stacks or ducts in order to determine total exhaust gas flow rate and pollutant mass emissions

rate in accordance with the applicable limit; or (40 CFR 63.10010(a)(5)(iii))

- (iv) In the case of multiple ducts feeding into a single stack, install CEMS, PM CPMS, and sorbent trap monitoring systems in the single stack as described in paragraph (a)(1) of this section. (40 CFR 63.10010(a)(5)(iv))
- (f) Unit with multiple parallel control devices with multiple stacks: If the flue gases from an affected unit, which is configured such that emissions are controlled with multiple parallel control devices or multiple series of control devices are discharged to the atmosphere through more than one stack, the owner or operator shall install the required CEMS, PM CPMS, and sorbent trap monitoring systems described in each of the multiple stacks. The owner or operator shall calculate hourly flow-weighted average pollutant emission rates for the unit as follows: (40 CFR 63.10010(a)(6))
 - (i) Calculate the pollutant emission rate at each stack or duct for each hour in which valid data are obtained for all parameters; (40 CFR 63.10010(a)(6)(i))
 - (ii) Multiply each calculated hourly pollutant emission rate at each stack or duct by the corresponding hourly stack gas flow rate at that stack or duct; (40 CFR 63.10010(a)(6)(ii))
 - (iii) Sum the products determined under paragraph (a)(6)(ii) of this section; and (40 CFR 63.10010(a)(6)(iii))
 - (iv) Divide the result obtained in paragraph (a)(6)(iii) of this section by the total hourly stack gas flow rate for the unit, summed across all of the stacks or ducts. (40 CFR 63.10010(a)(6)(iv))
- 2) If the owner or operator use an oxygen (O₂) or carbon dioxide (CO₂) CEMS to convert measured pollutant concentrations to the units of the applicable emissions limit, the O₂ or CO₂ concentrations shall be monitored at a location that represents emissions to the atmosphere, *i.e.*, at the outlet of the EGU, downstream of all emission control devices. The owner or operator

shall install, certify, maintain, and operate the CEMS according to part 75 of this chapter. Use only quality-assured O₂ or CO₂ data in the emissions calculations; do not use part 75 substitute data values. (40 CFR 63.10010(b))

- 3) If the owner or operator is required to use a stack gas flow rate monitor, either for routine operation of a sorbent trap monitoring system or to convert pollutant concentrations to units of an electrical output-based emission standard in Table 1 or 2 to 40 CFR 63, Subpart UUUUU, the owner or operator shall install, certify, operate, and maintain the monitoring system and conduct on-going quality-assurance testing of the system according to part 75 of this chapter. Use only unadjusted, quality-assured flow rate data in the emissions calculations. Do not apply bias adjustment factors to the flow rate data and do not use substitute flow rate data in the calculations. (40 CFR 63.10010(c))
- 4) If the owner or operator is required to make corrections for stack gas moisture content when converting pollutant concentrations to the units of an emission standard in Table 1 of 2 to 40 CFR 63, Subpart UUUUU, the owner or operator shall install, certify, operate, and maintain a moisture monitoring system in accordance with part 75 of this chapter. Alternatively, for coal-fired units, the owner or operator may use appropriate fuel-specific default moisture values from 40 CFR 75.11(b) of this chapter to estimate the moisture content of the stack gas or the owner or operator may petition the Administrator under 40 CFR 75.66 of this chapter for use of a default moisture value for non-coal-fired units. If the owner or operator install and operate a moisture monitoring system, do not use substitute moisture data in the emissions calculations. (40 CFR 63.10010(d))
- 5) If the owner or operator use an HCl and/or HF CEMS, the owner or operator shall install, certify, operate, maintain, and quality-assure the data from the monitoring system in accordance with appendix B to 40 CFR 63, Subpart UUUUU. Calculate and record a 30-boiler operating day rolling average HCl or HF emission rate in the units of the standard, updated after each new boiler operating day. Each 30-boiler operating day rolling average emission rate is the average of all the valid hourly HCl or HF emission rates in the preceding 30 boiler operating days (see section 9.4 of appendix B to 40 CFR 63, Subpart UUUUU). (40 CFR 63.10010(e))
- 6) If the owner or operator uses an SO₂ CEMS:

- (a) If the owner or operator uses an SO₂ CEMS, the owner or operator shall install the monitor at the outlet of the EGU, downstream of all emission control devices, and the owner or operator shall certify, operate, and maintain the CEMS according to part 75 of this chapter. (40 CFR 63.10010(f)(1))
 - (b) For on-going QA, the SO₂ CEMS must meet the applicable daily, quarterly, and semiannual or annual requirements in sections 2.1 through 2.3 of appendix B to part 75 of this chapter, with the following addition: The owner or operator shall perform the linearity checks required in section 2.2 of appendix B to part 75 of this chapter if the SO₂ CEMS has a span value of 30 ppm or less. (40 CFR 63.10010(f)(2))
 - (c) Calculate and record a 30-boiler operating day rolling average SO₂ emission rate in the units of the standard, updated after each new boiler operating day. Each 30-boiler operating day rolling average emission rate is the average of all of the valid hourly SO₂ emission rates in the 30 boiler operating day period. (40 CFR 63.10010(f)(3))
 - (d) Use only unadjusted, quality-assured SO₂ concentration values in the emissions calculations; do not apply bias adjustment factors to the part 75 SO₂ data and do not use part 75 substitute data values. For startup or shutdown hours (as defined in 40 CFR 63.10042) the default gross output and the diluent cap are available for use in the hourly SO₂ emission rate calculations, as described in 40 CFR 63.10007(f). Use a flag to identify each startup or shutdown hour and report a special code if the diluent cap or default gross output is used to calculate the SO₂ emission rate for any of these hours. (40 CFR 63.10010(f)(4))
- 7) If the owner or operator use a Hg CEMS or a sorbent trap monitoring system, the owner or operator shall install, certify, operate, maintain and quality-assure the data from the monitoring system in accordance with appendix A to 40 CFR 63, Subpart UUUUU. The owner or operator shall calculate and record a 30- (or, if alternate emissions averaging is used, 90-) boiler operating day rolling average Hg emission rate, in units of the standard, updated after each new boiler operating day. Each 30- (or, if alternate emissions averaging is used, 90-) boiler operating day rolling average emission rate, calculated according to section 6.2 of appendix A to the subpart, is the average of all of the valid

hourly Hg emission rates in the preceding 30- (or, if alternate emissions averaging is used, a 90-) boiler operating days. Section 7.1.4.3 of appendix A to 40 CFR 63, Subpart UUUUU explains how to reduce sorbent trap monitoring system data to an hourly basis. (40 CFR 63.10010(g))

- 8) If the owner or operator uses a PM CPMS to demonstrate continuous compliance with an operating limit, the owner or operator shall install, calibrate, maintain, and operate the PM CPMS and record the output of the system as specified in paragraphs (h)(1) through (5) of this section. (40 CFR 63.10010(h))
- (a) Install, calibrate, operate, and maintain the PM CPMS according to the procedures in the approved site-specific monitoring plan developed in accordance with 40 CFR 63.10000(d), and meet the requirements in paragraphs (h)(1)(i) through (iii) of this section. (40 CFR 63.10010(h)(1))
- (i) The operating principle of the PM CPMS must be based on in-stack or extractive light scatter, light scintillation, beta attenuation, or mass accumulation detection of the exhaust gas or representative sample. The reportable measurement output from the PM CPMS may be expressed as milliamps, stack concentration, or other raw data signal. (40 CFR 63.10010(h)(1)(i))
- (ii) The PM CPMS must have a cycle time (i.e., period required to complete sampling, measurement, and reporting for each measurement) no longer than 60 minutes. (40 CFR 63.10010(h)(1)(ii))
- (iii) The PM CPMS must be capable, at a minimum, of detecting and responding to particulate matter concentrations of 0.5 mg/acm. (40 CFR 63.10010(h)(1)(iii))
- (b) For a new unit, complete the initial PM CPMS performance evaluation no later than October 13, 2012 or 180 days after the date of initial startup, whichever is later. For an existing unit, complete the initial performance evaluation no later than October 13, 2015. (40 CFR 63.10010(h)(2))

- (c) Collect PM CPMS hourly average output data for all boiler operating hours except as indicated in paragraph (h)(5) of this section. Express the PM CPMS output as milliamps, PM concentration, or other raw data signal value. (40 CFR 63.10010(h)(3))
- (d) Calculate the arithmetic 30–boiler operating day rolling average of all of the hourly average PM CPMS output collected during all nonexempt boiler operating hours data (*e.g.*, milliamps, PM concentration, raw data signal). (40 CFR 63.10010(h)(4))
- (e) The owner or operator shall collect data using the PM CPMS at all times the process unit is operating and at the intervals specified in paragraph (h)(1)(ii) of this section, except for periods of monitoring system malfunctions, repairs associated with monitoring system malfunctions, required monitoring system quality assurance or quality control activities (including, as applicable, calibration checks and required zero and span adjustments), and any scheduled maintenance as defined in the site-specific monitoring plan. (40 CFR 63.10010(h)(5))
- (f) The owner or operator shall use all the data collected during all boiler operating hours in assessing the compliance with the operating limit except: (40 CFR 63.10010(h)(6))
 - (i) Any data collected during monitoring system malfunctions, repairs associated with monitoring system malfunctions, or required monitoring system quality assurance or quality control activities that temporarily interrupt the measurement of output data from the PM CPMS. The owner or operator shall report any monitoring system malfunctions or out of control periods in your annual deviation reports. The owner or operator shall report any monitoring system quality assurance or quality control activities per the requirements of 40 CFR 63.10031(b); (40 CFR 63.10010(h)(6)(i))
 - (ii) Any data collected during periods when the monitoring system is out of control as specified in the site-specific monitoring plan, repairs associated with periods when the monitoring system is out of control, or required monitoring system quality

assurance or quality control activities conducted during out-of-control periods. are not used in calculations (report emissions The owner or operator shall report any such periods in your annual deviation report; (40 CFR 63.10010(h)(6)(ii))

- (iii) Any data recorded during periods of startup or shutdown. (40 CFR 63.10010(h)(6)(iii))
 - (g) The owner or operator shall record and make available upon request results of PM CPMS system performance audits, as well as the dates and duration of periods from when the PM CPMS is out of control until completion of the corrective actions necessary to return the PM CPMS to operation consistent with the site-specific monitoring plan. (40 CFR 63.10010(h)(7))
- 9) If the owner or operator chooses to comply with the PM filterable emissions limit in lieu of metal HAP limits, the owner or operator may choose to install, certify, operate, and maintain a PM CEMS and record the output of the PM CEMS as specified in paragraphs (i)(1) through (5) of this section. The compliance limit will be expressed as a 30–boiler operating day rolling average of the numerical emissions limit value applicable for the unit in tables 1 or 2 to 40 CFR 63, Subpart UUUUU. (40 CFR 63.10010(i))
- (a) Install and certify the PM CEMS according to the procedures and requirements in Performance Specification 11—Specifications and Test Procedures for Particulate Matter Continuous Emission Monitoring Systems at Stationary Sources in Appendix B to part 60 of this chapter, using Method 5 at Appendix A–3 to part 60 of this chapter and ensuring that the front half filter temperature shall be $160^{\circ} \pm 14^{\circ}\text{C}$ ($320^{\circ} \pm 25^{\circ}\text{F}$). The reportable measurement output from the PM CEMS must be expressed in units of the applicable emissions limit (*e.g.*, lb/MMBtu, lb/MWh). (40 CFR 63.10010(i)(1))
 - (b) Operate and maintain the PM CEMS according to the procedures and requirements in Procedure 2—Quality Assurance Requirements for Particulate Matter Continuous Emission Monitoring Systems at Stationary Sources in Appendix F to part 60 of this chapter. (40 CFR 63.10010(i)(2))

- (i) The owner or operator shall conduct the relative response audit (RRA) for the PM CEMS at least once annually. (40 CFR 63.10010(i)(2)(i))
- (ii) The owner or operator shall conduct the relative correlation audit (RCA) for the PM CEMS at least once every 3 years. (40 CFR 63.10010(i)(2)(ii))
- (c) Collect PM CEMS hourly average output data for all boiler operating hours except as indicated in paragraph (i) of this section. (40 CFR 63.10010(i)(3))
- (d) Calculate the arithmetic 30–boiler operating day rolling average of all of the hourly average PM CEMS output data collected during all nonexempt boiler operating hours. (40 CFR 63.10010(i)(4))
- (e) The owner or operator shall collect data using the PM CEMS at all times the process unit is operating and at the intervals specified in paragraph (a) of this section, except for periods of monitoring system malfunctions, repairs associated with monitoring system malfunctions, and required monitoring system quality assurance or quality control activities. (40 CFR 63.10010(i)(5))
 - (i) The owner or operator shall use all the data collected during all boiler operating hours in assessing the compliance with the operating limit except: (40 CFR 63.10010(i)(5)(i))
 - (A) Any data collected during monitoring system malfunctions, repairs associated with monitoring system malfunctions, or required monitoring system quality assurance or quality control activities that temporarily interrupt the measurement of emissions (e.g., calibrations, certain audits). The owner or operator shall report any monitoring system malfunctions or out of control periods in your annual deviation reports. The owner or operator shall report any monitoring system quality assurance or quality control activities per the requirements of 40 CFR 63.10031(b); (40 CFR 63.10010(i)(5)(i)(A))

- (B) Any data collected during periods when the monitoring system is out of control as specified in the site-specific monitoring plan, repairs associated with periods when the monitoring system is out of control, or required monitoring system quality assurance or quality control activities conducted during out of control periods. The owner or operator shall report any such periods in your annual deviation report; (40 CFR 63.10010(i)(5)(i)(B))
 - (C) Any data recorded during periods of startup or shutdown. (40 CFR 63.10010(i)(5)(i)(C))
 - (ii) The owner or operator shall record and make available upon request results of PM CEMS system performance audits, dates and duration of periods when the PM CEMS is out of control to completion of the corrective actions necessary to return the PM CEMS to operation consistent with the site-specific monitoring plan. (40 CFR 63.10010(i)(5)(ii))
- vi. Demonstrate initial compliance with the emissions limits and work practice standards: (40 CFR 63.10011)
 - 1) The owner or operator shall demonstrate initial compliance with each emissions limit that applies to the owner or operator by conducting performance testing. (40 CFR 63.10011(a))
 - 2) If the owner or operator is subject to an operating limit in Table 4 to 40 CFR 63, Subpart UUUUU, the owner or operator demonstrates initial compliance with HAP metals or filterable PM emission limit(s) through performance stack tests and the owner or operator elect to use a PM CPMS to demonstrate continuous performance, or if, for a liquid oil-fired unit, and the owner or operator uses quarterly stack testing for HCl and HF plus site-specific parameter monitoring to demonstrate continuous performance, the owner or operator shall also establish a site-specific operating limit, in accordance with 40 CFR 63.10007, and Table 6 to 40 CFR 63, Subpart UUUUU. The owner or operator may use only the parametric data recorded during successful performance tests (i.e., tests that demonstrate compliance with the applicable emissions limits) to establish an operating limit. (40 CFR 63.10011(b))

Table 6 to Subpart UUUUU of Part 63 - 63—Establishing PM CPMS Operating Limits
 [As stated in 40 CFR63.10007. The owner or operator shall comply with the following requirements for establishing operating limits]

| If the owner or operator has an applicable emission limit for ... | And the owner or operator choose to establish PM CPMS operating limits,the owner or operator shall... | And ... | Using ... | According to the following procedures... |
|---|---|--|--|---|
| Filterable particulate matter (PM), total non-mercury HAP metals, individual non-mercury HAP metals, total HAP metals, individual HAP metals for an EGU ... | Install, certify, maintain, and operate a PM CPMS for monitoring emissions discharged to the atmosphere according to 40 CFR63.10010(h)(1) ... | Establish a site-specific operating limit in units of PM CPMS output signal (e.g., milliamps, mg/acm, or other raw signal) ... | Data from the PM CPMS and the PM or HAP metals performance tests ... | 1. Collect PM CPMS output data during the entire period of the performance tests. 2. Record the average hourly PM CPMS output for each test run in the performance test. 3. Determine the PM CPMS operating limit in accordance with the requirements of § 63.10023(b)(2) from data obtained during the performance test demonstrating compliance with the filterable PM or HAP metals emissions limitations. |

3) Use CEMS:

- (a) If the owner or operator uses CEMS or sorbent trap monitoring systems to measure a HAP (e.g., Hg or HCl) directly, the initial performance test, shall consist of a 30-boiler operating day (or, for certain coal-fired, existing EGUs that use emissions averaging for Hg, a 90-boiler operating day) rolling average emissions rate obtained with a certified CEMS or sorbent trap system, expressed in units of the standard. If the monitoring system is certified prior to the applicable compliance date, the initial averaging period shall either begin with: The first boiler operating day on or after the compliance date; or 30 (or, if applicable, 90) boiler operating days prior to that date, as described in 40 CFR 63.10005(b). In all cases, the initial 30- or 90-boiler

operating day averaging period must be completed on or before the date that compliance must be demonstrated, in accordance with § 63.9984(f). Initial compliance is demonstrated if the results of the performance test meet the applicable emission limit in Table 1 or 2 to this subpart. (40 CFR 63.10011(c)(1))

- (b) For a unit that uses a CEMS to measure SO₂ or PM emissions for initial compliance, the initial performance test shall consist of a 30-boiler operating day average emission rate obtained with certified CEMS, expressed in units of the standard. If the monitoring system is certified prior to the applicable compliance date, the initial averaging period shall either begin with: The first boiler operating day on or after the compliance date; or 30 boiler operating days prior to that date, as described in § 63.10005(b). In all cases, the initial 30-boiler operating day averaging period must be completed on or before the date that compliance must be demonstrated, in accordance with § 63.9984(f). Initial compliance is demonstrated if the results of the performance test meet the applicable SO₂ or PM emission limit in Table 1 or 2 to this subpart. (40 CFR 63.10011(c)(2))
- 4) For candidate LEE units, use the results of the performance testing described in 40 CFR 63.10005(h) to determine initial compliance with the applicable emission limit(s) in Table 1 or 2 to 40 CFR 63, Subpart UUUUU and to determine whether the unit qualifies for LEE status. (40 CFR 63.10011(d))
- 5) The owner or operator shall submit a Notification of Compliance Status containing the results of the initial compliance demonstration, in accordance with 40 CFR 63.10030(e). (40 CFR 63.10011(e))
- 6) Cleanest fuel:
 - (a) The owner or operator shall determine the fuel whose combustion produces the least uncontrolled emissions, i.e., the cleanest fuel, either natural gas or distillate oil, that is available on site or accessible nearby for use during periods of startup or shutdown. (40 CFR 63.10011(f)(1))
 - (b) The owner or operator's cleanest fuel, either natural gas or distillate oil, for use during periods of startup or shutdown

determination may take safety considerations into account. (40 CFR 63.10011(f)(2))

- 7) The owner or operator shall follow the startup or shutdown requirements as established in Table 3 to this subpart for each coal-fired, liquid oil-fired, and solid oil-derived fuel-fired EGU. (40 CFR 63.10011(g))
- (a) The owner or operator may use the diluent cap and default gross output values, as described in § 63.10007(f), during startup periods or shutdown periods. (40 CFR 63.10011(g)(1))
 - (b) The owner or operator shall operate all CMS, collect data, calculate pollutant emission rates, and record data during startup periods or shutdown periods. (40 CFR 63.10011(g)(2))
 - (c) The owner or operator shall report the information as required in 40 CFR 63.10031. (40 CFR 63.10011(g)(3))
 - (d) If you choose to use paragraph (2) of the definition of “startup” in 40 CFR 63.10042 and you find that you are unable to safely engage and operate your particulate matter (PM) control(s) within 1 hour of first firing of coal, residual oil, or solid oil-derived fuel, you may choose to rely on paragraph (1) of definition of “startup” in 40 CFR 63.10042 or you may submit a request to use an alternative non-opacity emissions standard, as described below. (40 CFR 63.10011(g)(4))
 - (i) As mentioned in 40 CFR 63.6(g)(1), your request will be published in the *Federal Register* for notice and comment rulemaking. Until promulgation in the *Federal Register* of the final alternative non-opacity emission standard, you shall comply with paragraph (1) of the definition of “startup” in 40 CFR 63.10042. You shall not implement the alternative non-opacity emissions standard until promulgation in the *Federal Register* of the final alternative non-opacity emission standard. (40 CFR 63.10011(g)(4)(i))
 - (ii) The owner or operator’s request need not address the items contained in 40 CFR 63.6(g)(2). (40 CFR

63.10011(g)(4)(ii)

- (iii) The owner or operator's request shall provide evidence of a documented manufacturer-identified safety issue. (40 CFR 63.10011(g)(4)(iii))
- (iv) The owner or operator's request shall provide information to document that the PM control device is adequately designed and sized to meet the PM emission limit applicable to the EGU. (40 CFR 63.10011(g)(4)(iv))
- (v) In addition, your request shall contain documentation that: (40 CFR 63.10011(g)(4)(v))
 - (A) The owner or operator's EGU is using clean fuels to the maximum extent possible, taking into account considerations such as not compromising boiler or control device integrity, to bring your EGU and PM control device up to the temperature necessary to alleviate or prevent the identified safety issues prior to the combustion of primary fuel in your EGU; (40 CFR 63.10011(g)(4)(v)(A))
 - (B) The owner or operator has followed explicitly your EGU manufacturer's procedures to alleviate or prevent the identified safety issue; and (40 CFR 63.10011(g)(4)(v)(B))
 - (C) The owner or operator has identified with specificity the details of your EGU manufacturer's statement of concern. (40 CFR 63.10011(g)(4)(v)(C))
- (vi) The owner or operator's request shall specify the other work practice standards you will take to limit HAP emissions during startup periods and shutdown periods to ensure a control level consistent with the work practice standards of the final rule. (40 CFR 63.10011(g)(4)(vi))
- (vii) The owner or operator shall comply with all other work practice requirements, including but not

limited to data collection, recordkeeping, and reporting requirements. (40 CFR 63.10011(g)(4)(vii))

Continuous Compliance Requirements:

- vii. Monitor and collect data to demonstrate continuous compliance: (40 CFR 63.10020)
- 1) The owner or operator shall monitor and collect data according to this section and the site-specific monitoring plan required by 40 CFR 63.10000(d). (40 CFR 63.10020(a))
 - 2) The owner or operator shall operate the monitoring system and collect data at all required intervals at all times that the affected EGU is operating, except for periods of monitoring system malfunctions or out-of-control periods (see 40 CFR 63.8(c)(7) of this part), and required monitoring system quality assurance or quality control activities, including, as applicable, calibration checks and required zero and span adjustments. The owner or operator is required to affect monitoring system repairs in response to monitoring system malfunctions and to return the monitoring system to operation as expeditiously as practicable. (40 CFR 63.10020(b))
 - 3) The owner or operator may not use data recorded during EGU startup or shutdown or monitoring system malfunctions or monitoring system out-of-control periods, repairs associated with monitoring system malfunctions or monitoring system out-of-control periods, or required monitoring system quality assurance or control activities in calculations used to report emissions or operating levels. The owner or operator shall use all the data collected during all other periods in assessing the operation of the control device and associated control system. (40 CFR 63.10020(c))
 - 4) Except for periods of monitoring system malfunctions or monitoring system out-of-control periods, repairs associated with monitoring system malfunctions or monitoring system out-of-control periods, and required monitoring system quality assurance or quality control activities including, as applicable, calibration checks and required zero and span adjustments), failure to collect required data is a deviation from the monitoring requirements. (40 CFR 63.10020(d))

- 5) Additional requirements during startup periods or shutdown periods if you choose to rely on paragraph (2) of the definition of “startup” in 40 CFR 63.10042 for your EGU. (40 CFR 63.10020(e))
- (a) During each period of startup, you must record for each EGU: (40 CFR 63.10020(e)(1))
 - (i) The date and time that clean fuels being combusted for the purpose of startup begins; (40 CFR 63.10020(e)(1)(i))
 - (ii) The quantity and heat input of clean fuel for each hour of startup; (40 CFR 63.10020(e)(1)(ii))
 - (iii) The gross output for each hour of startup; (40 CFR 63.10020(e)(1)(iii))
 - (iv) The date and time that non-clean fuel combustion begins; and (40 CFR 63.10020(e)(1)(iv))
 - (v) The date and time that clean fuels being combusted for the purpose of startup ends. (40 CFR 63.10020(e)(1)(v))
 - (b) During each period of shutdown, you must record for each EGU: (40 CFR 63.10020(e)(2))
 - (i) The date and time that clean fuels being combusted for the purpose of shutdown begins; (40 CFR 63.10020(e)(2)(i))
 - (ii) The quantity and heat input of clean fuel for each hour of shutdown; (40 CFR 63.10020(e)(2)(ii))
 - (iii) The gross output for each hour of shutdown; (40 CFR 63.10020(e)(2)(iii))
 - (iv) The date and time that non-clean fuel combustion ends; and (40 CFR 63.10020(e)(2)(iv))
 - (v) The date and time that clean fuels being combusted for the purpose of shutdown ends. (40 CFR 63.10020(e)(2)(v))

- (c) For PM or non-mercury HAP metals work practice monitoring during startup periods, you must monitor and collect data according to this section and the site-specific monitoring plan required by 40 CFR 63.10010(l). (40 CFR 63.10020(e)(3))
- (i) Except for an EGU that uses PM CEMS or PM CPMS to demonstrate compliance with the PM emissions limit, or that has LEE status for filterable PM or total non-Hg HAP metals for non-liquid oil-fired EGUs (or HAP metals emissions for liquid oil-fired EGUs), or individual non-mercury metals CEMS, you must: (40 CFR 63.10020(e)(3)(i))
- (A) Record temperature and combustion air flow or calculated flow as determined from combustion equations of post-combustion (exhaust) gas, as well as amperage of forced draft fan(s), upstream of the filterable PM control devices during each hour of startup. (40 CFR 63.10020(e)(3)(i)(A))
- (B) Record temperature and flow of exhaust gas, as well as amperage of any induced draft fan(s), downstream of the filterable PM control devices during each hour of startup. (40 CFR 63.10020(e)(3)(i)(B))
- (C) For an EGU with an electrostatic precipitator, record the number of fields in service, as well as each field's secondary voltage and secondary current during each hour of startup. (40 CFR 63.10020(e)(3)(i)(C))
- (D) For an EGU with a fabric filter, record the number of compartments in service, as well as the differential pressure across the baghouse during each hour of startup. (40 CFR 63.10020(e)(3)(i)(D))
- (E) For an EGU with a wet scrubber needed for filterable PM control, record the scrubber liquid to flue gas ratio and the pressure drop across the scrubber during each hour of

startup. (40 CFR 63.10020(e)(3)(i)(E))

- viii. Demonstrate continuous compliance with the emission limitations, operating limits, and work practice standards: (40 CFR 63.10021)
- 1) The owner or operator shall demonstrate continuous compliance with each emissions limit, operating limit, and work practice standard in Tables 1 through 4 to 40 CFR 63, Subpart UUUUU that applies to the owner or operator, according to the monitoring specified in Tables 6 and 7 to 40 CFR 63, Subpart UUUUU and paragraphs (b) through (g) of this section. (40 CFR 63.10021(a))
 - 2) Except as otherwise provided in 40 CFR 63.10020(c), if the owner or operator uses a CEMS to measure SO₂, PM, HCl, HF, or Hg emissions, or using a sorbent trap monitoring system to measure Hg emissions, the owner or operator shall demonstrate continuous compliance by using all quality-assured hourly data recorded by the CEMS (or sorbent trap monitoring system) and the other required monitoring systems (e.g., flow rate, CO₂, O₂, or moisture systems) to calculate the arithmetic average emissions rate in units of the standard on a continuous 30-boiler operating day (or, if alternate emissions averaging is used for Hg, 90-boiler operating day) rolling average basis, updated at the end of each new boiler operating day. Use Equation 8 to determine the 30- (or, if applicable, 90-) boiler operating day rolling average. (40 CFR 63.10021(b))

$$\text{Boiler operating day average} = \frac{\sum_{i=1}^n \text{Her}_i}{n} \text{ (Eq.8)}$$

Where:

Her_i is the hourly emissions rate for hour i and n is the number of hourly emissions rate values collected over 30- (or, if applicable, 90-) boiler operating days.

- 3) If the owner or operator uses a PM CPMS data to measure compliance with an operating limit in Table 4 to 40 CFR 63, Subpart UUUUU, the owner or operator shall record the PM CPMS output data for all periods when the process is operating and the PM CPMS is not out-of-control. The owner or operator shall demonstrate continuous compliance by using all quality-assured hourly average data collected by the PM CPMS for all operating hours to calculate the arithmetic average operating parameter in units of the operating limit (e.g., milliamps, PM concentration, raw data signal) on a 30 operating day rolling average basis, updated at the end of each new boiler operating day. Use Equation 9 to determine the 30 boiler operating day average. (40 CFR 63.10021(c))

$$30 \text{ boiler operating day average} = \frac{\sum_{i=1}^n \text{Hpvi}}{n} \quad (\text{Eq.9})$$

Where:

Hpvi is the hourly parameter value for hour i and n is the number of valid hourly parameter values collected over 30 boiler operating days.

- 4) If the owner or operator use quarterly performance testing to demonstrate compliance with one or more applicable emissions limits in Table 1 or 2 to 40 CFR 63, Subpart UUUUU, the owner or operator (40 CFR 63.10021(d))
 - (a) May skip performance testing in those quarters during which less than 168 boiler operating hours occur, except that a performance test must be conducted at least once every calendar year. (40 CFR 63.10021(d)(1))
 - (b) Must conduct the performance test as defined in Table 5 to 40 CFR 63, Subpart UUUUU and calculate the results of the testing in units of the applicable emissions standard; and (40 CFR 63.10021(d)(2))
 - (c) Must conduct site-specific monitoring using CMS to demonstrate compliance with the site-specific monitoring requirements in Table 7 to this subpart pertaining to HCl and HF emissions from a liquid oil-fired unit to ensure compliance with the HCl and HF emission limits in Tables 1 and 2 to 40 CFR 63, Subpart UUUUU, in accordance with the requirements of 40 CFR 63.10000(c)(2)(iii). The monitoring must meet the general operating requirements provided in 40 CFR 63.10020(a). (40 CFR 63.10021(d)(3))
- 5) Conduct periodic performance tune-ups of the EGU(s), as specified in paragraphs (e)(1) through (9) of this section. For the first tune-up, the owner or operator may perform the burner inspection any time prior to the tune-up or the owner or operator may delay the first burner inspection until the next scheduled EGU outage provided the owner or operator meet the requirements of 40 CFR 63.10005. Subsequently, the owner or operator shall perform an inspection of the burner at least once every 36 calendar months unless the EGU employs neural network combustion optimization during normal operations in which case the owner or operator shall perform an inspection of the burner and combustion controls at least once every 48 calendar months. If your EGU is offline when a deadline to perform the tune-up passes, you shall perform the

tune-up work practice requirements within 30 days after the re-start of the affected unit. (40 CFR 63.10021(e))

- (a) As applicable, inspect the burner and combustion controls, and clean or replace any components of the burner or combustion controls as necessary upon initiation of the work practice program and at least once every required inspection period. Repair of a burner or combustion control component requiring special order parts may be scheduled as follows: (40 CFR 63.10021(e)(1))
 - (i) Burner or combustion control component parts needing replacement that affect the ability to optimize NO_x and CO must be installed within 3 calendar months after the burner inspection, (40 CFR 63.10021(e)(1)(i))
 - (ii) Burner or combustion control component parts that do not affect the ability to optimize NO_x and CO may be installed on a schedule determined by the operator; (40 CFR 63.10021(e)(1)(ii))
- (b) As applicable, inspect the flame pattern and make any adjustments to the burner or combustion controls necessary to optimize the flame pattern. The adjustment should be consistent with the manufacturer's specifications, if available, or in accordance with best combustion engineering practice for that burner type; (40 CFR 63.10021(e)(2))
- (c) As applicable, observe the damper operations as a function of mill and/or cyclone loadings, cyclone and pulverizer coal feeder loadings, or other pulverizer and coal mill performance parameters, making adjustments and effecting repair to dampers, controls, mills, pulverizers, cyclones, and sensors; (40 CFR 63.10021(e)(3))
- (d) As applicable, evaluate windbox pressures and air proportions, making adjustments and effecting repair to dampers, actuators, controls, and sensors; (40 CFR 63.10021(e)(4))
- (e) Inspect the system controlling the air-to-fuel ratio and ensure that it is correctly calibrated and functioning properly. Such inspection may include calibrating excess O₂ probes and/or sensors, adjusting overfire air systems,

changing software parameters, and calibrating associated actuators and dampers to ensure that the systems are operated as designed. Any component out of calibration, in or near failure, or in a state that is likely to negate combustion optimization efforts prior to the next tune-up, should be corrected or repaired as necessary; (40 CFR 63.10021(e)(5))

- (f) Optimize combustion to minimize generation of CO and NO_x. This optimization should be consistent with the manufacturer's specifications, if available, or best combustion engineering practice for the applicable burner type. NO_x optimization includes burners, overfire air controls, concentric firing system improvements, neural network or combustion efficiency software, control systems calibrations, adjusting combustion zone temperature profiles, and add-on controls such as SCR and SNCR; CO optimization includes burners, overfire air controls, concentric firing system improvements, neural network or combustion efficiency software, control systems calibrations, and adjusting combustion zone temperature profiles; (40 CFR 63.10021(e)(6))
- (g) While operating at full load or the predominantly operated load, measure the concentration in the effluent stream of CO and NO_x in ppm, by volume, and oxygen in volume percent, before and after the tune-up adjustments are made (measurements may be either on a dry or wet basis, as long as it is the same basis before and after the adjustments are made). The owner or operator may use portable CO, NO_x and O₂ monitors for this measurement. EGU's employing neural network optimization systems need only provide a single pre- and post-tune-up value rather than continual values before and after each optimization adjustment made by the system; (40 CFR 63.10021(e)(7))
- (h) Maintain on-site and submit, if requested by the Administrator, an annual report containing the information in paragraphs (e)(1) through (e)(9) of this section including: (40 CFR 63.10021(e)(8))
 - (i) The concentrations of CO and NO_x in the effluent stream in ppm by volume, and oxygen in volume percent, measured before and after an adjustment of the EGU combustion systems; (40 CFR 63.10021(e)(8)(i))

- (ii) A description of any corrective actions taken as a part of the combustion adjustment; and (40 CFR 63.10021(e)(8)(ii))
 - (iii) The type(s) and amount(s) of fuel used over the 12 calendar months prior to an adjustment, but only if the unit was physically and legally capable of using more than one type of fuel during that period; and (40 CFR 63.10021(e)(8)(iii))
 - (i) Report the dates of the initial and subsequent tune-ups in hard copy, as specified in 40 CFR 63.10031(f)(5), until April 16, 2017. After April 16, 2017, report the date of all tune-ups electronically, in accordance with 40 CFR 63.10031(f). The tune-up report date is the date when tune-up requirements in paragraphs (e)(6) and (7) of this section are completed. (40 CFR 63.10021(e)(9))
- 6) The owner or operator shall submit the reports required under 40 CFR 63.10031 and, if applicable, the reports required under appendices A and B to 40 CFR 63, Subpart UUUUU. The electronic reports required by appendices A and B to 40 CFR 63, Subpart UUUUU must be sent to the Administrator electronically in a format prescribed by the Administrator, as provided in 40 CFR 63.10031. CEMS data (except for PM CEMS and any approved alternative monitoring using a HAP metals CEMS) shall be submitted using EPA's Emissions Collection and Monitoring Plan System (ECMPS) Client Tool. Other data, including PM CEMS data, HAP metals CEMS data, and CEMS performance test detail reports, shall be submitted in the file format generated through use of EPA's Electronic Reporting Tool, the Compliance and Emissions Data Reporting Interface, or alternate electronic file format, all as provided for under 40 CFR 63.10031. (40 CFR 63.10021(f))
- 7) The owner or operator shall report each instance in which the owner or operator did not meet an applicable emissions limit or operating limit in Tables 1 through 4 to 40 CFR 63, Subpart UUUUU or failed to conduct a required tune-up. These instances are deviations from the requirements of 40 CFR 63, Subpart UUUUU. These deviations must be reported according to 40 CFR 63.10031. (40 CFR 63.10021(g))
- 8) The owner or operator shall follow the startup or shutdown requirements as given in Table 3 to this subpart for each coal-fired, liquid oil-fired, or solid oil-derived fuel-fired EGU. (40 CFR

63.10021(h))

- (a) The owner or operator use the diluent cap and default gross output values, as described in 40 CFR 63.10007(f), during startup periods or shutdown periods. (40 CFR 63.10021(h)(1))
 - (b) The owner or operator shall operate all CMS, collect data, calculate pollutant emission rates, and record data during startup periods or shutdown periods. (40 CFR 63.10021(h)(2))
 - (c) The owner or operator shall report the information as required in 40 CFR 63.10031. (40 CFR 63.10021(h)(3))
 - (d) The owner or operator may choose to submit an alternative non-opacity emission standard, in accordance with the requirements contained in 40 CFR 63.10011(g)(4). Until promulgation in the *Federal Register* of the final alternative non-opacity emission standard, you shall comply with paragraph (1) of the definition of “startup” in 40 CFR 63.10042. (40 CFR 63.10021(h)(4))
- 9) The owner or operator shall provide reports as specified in 40 CFR 63.10031 concerning activities and periods of startup and shutdown. (40 CFR 63.10021(i))
- ix. Demonstrate continuous compliance under the emissions averaging provision: (40 CFR 63.10022)
- 1) Following the compliance date, the owner or operator must demonstrate compliance with 40 CFR 63, Subpart UUUUU on a continuous basis by meeting the requirements of paragraphs (a)(1) through (3) of this section. (40 CFR 63.10022(a))
 - (a) For each 30- (or 90-) day rolling average period, demonstrate compliance with the average weighted emissions limit for the existing units participating in the emissions averaging option as determined in 40 CFR 63.10009(f) and (g); (40 CFR 63.10022(a)(1))
 - (b) For each existing unit participating in the emissions averaging option that is equipped with PM CPMS, maintain the average parameter value at or below the operating limit established during the most recent performance test; (40 CFR 63.10022(a)(2))

- (c) For each existing unit participating in the emissions averaging option venting to a common stack configuration containing affected units from other subcategories, maintain the appropriate operating limit for each unit as specified in Table 4 to 40 CFR 63, Subpart UUUUU that applies. (40 CFR 63.10022(a)(3))
 - 2) Any instance where the owner or operator fails to comply with the continuous monitoring requirements in paragraphs (a)(1) through (3) of this section is a deviation. (40 CFR 63.10022(b))
- x. Establish PM CPMS operating limit and determine compliance with it: (40 CFR 63.10023)
 - 1) During the initial performance test or any such subsequent performance test that demonstrates compliance with the filterable PM, individual non-mercury HAP metals, or total non-mercury HAP metals limit (or for liquid oil-fired units, individual HAP metals or total HAP metals limit, including Hg) in Table 1 or 2, record all hourly average output values (e.g., milliamps, stack concentration, or other raw data signal) from the PM CPMS for the periods corresponding to the test runs (e.g., nine 1-hour average PM CPMS output values for three 3-hour test runs). (40 CFR 63.10023(a))
 - 2) Determine your operating limit as provided in paragraph (b)(2) of this section. You must verify an existing or establish a new operating limit after each repeated performance test. (40 CFR 63.10023(b))
 - (a) Determine your operating limit as follows: (40 CFR 63.10023(b)(2))
 - (i) If your PM performance test demonstrates your PM emissions do not exceed 75 percent of your emissions limit, you will use the average PM CPMS value recorded during the PM compliance test, the milliamp equivalent of zero output from your PM CPMS, and the average PM result of your compliance test to establish your operating limit. Calculate the operating limit by establishing a relationship of PM CPMS signal to PM concentration using the PM CPMS instrument zero, the average PM CPMS values corresponding to the three compliance test runs, and the average PM

concentration from the Method 5 compliance test with the procedures in (b)(2)(i)(A) through (D) of this section. (40 CFR 63.10023(b)(2)(i))

- (A) Determine your PM CPMS instrument zero output with one of the following procedures. (40 CFR 63.10023(b)(2)(i)(A))
- Zero point data for in-situ instruments should be obtained by removing the instrument from the stack and monitoring ambient air on a test bench. (40 CFR 63.10023(b)(2)(i)(A)(1))
 - Zero point data for extractive instruments should be obtained by removing the extractive probe from the stack and drawing in clean ambient air. (40 CFR 63.10023(b)(2)(i)(A)(2))
 - The zero point can also be obtained by performing manual reference method measurements when the flue gas is free of PM emissions or contains very low PM concentrations (e.g., when your process is not operating, but the fans are operating or your source is combusting only natural gas) and plotting these with the compliance data to find the zero intercept. (40 CFR 63.10023(b)(2)(i)(A)(3))
 - If none of the steps in paragraphs (A)(1) through (3) of this section are possible, you must use a zero output value provided by the manufacturer. (40 CFR 63.10023(b)(2)(i)(A)(4))
- (B) Determine your PM CPMS instrument average (\bar{x}) in milliamps, and the average of your corresponding three PM compliance test runs (\bar{y}), using equation 10. (40 CFR 63.10023(b)(2)(i)(B))

$$\bar{x} = \frac{1}{n} \sum_{i=1}^n X_i, \bar{y} = \frac{1}{n} \sum_{i=1}^n Y_i \quad (\text{Eq. 10})$$

Where:

X_i = the PM CPMS data points for run i of the performance test,

Y_i = the PM emissions value (in lb/MWh) for run i of the performance test, and

n = the number of data points.

- (C) With your PM CPMS instrument zero expressed in milliamps, your three run average PM CPMS milliamp value, and your three run average PM emissions value (in lb/MWh) from your compliance runs, determine a relationship of PM lb/MWh per milliamp with equation 11. (40 CFR 63.10023(b)(2)(i)(C))

$$R = \frac{\bar{y}}{(\bar{x} - z)} \quad (\text{Eq. 11})$$

Where:

R = the relative PM lb/MWh per milliamp for your PM CPMS,

\bar{y} = the three run average PM lb/MWh,

\bar{x} = the three run average milliamp output from your PM CPMS, and

z = the milliamp equivalent of your instrument zero determined from (b)(2)(i)(A) of this section.

- (D) Determine your source specific 30-day rolling average operating limit using the PM lb/MWh per milliamp value from equation 11 in equation 12, below. This sets your operating limit at the PM CPMS output value corresponding to 75 percent of your emission limit. (40 CFR 63.10023(b)(2)(i)(D))

$$O_L = z + \frac{(0.75 \times L)}{R} \quad (\text{Eq. 12})$$

Where:

OL = the operating limit for your PM CPMS on a 30-day rolling average, in milliamps,

L = your source PM emissions limit in lb/MWh,

z = your instrument zero in milliamps, determined from (b)(2)(i)(A) of this section, and

R = the relative PM lb/MWh per milliamp for your PM CPMS, from equation 11.

- (ii) If your PM compliance test demonstrates your PM emissions exceed 75 percent of your emissions limit, you will use the average PM CPMS value recorded during the PM compliance test demonstrating compliance with the PM limit to establish your operating limit. (40 CFR 63.10023(b)(2)(ii))
 - (A) Determine your operating limit by averaging the PM CPMS milliamp output corresponding to your three PM performance test runs that demonstrate compliance with the emission limit using equation 13. (40 CFR 63.10023(b)(2)(ii)(A))

$$O_h = \frac{1}{n} \sum_{i=1}^n X_i \quad (\text{Eq. 13})$$

Where:

X_i = the PM CPMS data points for all runs i ,

n = the number of data points, and

O_h = your site specific operating limit, in milliamps.

- (iii) Your PM CPMS must provide a 4-20 milliamp output and the establishment of its relationship to manual reference method measurements must be determined in units of milliamps. (40 CFR 63.10023(b)(2)(iii))
- (iv) Your PM CPMS operating range must be capable of reading PM concentrations from zero to a level equivalent to two times your allowable emission limit. If your PM CPMS is an auto-ranging instrument capable of multiple scales, the primary range of the instrument must be capable of reading PM concentration from zero to a level equivalent to two times your allowable emission limit. (40 CFR 63.10023(b)(2)(iv))
- (v) During the initial performance test or any such subsequent performance test that demonstrates compliance with the PM limit, record and average all milliamp output values from the PM CPMS for

the periods corresponding to the compliance test runs. (40 CFR 63.10023(b)(2)(v))

- (vi) For PM performance test reports used to set a PM CPMS operating limit, the electronic submission of the test report must also include the make and model of the PM CPMS instrument, serial number of the instrument, analytical principle of the instrument (e.g. beta attenuation), span of the instruments primary analytical range, milliamp value equivalent to the instrument zero output, technique by which this zero value was determined, and the average milliamp signal corresponding to each PM compliance test run. (40 CFR 63.10023(b)(2)(vi))
- 3) The owner or operator shall operate and maintain the process and control equipment such that the 30 operating day average PM CPMS output does not exceed the operating limit determined in paragraphs (a) and (b) of this section. (40 CFR 63.10023(c))
- xi. Record keeping requirements: (40 CFR 63.10032)
- 1) The owner or operator shall keep records according to paragraphs (a)(1) and (2) of this section. If the owner or operator is required to (or elect to) continuously monitor Hg and/or HCl and/or HF emissions, the owner or operator shall also keep the records required under appendix A and/or appendix B to 40 CFR 63, Subpart UUUUU. (40 CFR 63.10032(a))
 - (a) A copy of each notification and report that the owner or operator submitted to comply with 40 CFR 63, Subpart UUUUU, including all documentation supporting any Initial Notification or Notification of Compliance Status or compliance report that the owner or operator submitted, according to the requirements in 40 CFR 63.10 (b)(2)(xiv). (40 CFR 63.10032(a)(1))
 - (b) Records of performance stack tests, fuel analyses, or other compliance demonstrations and performance evaluations, as required in 40 CFR 63.10 (b)(2)(viii). (40 CFR 63.10032(a)(2))
 - 2) For each CEMS and CPMS, the owner or operator shall keep records according to paragraphs (b)(1) through (4) of this section. (40 CFR 63.10032(b))

- (a) Records described in 40 CFR 63.10(b)(2)(vi) through (xi). (40 CFR 63.10032(b)(1))
 - (b) Previous (i.e., superseded) versions of the performance evaluation plan as required in 40 CFR 63.8(d)(3). (40 CFR 63.10032(b)(2))
 - (c) Request for alternatives to relative accuracy test for CEMS as required in 40 CFR 63.8(f)(6)(i). (40 CFR 63.10032(b)(3))
 - (d) Records of the date and time that each deviation started and stopped and whether the deviation occurred during a period of startup, shutdown, or malfunction or during another period. (40 CFR 63.10032(b)(4))
- 3) The owner or operator shall keep the records required in Table 7 to 40 CFR 63, Subpart UUUUU including records of all monitoring data and calculated averages for applicable PM CPMS operating limits to show continuous compliance with each emission limit and operating limit that applies to the owner or operator. (40 CFR 63.10032(c))

Table 7 to Subpart UUUUU of Part 63 - Demonstrating Continuous Compliance [As stated in 40 CFR63.10021. The owner or operator shall show continuous compliance with the emission limitations for affected sources according to the following]

| If the owner or operator uses one of the following to meet applicable emissions limits, operating limits, or work practice standards . . . | The owner or operator demonstrate continuous compliance by . . . |
|---|---|
| 1. CEMS to measure filterable PM, SO ₂ , HCl, HF, or Hg emissions, or using a sorbent trap monitoring system to measure Hg | Calculating the 30- (or 90-) boiler operating day rolling arithmetic average emissions rate in units of the applicable emissions standard basis at the end of each boiler operating day using all of the quality assured hourly average CEMS or sorbent trap data for the previous 30- (or 90-) boiler operating days, excluding data recorded during periods of startup or shutdown. |
| 2. PM CPMS to measure compliance with a parametric operating limit | Calculating the 30- (or 90-) boiler operating day rolling arithmetic average of all of the quality assured hourly average PM CPMS output data (e.g., milliamps, PM concentration, raw data signal) collected for all operating hours for the previous 30- (or 90-) boiler operating days, excluding data recorded during periods of startup or shutdown. |

| | |
|--|---|
| 3. Site-specific monitoring using CMS for liquid oil-fired EGUs for HCl and HF emission limit monitoring | If applicable, by conducting the monitoring in accordance with an approved site-specific monitoring plan. |
| 4. Quarterly performance testing for coal-fired, solid oil derived fired, or liquid oil-fired EGUs to measure compliance with one or more non-PM (or its alternative emission limits) applicable emissions limit in Table 1 or 2, or PM (or its alternative emission limits) applicable emissions limit in Table 2 | Calculating the results of the testing in units of the applicable emissions standard. |
| 5. Conducting periodic performance tune-ups of your EGU(s) | Conducting periodic performance tune-ups of your EGU(s), as specified in 40 CFR 63.10021(e). |
| 6. Work practice standards for coal-fired, liquid oil-fired, or solid oil-derived fuel-fired EGUs during startup | Operating in accordance with Table 3. |
| 7. Work practice standards for coal-fired, liquid oil-fired, or solid oil-derived fuel-fired EGUs during shutdown | Operating in accordance with Table 3. |

- 4) For each EGU subject to an emission limit, the owner or operator shall also keep the records in paragraphs (d)(1) through (3) of this section. (40 CFR 63.10032(d))
- (a) The owner or operator shall keep records of monthly fuel use by each EGU, including the type(s) of fuel and amount(s) used. (40 CFR 63.10032(d)(1))
- (b) If the owner or operator combusts non-hazardous secondary materials that have been determined not to be solid waste pursuant to 40 CFR 241.3(b)(1), the owner or operator shall keep a record which documents how the secondary material meets each of the legitimacy criteria. If the owner or operator combusts a fuel that has been processed from a discarded non-hazardous secondary material pursuant to 40 CFR 241.3(b)(2), the owner or operator shall keep records as to how the operations that produced the fuel satisfies the definition of processing in 40 CFR 241.2. If the fuel received a non-waste determination pursuant to the petition process submitted under 40 CFR 241.3(c), the owner or operator shall keep a record which documents how the fuel satisfies the requirements of the petition process. (40 CFR 63.10032(d)(2))
- (c) For an EGU that qualifies as an LEE under 40 CFR 63.10005(h), the owner or operator shall keep annual records that document that the emissions in the previous

stack test(s) continue to qualify the unit for LEE status for an applicable pollutant, and document that there was no change in source operations including fuel composition and operation of air pollution control equipment that would cause emissions of the pollutant to increase within the past year. (40 CFR 63.10032(d)(3))

- 5) If the owner or operator elects to average emissions consistent with 40 CFR 63.10009, the owner or operator shall additionally keep a copy of the emissions averaging implementation plan required in 40 CFR 63.10009(g), all calculations required under 40 CFR 63.10009, including daily records of heat input or steam generation, as applicable, and monitoring records consistent with 40 CFR 63.10022. (40 CFR 63.10032(e))
- 6) Regarding startup periods or shutdown periods: (40 CFR 63.10032(f))
 - (a) Should you choose to rely on paragraph (1) of the definition of “startup” in 40 CFR 63.10042 for your EGU, you must keep records of the occurrence and duration of each startup or shutdown. (40 CFR 63.10032(f)(1))
 - (b) Should you choose to rely on paragraph (2) of the definition of “startup” in 40 CFR 63.10042 for your EGU, you must keep records of:
 - (i) The determination of the maximum possible clean fuel capacity for each EGU; (40 CFR 63.10032(f)(2)(i))
 - (ii) The determination of the maximum possible hourly clean fuel heat input and of the hourly clean fuel heat input for each EGU; and (40 CFR 63.10032(f)(2)(ii))
 - (iii) The information required in 40 CFR 63.10020(e). (40 CFR 63.10032(f)(2)(iii))
- 7) The owner or operator shall keep records of the occurrence and duration of each malfunction of an operation (i.e., process equipment) or the air pollution control and monitoring equipment. (40 CFR 63.10032(g))
- 8) The owner or operator shall keep records of actions taken during periods of malfunction to minimize emissions in accordance with

- 40 CFR 63.10000(b), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation. (40 CFR 63.10032(h))
- 9) The owner or operator shall keep records of the type(s) and amount(s) of fuel used during each startup or shutdown. (40 CFR 63.10032(i))
 - 10) If the owner or operator elects to establish that an EGU qualifies as a limited-use liquid oil-fired EGU, the owner or operator shall keep records of the type(s) and amount(s) of fuel use in each calendar quarter to document that the capacity factor limitation for that subcategory is met. (40 CFR 63.10032(j))
- xii. Record keeping form and time period: (40 CFR 63.10033)
- 1) The owner or operator's records must be in a form suitable and readily available for expeditious review, according to 40 CFR 63.10(b)(1). (40 CFR 63.10033(a))
 - 2) As specified in 40 CFR 63.10(b)(1), the owner or operator shall keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. (40 CFR 63.10033(b))
 - 3) The owner or operator shall keep each record on site for at least 2 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record, according to 40 CFR 63.10(b)(1). The owner or operator can keep the records off site for the remaining 3 years. (40 CFR 63.10033(c))

S3. Reporting (Regulation 2.16, section 4.1.9.3)

HAP

- i. Notifications and date to submit the notifications: (40 CFR 63.10030)
 - 1) The owner or operator shall submit all of the notifications in 40 CFR 63.7(b) and (c), 63.8 (e), (f)(4) and (6), and 63.9 (b) through (h) that apply to the owner or operator by the dates specified. (40 CFR 63.10030(a))
 - 2) As specified in 40 CFR 63.9(b)(2), if the owner or operator starts up the affected source before April 16, 2012, the owner or operator

shall submit an Initial Notification not later than 120 days after April 16, 2012. (40 CFR 63.10030(b))

- 3) As specified in 40 CFR 63.9(b)(4) and (b)(5), if the owner or operator starts up the new or reconstructed affected source on or after April 16, 2012, the owner or operator shall submit an Initial Notification not later than 15 days after the actual date of startup of the affected source. (40 CFR 63.10030(c))
- 4) When the owner or operator is required to conduct a performance test, the owner or operator shall submit a Notification of Intent to conduct a performance test at least 30 days before the performance test is scheduled to begin. (40 CFR 63.10030(d))
- 5) When the owner or operator is required to conduct an initial compliance demonstration as specified in 40 CFR 63.10011(a), the owner or operator shall submit a Notification of Compliance Status according to 40 CFR 63.9(h)(2)(ii). The Notification of Compliance Status report must contain all the information specified in paragraphs (e)(1) through (7), as applicable. (40 CFR 63.10030(e))
 - (a) A description of the affected source(s) including identification of the subcategory of the source, the design capacity of the source, a description of the add-on controls used on the source, description of the fuel(s) burned, including whether the fuel(s) were determined by the owner or operator or EPA through a petition process to be a non-waste under 40 CFR 241.3, whether the fuel(s) were processed from discarded non-hazardous secondary materials within the meaning of 40 CFR 241.3, and justification for the selection of fuel(s) burned during the performance test. (40 CFR 63.10030(e)(1))
 - (b) Summary of the results of all performance tests and fuel analyses and calculations conducted to demonstrate initial compliance including all established operating limits. (40 CFR 63.10030(e)(2))
 - (c) Identification of whether the owner or operator plans to demonstrate compliance with each applicable emission limit through performance testing; fuel moisture analyses; performance testing with operating limits (e.g., use of PM CPMS); CEMS; or a sorbent trap monitoring system. (40 CFR 63.10030(e)(3))

- (d) Identification of whether the owner or operator plans to demonstrate compliance by emissions averaging. (40 CFR 63.10030(e)(4))
- (e) A signed certification that the owner or operator has met all applicable emission limits and work practice standards. (40 CFR 63.10030(e)(5))
- (f) If the owner or operator had a deviation from any emission limit, work practice standard, or operating limit, the owner or operator shall also submit a brief description of the deviation, the duration of the deviation, emissions point identification and the cause of the deviation in the Notification of Compliance Status report. (40 CFR 63.10030(e)(6))
- (g) In addition to the information required in 40 CFR 63.9(h)(2), the notification of compliance status must include the following: (40 CFR 63.10030(e)(7))
 - (i) A summary of the results of the annual performance tests and documentation of any operating limits that were reestablished during this test, if applicable. If the owner or operator is conducting stack tests once every 3 years consistent with 40 CFR 63.10006(b), the date of each stack test conducted during the previous 3 years, a comparison of the emission level the owner or operator achieved in each stack test conducted during the previous 3 years to the 50 percent emission limit threshold required in 40 CFR 63.10006(i), and a statement as to whether there have been any operational changes since the last stack test that could increase emissions. (40 CFR 63.10030(e)(7)(i))
 - (ii) Certifications of compliance, as applicable, and must be signed by a responsible official stating: (40 CFR 63.10030(e)(7)(ii))
 - (A) “This EGU complies with the requirements in 40 CFR 63.10021(a) to demonstrate continuous compliance.” And (40 CFR 63.10030(e)(7)(ii)(A))

- (B) “No secondary materials that are solid waste were combusted in any affected unit.” (40 CFR 63.10030(e)(7)(ii)(B))
- (iii) For each of your existing EGUs, identification of each emissions limit as specified in Table 2 to this subpart with which you plan to comply. (40 CFR 63.10030(e)(7)(iii))
- (A) You may switch from a mass per heat input to a mass per gross output limit (or vice-versa), provided that: (40 CFR 63.10030(e)(7)(iii)(A))
- You submit a request that identifies for each EGU or EGU emissions averaging group involved in the proposed switch both the current and proposed emission limit; (40 CFR 63.10030(e)(7)(iii)(A)(1))
 - Your request arrives to the Administrator at least 30 calendar days prior to the date that the switch is proposed to occur; (40 CFR 63.10030(e)(7)(iii)(A)(2))
 - Your request demonstrates through performance stack test results completed within 30 days prior to your submission, compliance for each EGU or EGU emissions averaging group with both the mass per heat input and mass per gross output limits; (40 CFR 63.10030(e)(7)(iii)(A)(3))
 - You revise and submit all other applicable plans, *e.g.*, monitoring and emissions averaging, with your request; and (40 CFR 63.10030(e)(7)(iii)(A)(4))
 - You maintain records of all information regarding your choice of emission limits. (40 CFR 63.10030(e)(7)(iii)(A)(5))
- (B) You begin to use the revised emission limits starting in the next reporting period, after receipt of written acknowledgement from the Administrator of the switch. (40 CFR 63.10030(e)(7)(iii)(B))

- (C) From submission of your request until start of the next reporting period after receipt of written acknowledgement from the Administrator of the switch, you demonstrate compliance with both the mass per heat input and mass per gross output emission limits for each pollutant for each EGU or EGU emissions averaging group. (40 CFR 63.10030(e)(7)(iii)(C))
- (h) Identification of whether you plan to rely on paragraph (1) or (2) of the definition of “startup” in 40 CFR 63.10042. (40 CFR 63.10030(e)(8))
 - (i) Should you choose to rely on paragraph (2) of the definition of “startup” in 40 CFR 63.10042 for your EGU, you shall include a report that identifies: (40 CFR 63.10030(e)(8)(i))
 - (A) The original EGU installation date; (40 CFR 63.10030(e)(8)(i)(A))
 - (B) The original EGU design characteristics, including, but not limited to, fuel mix and PM controls; (40 CFR 63.10030(e)(8)(i)(B))
 - (C) Each design PM control device efficiency established during performance testing or while operating in periods other than startup and shutdown periods; (40 CFR 63.10030(e)(8)(i)(C))
 - (D) The design PM emission rate from the EGU in terms of pounds PM per MMBtu and pounds PM per hour established during performance testing or while operating in periods other than startup and shutdown periods; (40 CFR 63.10030(e)(8)(i)(D))
 - (E) The design time from start of fuel combustion to necessary conditions for each PM control device startup; (40 CFR 63.10030(e)(8)(i)(E))
 - (F) Each design PM control device efficiency upon startup of the PM control device, if

different from the efficiency provided in paragraph (e)(8)(i)(C) of this section; (40 CFR 63.10030(e)(8)(i)(F))

- (G) Current EGU PM producing characteristics, including, but not limited to, fuel mix and PM controls, if different from the characteristics provided in paragraph (e)(8)(i)(B) of this section; (40 CFR 63.10030(e)(8)(i)(G))
 - (H) Current PM control device efficiency from each PM control device, if different from the efficiency provided in paragraph (e)(8)(i)(C) of this section; (40 CFR 63.10030(e)(8)(i)(H))
 - (I) Current PM emission rate from the EGU in terms of pounds PM per MMBtu and pounds per hour, if different from the rate provided in paragraph (e)(8)(i)(D) of this section; (40 CFR 63.10030(e)(8)(i)(I))
 - (J) Current time from start of fuel combustion to conditions necessary for each PM control device startup, if different from the time provided in paragraph (e)(8)(i)(E) of this section; and (40 CFR 63.10030(e)(8)(i)(J))
 - (K) Current PM control device efficiency upon startup of each PM control device, if different from the efficiency provided in paragraph (e)(8)(i)(H) of this section. (40 CFR 63.10030(e)(8)(i)(K))
- (ii) The report shall be prepared, signed, and sealed by a professional engineer licensed in the state where your EGU is located. (40 CFR 63.10030(e)(8)(ii))
 - (iii) You may switch from paragraph (1) of the definition of “startup” in § 63.10042 to paragraph (2) of the definition of “startup” (or vice-versa), provided that: (40 CFR 63.10030(e)(8)(iii))
 - (A) You submit a request that identifies for each EGU or EGU emissions averaging group

involved in the proposed switch both the current definition of “startup” relied on and the proposed definition you plan to rely on; (40 CFR 63.10030(e)(8)(iii)(A))

- (B) Your request arrives to the Administrator at least 30 calendar days prior to the date that the switch is proposed to occur; (40 CFR 63.10030(e)(8)(iii)(B))
 - (C) You revise and submit all other applicable plans, *e.g.*, monitoring and emissions averaging, with your submission; (40 CFR 63.10030(e)(8)(iii)(C))
 - (D) You maintain records of all information regarding your choice of the definition of “startup”; and (40 CFR 63.10030(e)(8)(iii)(D))
 - (E) You begin to use the revised definition of “startup” in the next reporting period after receipt of written acknowledgement from the Administrator of the switch. (40 CFR 63.10030(e)(8)(iii)(E))
- 6) You must submit the notifications in 40 CFR 63.10000(h)(2) and (i)(2) that may apply to you by the dates specified. (40 CFR 63.10030(f))
- ii. Reports and the date to submit the reports: (40 CFR 63.10031)
- 1) The owner or operator shall submit each report in Table 8 to 40 CFR 63, Subpart UUUUU that applies to the owner or operator. If the owner or operator is required to (or elect to) continuously monitor Hg and/or HCl and/or HF emissions, the owner or operator shall also submit the electronic reports required under appendix A and/or appendix B to the subpart, at the specified frequency. (40 CFR 63.10031(a))

Table 8 to Subpart UUUUU of Part 63 - Reporting Requirements [As stated in 40 CFR63.10031. The owner or operator shall comply with the following requirements for reports]

| | | |
|---|--------------------------------------|--|
| The owner or operator shall submit a . . . | The report must contain . . . | The owner or operator shall submit the report |
|---|--------------------------------------|--|

| The owner or operator shall submit a . . . | The report must contain . . . | The owner or operator shall submit the report |
|---|---|---|
| 1. Compliance report ... | <p>a. Information required in 40 CFR 63.10031(c)(1) through (9);</p> <p>b. If there are no deviations from any emission limitation (emission limit and operating limit) that applies to the owner or operator and there are no deviations from the requirements for work practice standards in Table 3 to 40 CFR 63, Subpart UUUUU that apply to the owner or operator, a statement that there were no deviations from the emission limitations and work practice standards during the reporting period. If there were no periods during which the CMSs, including continuous emissions monitoring system, and operating parameter monitoring systems, were out-of-control as specified in 40 CFR 63.8(c)(7), a statement that there were no periods during which the CMSs were out-of-control during the reporting period; and ...</p> <p>c. If the owner or operator has a deviation from any emission limitation (emission limit and operating limit) or work practice standard during the reporting period, the report must contain the information in 40 CFR 63.10031(d). If there were periods during which the CMSs, including continuous emissions monitoring systems and continuous parameter monitoring systems, were out-of-control, as specified in 40 CFR 63.8(c) (7), the report must contain the information in 40 CFR 63.10031(e) ...</p> | Semiannually according to the requirements in 40 CFR 63.10031(b). |

2) Unless the Administrator (APCD) has approved a different schedule for submission of reports under 40 CFR 63.10(a), the owner or operator shall submit each report by the date in Table 8 to 40 CFR 63, Subpart UUUUU and according to the requirements in paragraphs (b)(1) through (5) of this section. (40 CFR 63.10031(b))

(a) The first compliance report must cover the period beginning on the compliance date that is specified for the affected source in 40 CFR 63.9984 and ending on June 30 or December 31, whichever date is the first date that occurs at least 180 days after the compliance date that is specified for the source in 40 CFR 63.9984. (40 CFR 63.10031(b)(1))

(b) The first compliance report must be postmarked or submitted electronically no later than July 31 or January 31, whichever date is the first date following the end of the first calendar half after the compliance date that is specified for the source in 40 CFR 63.9984. (40 CFR 63.10031(b)(2))

- (c) Each subsequent compliance report must cover the semiannual reporting period from January 1 through June 30 or the semiannual reporting period from July 1 through December 31. (40 CFR 63.10031(b)(3))
 - (d) Each subsequent compliance report must be postmarked or submitted electronically no later than July 31 or January 31, whichever date is the first date following the end of the semiannual reporting period. (40 CFR 63.10031(b)(4))
 - (e) For each affected source that is subject to permitting regulations pursuant to part 70 or part 71 of this chapter, and if the permitting authority has established dates for submitting semiannual reports pursuant to 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A), the owner or operator may submit the first and subsequent compliance reports according to the dates the permitting authority has established instead of according to the dates in paragraphs (b)(1) through (4) of this section. (40 CFR 63.10031(b)(5))
- 3) The compliance report must contain the information required in paragraphs (c)(1) through (9) of this section. (40 CFR 63.10031(c))
- (a) The information required by the summary report located in 63.10(e)(3)(vi). (40 CFR 63.10031(c)(1))
 - (b) The total fuel use by each affected source subject to an emission limit, for each calendar month within the semiannual reporting period, including, but not limited to, a description of the fuel, whether the fuel has received a non-waste determination by EPA or the basis for concluding that the fuel is not a waste, and the total fuel usage amount with units of measure. (40 CFR 63.10031(c)(2))
 - (c) Indicate whether the owner or operator burned new types of fuel during the reporting period. If the owner or operator did burn new types of fuel the owner or operator shall include the date of the performance test where that fuel was in use. (40 CFR 63.10031(c)(3))
 - (d) Include the date of the most recent tune-up for each EGU. The date of the tune-up is the date the tune-up provisions specified in 40 CFR 63.10021(e)(6) and (7) were completed. (40 CFR 63.10031(c)(4))

- (e) Should you choose to rely on paragraph (2) of the definition of “startup” in § 63.10042 for your EGU, for each instance of startup or shutdown you shall: (40 CFR 63.10031(c)(5))
 - (i) Include the maximum clean fuel storage capacity and the maximum hourly heat input that can be provided for each clean fuel determined according to the requirements of 40 CFR 63.10032(f). (40 CFR 63.10031(c)(5)(i))
 - (ii) Include the information required to be monitored, collected, or recorded according to the requirements of 40 CFR 63.10020(e). (40 CFR 63.10031(c)(5)(i))
 - (iii) If you choose to use CEMS to demonstrate compliance with numerical limits, include hourly average CEMS values and hourly average flow values during startup periods or shutdown periods. Use units of milligrams per cubic meter for PM CEMS values, micrograms per cubic meter for Hg CEMS values, and ppmv for HCl, HF, or SO₂ CEMS values. Use units of standard cubic meters per hour on a wet basis for flow values. (40 CFR 63.10031(c)(5)(iii))
 - (iv) If you choose to use a separate sorbent trap measurement system for startup or shutdown reporting periods, include hourly average mercury concentration values in terms of micrograms per cubic meter. (40 CFR 63.10031(c)(5)(iv))
 - (v) If you choose to use a PM CPMS, include hourly average operating parameter values in terms of the operating limit, as well as the operating parameter to PM correlation equation. (40 CFR 63.10031(c)(5)(v))
- (f) You must report emergency bypass information annually from EGUs with LEE status. (40 CFR 63.10031(c)(6))
- (g) A summary of the results of the annual performance tests and documentation of any operating limits that were reestablished during the test, if applicable. If you are conducting stack tests once every 3 years to maintain LEE status, consistent with 40 CFR 63.10006(b), the date of

each stack test conducted during the previous 3 years, a comparison of emission level you achieved in each stack test conducted during the previous 3 years to the 50 percent emission limit threshold required in 40 CFR 63.10005(h)(1)(i), and a statement as to whether there have been any operational changes since the last stack test that could increase emissions. (40 CFR 63.10031(c)(7))

- (h) A certification. (40 CFR 63.10031(c)(8))
 - (i) If you have a deviation from any emission limit, work practice standard, or operating limit, you must also submit a brief description of the deviation, the duration of the deviation, emissions point identification, and the cause of the deviation. (40 CFR 63.10031(c)(9))
- 4) For each excess emissions occurring at an affected source where the owner or operator is using a CMS to comply with that emission limit or operating limit, the owner or operator shall include the information required in 40 CFR 63.10(e)(3)(v) in the compliance report specified in section (c). (40 CFR 63.10031(d))
 - 5) Each affected source that has obtained a Title V operating permit pursuant to part 70 or part 71 of this chapter must report all deviations as defined in 40 CFR 63, Subpart UUUUU in the semiannual monitoring report required by 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A). If an affected source submits a compliance report pursuant to Table 8 to 40 CFR 63, Subpart UUUUU along with, or as part of, the semiannual monitoring report required by 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A), and the compliance report includes all required information concerning deviations from any emission limit, operating limit, or work practice requirement in 40 CFR 63, Subpart UUUUU, submission of the compliance report satisfies any obligation to report the same deviations in the semiannual monitoring report. Submission of a compliance report does not otherwise affect any obligation the affected source may have to report deviations from permit requirements to the permit authority. (40 CFR 63.10031(e))
 - 6) As of January 1, 2012, and within 60 days after the date of completing each performance test, the owner or operator shall submit the results of the performance tests required by 40 CFR 63, Subpart UUUUU to EPA's WebFIRE database by using the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through EPA's Central Data Exchange (CDX)

(www.epa.gov/cdx). Performance test data must be submitted in the file format generated through use of EPA's Electronic Reporting Tool (ERT) (see <http://www.epa.gov/ttn/chief/ert/index.html>). Only data collected using those test methods on the ERT Web site are subject to this requirement for submitting reports electronically to WebFIRE. Owners or operators who claim that some of the information being submitted for performance tests is confidential business information (CBI) must submit a complete ERT file including information claimed to be CBI on a compact disk or other commonly used electronic storage media (including, but not limited to, flash drives) to EPA. The electronic media must be clearly marked as CBI and mailed to U.S. EPA/OAPQS/CORE CBI Office, Attention: WebFIRE Administrator, MD C404-02, 4930 Old Page Rd., Durham, NC 27703. The same ERT file with the CBI omitted must be submitted to EPA via CDX as described earlier in this paragraph. At the discretion of the delegated authority, the owner or operator shall also submit these reports, including the confidential business information, to the delegated authority in the format specified by the delegated authority. (40 CFR 63.10031(f))

- (a) Within 60 days after the date of completing each CEMS (SO₂, PM, HCl, HF, and Hg) performance evaluation test, as defined in 40 CFR 63.2 and required by 40 CFR 63, Subpart UUUUU, the owner or operator shall submit the relative accuracy test audit (RATA) data (or, for PM CEMS, RCA and RRA data) required by 40 CFR 63, Subpart UUUUU to EPA's WebFIRE database by using the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through EPA's Central Data Exchange (CDX) (www.epa.gov/cdx). The RATA data shall be submitted in the file format generated through use of EPA's Electronic Reporting Tool (ERT) (<http://www.epa.gov/ttn/chief/ert/index.html>). Only RATA data compounds listed on the ERT Web site are subject to this requirement. Owners or operators who claim that some of the information being submitted for RATAs is confidential business information (CBI) shall submit a complete ERT file including information claimed to be CBI on a compact disk or other commonly used electronic storage media (including, but not limited to, flash drives) by registered letter to EPA and the same ERT file with the CBI omitted to EPA via CDX as described earlier in this paragraph. The compact disk or other commonly used electronic storage media shall be clearly marked as CBI

and mailed to U.S. EPA/OAPQS/CORE CBI Office, Attention: WebFIRE Administrator, MD C404-02, 4930 Old Page Rd., Durham, NC 27703. At the discretion of the delegated authority, owners or operators shall also submit these RATAs to the delegated authority in the format specified by the delegated authority. Owners or operators shall submit calibration error testing, drift checks, and other information required in the performance evaluation as described in 40 CFR 63.2 and as required in this chapter. (40 CFR 63.10031(f)(1))

- (b) For a PM CEMS, PM CPMS, or approved alternative monitoring using a HAP metals CEMS, within 60 days after the reporting periods ending on March 31st, June 30th, September 30th, and December 31st, the owner or operator shall submit quarterly reports to EPA's WebFIRE database by using the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through EPA's Central Data Exchange (CDX) (www.epa.gov/cdx). The owner or operator shall use the appropriate electronic reporting form in CEDRI or provide an alternate electronic file consistent with EPA's reporting form output format. For each reporting period, the quarterly reports must include all of the calculated 30-boiler operating day rolling average values derived from the CEMS and PM CPMS. (40 CFR 63.10031(f)(2))
- (c) Reports for an SO₂ CEMS, a Hg CEMS or sorbent trap monitoring system, an HCl or HF CEMS, and any supporting monitors for such systems (such as a diluent or moisture monitor) shall be submitted using the ECMPS Client Tool, as provided for in Appendices A and B to 40 CFR 63, Subpart UUUUU and 40 CFR 63.10021(f). (40 CFR 63.10031(f)(3))
- (d) Submit the compliance reports required under paragraphs (c) and (d) of this section and the notification of compliance status required under 40 CFR 63.10030(e) to EPA's WebFIRE database by using the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through EPA's Central Data Exchange (CDX) (www.epa.gov/cdx). The owner or operator shall use the appropriate electronic reporting form in CEDRI or provide an alternate electronic file consistent with EPA's reporting form output format. (40 CFR 63.10031(f)(4))

- (e) All reports required by 40 CFR 63, Subpart UUUUU not subject to the requirements in paragraphs (f)(1) through (4) of this section must be sent to the Administrator at the appropriate address listed in 40 CFR 63.13. If acceptable to both the Administrator and the owner or operator of a source, these reports may be submitted on electronic media. The Administrator retains the right to require submittal of reports subject to paragraphs (f)(1), (2), and (3) of this section in paper format. (40 CFR 63.10031(f)(5))

- 7) If the owner or operator had a malfunction during the reporting period, the compliance report must include the number, duration, and a brief description for each type of malfunction which occurred during the reporting period and which caused or may have caused any applicable emission limitation to be exceeded. (40 CFR 63.10031(g))

Attachment B - Testing Requirements for New Control Devices for EGUs**Specific Conditions****PM/ SO₂/ H₂SO₄/ Hg****a. Determination of monitoring parameters**

- i. The owner or operator shall establish a site-specific minimum PAC injection rate operating limit during a performance test for mercury, according to the following requirements:¹⁵⁰
 - 1) The owner or operator shall collect activated carbon injection rate data every 15 minutes during the entire period of the performance tests.
 - 2) Determine the hourly average activated carbon injection rate by computing the hourly averages using all of the 15-minute readings taken during each performance test.
 - 3) Determine the lowest hourly average established during the performance test as your operating limit. When your unit operates at lower loads, multiply your activated carbon injection rate by the load fraction (e.g., actual heat input divided by heat input during performance test, for 50 percent load, multiply the injection rate operating limit by 0.5) to determine the required injection rate.
- ii. The owner or operator shall determine the appropriate pressure drop range across the baghouse that will be used as the indicators of normal operation of the control devices.
 - 1) The owner or operator shall monitor and record pressure drop across the baghouse at least once each per operating day. The owner or operator shall establish an appropriate pressure drop range for the normal operation of the baghouse after ninety (90) consecutive days of observation.
 - 2) The owner or operator shall submit to the District the established appropriate ranges of the pressure drop for the baghouse. The report shall be submitted within 30 days following the end of the 90 day monitoring period.

¹⁵⁰ The requirements of establishing operating limit for PAC injection refer to Table 7 to 40 CFR 63, Subpart DDDDD.

- b. **Tests for control efficiency** (Regulation 2.16, section 4.1.9.1)
- i. The owner or operator shall perform tests with appropriate EPA Reference Method performance test within 180 days of achieving normal operation¹⁵¹ on the inlet and outlet of the new control devices PJFF (for PM), FGD (for SO₂), Dry sorbent injection (for acid control), and PAC Injection (for Mercury) in order to determine their control efficiencies.
 - ii. The owner or operator shall conduct all performance tests in such a manner that the following testing requirements can be achieved.
 - 1) The test shall be performed at 90% or higher of maximum capacity, or allowable/permitted capacity, or at a level of capacity which results in the greatest emissions that is representative of the operations. Failure to perform the test, at maximum capacity, allowable/permitted capacity, or at a level of capacity which resulted in the greatest emissions, may necessitate a re-test or necessitate a revision of the allowable/permitted capacity of the process equipment depending upon the difference between the testing results and the limit.
 - 2) The owner or operator shall submit written test plans (protocol) for the control efficiency testing. They shall include the EPA test methods that will be used for performance evaluation testing, the process operating parameters that will be monitored during the performance test, and the control device performance indicators (e.g. pressure drop, minimum combustion chamber temperature) that will be monitored during the performance test. The test plans shall be furnished to the District at least 30 days prior to the actual date of the performance test.
 - 3) The owner or operator shall provide the District at least 10 days prior notice of any performance test to afford the District the opportunity to have an observer present.
 - 4) The owner or operator shall furnish the District with a written report of the results of the performance test within 60 days following the actual date of completion of the performance test.
 - 5) The owner or operator shall provide written notification to the District of the actual date of initial startup. The written notification shall be postmarked within 15 days of achieving normal operation.

¹⁵¹ Normal operation is defined as “after the shakedown period and when the unit is operating for the purpose of generating electricity.”

c. **Test methods required in 40 CFR 60, Subpart D** (use if applicable to U3, U4)

- i. In conducting the performance tests required in 40 CFR 60.8, and subsequent performance tests as requested by the EPA Administrator, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in 40 CFR 60.46, except as provided in 40 CFR 60.8(b). Acceptable alternative methods and procedures are given in paragraph (d) of 40 CFR 60.46. (40 CFR 60.46(a))
- ii. The owner or operator shall determine compliance with the PM and SO₂ standards in 40 CFR 60.42, 60.43, and 60.44 as follows: (40 CFR 60.46(b))
- 1) The emission rate (E) of PM and SO₂ shall be computed for each run using the following equation: (40 CFR 60.46(b)(1))

$$E = CF_d \frac{20.9}{20.9 - \%O_2}$$

Where:

E = Emission rate of pollutant, ng/J (1b/million Btu);

C = Concentration of pollutant, ng/dscm (1b/dscf);

%O₂ = O₂ concentration, percent dry basis; and

F_d = Factor as determined from Method 19 of appendix A of this part.

- 2) Method 5 of appendix A of this part shall be used to determine the PM concentration (C) at affected facilities without wet flue-gas-desulfurization (FGD) systems and Method 5B of appendix A of this part shall be used to determine the PM concentration (C) after FGD systems. (40 CFR 60.46(b)(2))
- (a) The sampling time and sample volume for each run shall be at least 60 minutes and 0.85 dscm (30 dscf). The probe and filter holder heating systems in the sampling train shall be set to provide an average gas temperature of 160 ± 14 ° C (320 ± 25 ° F). (40 CFR 60.46(b)(2)(i))
- (b) The emission rate correction factor, integrated or grab sampling and analysis procedure of Method 3B of appendix A of this part shall be used to determine the O₂ concentration (%O₂). The O₂ sample shall be obtained simultaneously with, and at the same traverse points as, the particulate sample. If the grab sampling procedure is used, the O₂ concentration for the run shall be the arithmetic

- mean of the sample O₂ concentrations at all traverse points. (40 CFR 60.46(b)(2)(ii))
- (c) If the particulate run has more than 12 traverse points, the O₂ traverse points may be reduced to 12 provided that Method 1 of appendix A of this part is used to locate the 12 O₂ traverse points. (40 CFR 60.46(b)(2)(iii))
- 3) Method 9 of appendix A of this part and the procedures in 40 CFR 60.11 shall be used to determine opacity. (40 CFR 60.46(b)(3))
- 4) Method 6 of appendix A of this part shall be used to determine the SO₂ concentration. (40 CFR 60.46(b)(4))
- (a) The sampling site shall be the same as that selected for the particulate sample. The sampling location in the duct shall be at the centroid of the cross section or at a point no closer to the walls than 1 m (3.28 ft). The sampling time and sample volume for each sample run shall be at least 20 minutes and 0.020 dscm (0.71 dscf). Two samples shall be taken during a 1-hour period, with each sample taken within a 30-minute interval. (40 CFR 60.46(b)(4)(i))
- (b) The emission rate correction factor, integrated sampling and analysis procedure of Method 3B of appendix A of this part shall be used to determine the O₂ concentration (%O₂). The O₂ sample shall be taken simultaneously with, and at the same point as, the SO₂ sample. The SO₂ emission rate shall be computed for each pair of SO₂ and O₂ samples. The SO₂ emission rate (E) for each run shall be the arithmetic mean of the results of the two pairs of samples. (40 CFR 60.46(b)(4)(ii))
- 5) Method 7 of appendix A of this part shall be used to determine the NO_x concentration. (40 CFR 60.46(b)(5))
- (a) The sampling site and location shall be the same as for the SO₂ sample. Each run shall consist of four grab samples, with each sample taken at about 15-minute intervals. (40 CFR 60.46(b)(5)(i))
- (b) For each NO_x sample, the emission rate correction factor, grab sampling and analysis procedure of Method 3B of appendix A of this part shall be used to determine the O₂ concentration (%O₂). The sample shall be taken simultaneously with, and at the same point as, the NO_x sample. (40 CFR 60.46(b)(5)(ii))

- (c) The NO_x emission rate shall be computed for each pair of NO_x and O₂ samples. The NO_x emission rate (E) for each run shall be the arithmetic mean of the results of the four pairs of samples. (40 CFR 60.46(b)(5)(iii))
- iii. The owner or operator may use the following as alternatives to the reference methods and procedures in 40 CFR 60.46 or in other sections as specified: (40 CFR 60.46(d))
- 1) The emission rate (E) of PM, SO₂ and NO_x may be determined by using the F_c factor, provided that the following procedure is used: (40 CFR 60.46(d)(1))

- (a) The emission rate (E) shall be computed using the following equation: (40 CFR 60.46(d)(1)(i))

$$E = CF_c \frac{100}{\%CO_2}$$

Where:

E = Emission rate of pollutant, ng/J (lb/MMBtu);

C = Concentration of pollutant, ng/dscm (lb/dscf);

%CO₂ = CO₂ concentration, percent dry basis; and

F_c = Factor as determined in appropriate sections of Method 19 of appendix A of this part.

- (b) If and only if the average F_c factor in Method 19 of appendix A of this part is used to calculate E and either E is from 0.97 to 1.00 of the emission standard or the relative accuracy of a continuous emission monitoring system is from 17 to 20 percent, then three runs of Method 3B of appendix A of this part shall be used to determine the O₂ and CO₂ concentration according to the procedures in paragraph (b)(2)(ii), (4)(ii), or (5)(ii) of 40 CFR 60.46. Then if F_o(average of three runs), as calculated from the equation in Method 3B of appendix A of this part, is more than ± 3 percent than the average F_o value, as determined from the average values of F_d and F_c in Method 19 of appendix A of this part, *i.e.*, F_{oa} = 0.209 (F_{da}/F_{ca}), then the following procedure shall be followed: (40 CFR 60.46(d)(1)(ii))
- (i) When F_o is less than 0.97 F_{oa}, then E shall be increased by that proportion under 0.97 F_{oa}, *e.g.*, if F_o is 0.95 F_{oa}, E shall be increased by 2 percent.

This recalculated value shall be used to determine compliance with the emission standard. (40 CFR 60.46(d)(1)(ii)(A))

- (ii) When F_o is less than $0.97 F_{oa}$ and when the average difference (d) between the continuous monitor minus the reference methods is negative, then E shall be increased by that proportion under $0.97 F_{oa}$, *e.g.*, if F_o is $0.95 F_{oa}$, E shall be increased by 2 percent. This recalculated value shall be used to determine compliance with the relative accuracy specification. (40 CFR 60.46(d)(1)(ii)(B))
 - (iii) When F_o is greater than $1.03 F_{oa}$ and when the average difference d is positive, then E shall be decreased by that proportion over $1.03 F_{oa}$, *e.g.*, if F_o is $1.05 F_{oa}$, E shall be decreased by 2 percent. This recalculated value shall be used to determine compliance with the relative accuracy specification. (40 CFR 60.46(d)(1)(ii)(C))
- 2) For Method 5 or 5B of appendix A–3 of this part, Method 17 of appendix A–6 of this part may be used at facilities with or without wet FGD systems if the stack gas temperature at the sampling location does not exceed an average temperature of 160°C (320°F). The procedures of sections 8.1 and 11.1 of Method 5B of appendix A–3 of this part may be used with Method 17 of appendix A–6 of this part only if it is used after wet FGD systems. Method 17 of appendix A–6 of this part shall not be used after wet FGD systems if the effluent gas is saturated or laden with water droplets. (40 CFR 60.46(d)(2))
- 3) Particulate matter and SO_2 may be determined simultaneously with the Method 5 of appendix A of this part train provided that the following changes are made: (40 CFR 60.46(d)(3))
- (a) The filter and impinger apparatus in sections 2.1.5 and 2.1.6 of Method 8 of appendix A of this part is used in place of the condenser (section 2.1.7) of Method 5 of appendix A of this part. (40 CFR 60.46(d)(3)(i))
 - (b) All applicable procedures in Method 8 of appendix A of this part for the determination of SO_2 (including moisture) are used. (40 CFR 60.46(d)(3)(ii))

- 4) For Method 6 of appendix A of this part, Method 6C of appendix A of this part may be used. Method 6A of appendix A of this part may also be used whenever Methods 6 and 3B of appendix A of this part data are specified to determine the SO₂ emission rate, under the conditions in paragraph (d)(1) of 40 CFR 60.46. (40 CFR 60.46(d)(4))
- 5) For Method 7 of appendix A of this part, Method 7A, 7C, 7D, or 7E of appendix A of this part may be used. If Method 7C, 7D, or 7E of appendix A of this part is used, the sampling time for each run shall be at least 1 hour and the integrated sampling approach shall be used to determine the O₂ concentration (%O₂) for the emission rate correction factor. (40 CFR 60.46(d)(5))
- 6) For Method 3 of appendix A of this part, Method 3A or 3B of appendix A of this part may be used. (40 CFR 60.46(d)(6))
- 7) For Method 3B of appendix A of this part, Method 3A of appendix A of this part may be used. (40 CFR 60.46(d)(7))

Attachment C - Protocol Checklist for a Performance Test

A completed protocol should include the following information:

- 1. Facility name, location, and ID #;
- 2. Responsible Official and environmental contact names;
- 3. Permit numbers that are requiring the test to be conducted;
- 4. Test methods to be used (i.e. EPA Method 1, 2, 3, 4, and 5);
- 5. Alternative test methods or description of modifications to the test methods to be used;
- 6. Purpose of the test including equipment and pollutant to be tested; the purpose may be described in the permit that requires the test to be conducted or may be to show compliance with a federal regulation or emission standard;
- 7. Tentative test dates (These may change but the District will need final notice at least 10 days in advance of the actual test dates in order to arrange for observation.);
- 8. Maximum rated production capacity of the system;
- 9. Production-rate goal planned during the performance test for demonstration of compliance (if appropriate, based on limits);
- 10. Method to be used for determining rate of production during the performance test;
- 11. Method to be used for determining rate of production during subsequent operations of the process equipment to demonstrate compliance;
- 12. Description of normal operation cycles;
- 13. Discussion of operating conditions that tend to cause worse case emissions; it is especially important to clarify this if worst case emissions do not come from the maximum production rate;
- 14. Process flow diagram;
- 15. The type and manufacturer of the control equipment, if any;
- 16. The control equipment (baghouse, scrubber, condenser, etc.) parameter to be monitored and recorded during the performance test. Note that this data will be used to ensure representative operation during subsequent operations. These parameters can include pressure drops, flow rates, pH, and temperature. The values achieved during the test may be required during subsequent operations to describe what pressure drops, etcetera, are indicative of good operating performance; and
- 17. How quality assurance and accuracy of the data will be maintained, including:
 - Sample identification and chain-of-custody procedures
 - If audit samples are required for this test method, audit sample provider and number of audit samples to be used
- 18. Pipe, duct, stack, or flue diameter to be tested;
- 19. Distances from the testing sample ports to the nearest upstream and downstream flow disturbances such as bends, valves, constrictions, expansions, and exit points for outlet and additionally for inlet;
- 20. Determine number of traverse points to be tested for outlet and additionally for inlet if required using Appendix A-1 to 40 CFR Part 60;
 - Method 1 if stack diameter is >12"
 - Method 1a if stack diameter is greater than or equal to 4" and less than 12"
 - Alternate method of determination for <4"
 - If a sample location at least two stack or duct diameters downstream and half a diameter upstream from any flow disturbance is not available then an alternative procedure is available for determining the acceptability of a measurement location. This procedure described in Method 1, Section 11.5 allows for the determination of gas flow angles at the sampling points and comparison of the measured results with acceptability criteria.
- 21. The Stack Test Review fee shall be submitted with each stack test protocol.

Attachment D - NO_x RACT Plan - Amendment 1

1. The oxides of nitrogen (NO_x, expressed as NO₂) emission from each utility boiler shall not exceed the rate as specified below, based upon a rolling 30-day average:

 - Unit 1 0.47 lb/mmBtu of heat input
 - Unit 2 0.47 lb/mmBtu of heat input
 - Unit 3 0.52 lb/mmBtu of heat input
 - Unit 4 0.52 lb/mmBtu of heat input

2. The NO_x emission rate for each utility boiler shall be determined using the methods and procedures specified in NO_x RACT Plan Appendix A - Amendment 1, except that any reference to an annual average shall be read as a rolling 30-day average.

3. The Louisville Gas and Electric Company Mill Creek Generating Station (LG&E/MCGS) shall install, maintain, and operate a NO_x continuous emissions monitoring system (CEMS) for each utility boiler and shall keep records and submit reports and other notifications as specified in NO_x RACT Plan Appendix A - Amendment 1.

4. The LG&E/MCGS shall keep a record identifying all deviations from the requirements of this NO_x RACT Plan and shall submit to the District a written report of all deviations that occurred during the preceding calendar quarter. The report shall contain the following information:
 - A. The boiler number,
 - B. The beginning and ending date of the reporting period,
 - C. Identification of all periods during which a deviation occurred,
 - D. A description, including the magnitude, of the deviation,
 - E. If known, the cause of the deviation, and
 - F. A description of all corrective actions taken to abate the deviation.If no deviation occurred during the calendar quarter, the report shall contain a negative declaration. Each report shall be submitted within 30 days following the end of the calendar quarter.

5. In lieu of the requirements in this NO_x RACT Plan, the LG&E/MCGS may comply with alternative requirements regarding emission limitations, equipment operation, test methods, monitoring, recordkeeping, or reporting, provided the following conditions are met:
 - A. The alternative requirements are established and incorporated into an operating permit pursuant to a Title V Operating Permit issuance, renewal, or significant permit revision process as established in Regulation 2.16,
 - B. The alternative requirements are consistent with the streamlining procedures and guidelines set forth in section II.A. of *White Paper Number 2 for Improved Implementation of the Part 70 Operating Permits Program*, March 5, 1996, U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards. The overall effect of compliance with alternative requirements shall consider the effect on an intrinsic basis, such as pounds per million Btu of heat input.

However, alternative requirements that are developed based upon revisions to the applicable requirements contained in 40 CFR Part 60 or Part 75 shall be approvable pursuant to this NO_x RACT Plan Element,

- C. The U.S. Environmental Protection Agency (EPA) has not objected to the issuance, renewal, or revision of the Title V Operating Permit, and either
- D. If the public comment period preceded the EPA review period, then the District had transmitted any public comments concerning the alternative requirements to EPA with the proposed permit, or
- E. If the EPA and public comment periods ran concurrently, then the District had transmitted any public comments concerning the alternative requirements to EPA no later than 5 working days after the end of the public comment period.

The District's determination of approval of any alternative requirements is not binding on EPA. Noncompliance with any alternative requirement established pursuant to the Title V Operating Permit process constitutes a violation of this NO_x RACT Plan.

History: Approved 11-8-99; effective 1-1-00; amended a1/10-18-00 effective 1-1-01.

Appendix A to NO_x RACT Plan - Amendment 1 Requirements for NO_x CEMS

I. General Operating Requirements

- A. **Primary measurement requirements.** The LG&E/MCGS shall, for each utility boiler, install, certify, operate, and maintain, in accordance with the requirements of 40 CFR 75, an oxides of nitrogen (NO_x) continuous emission monitoring system (CEMS), consisting of a NO_x pollutant concentration monitor and an oxygen (O₂) or carbon dioxide (CO₂) diluent gas monitor, with an automated data acquisition and handling system for measuring and recording NO_x concentration (in parts per million [ppm]), O₂ or CO₂ concentration (in percent O₂ or CO₂) and NO_x emission rate (in lb/mmBtu of heat input) discharged to the atmosphere. Any reference in this Appendix to an annual average shall be read as a rolling 30-day average. The LG&E/MCGS shall account for total NO_x emissions, both nitrogen oxide (NO) and nitrogen dioxide (NO₂), either by monitoring for both NO and NO₂ or by monitoring for NO only and adjusting the emissions data to account for NO₂.
- B. **Primary equipment performance requirements.** The LG&E/MCGS shall ensure that each CEMS used to demonstrate compliance with the NO_x emission limit meets the equipment, installation, and performance specifications in 40 CFR 75 Appendix A, and is maintained according to the quality assurance and quality control procedures in 40 CFR 75 Appendix B. The NO_x emission rate for each utility boiler shall be recorded as lb/mmBtu of heat input.
- C. **Primary equipment hourly operating requirements.**

1. The LG&E/MCGS shall ensure that all CEMS are in operation and monitoring the emissions from the associated utility boiler at all times that the utility boiler combusts any fuel except during a period of any of the following:
 - a. Calibration, quality assurance, or preventive maintenance, any of which is performed pursuant to 40 CFR 75.21, 40 CFR 75 Appendix B, District regulations, District permit conditions, or this NO_x RACT Plan, or
 - b. Repair, backups of data from the data acquisition and handling system, or recertification, any of which is performed pursuant to 40 CFR 75.20.
2. The LG&E/MCGS shall ensure that the following requirements are met:
 - a. Each CEMS and component thereof is capable of completing a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute interval. The LG&E/MCGS shall reduce all volumetric flow, CO₂ concentration, O₂ concentration, NO_x concentration, and NO_x emission rate data collected by the monitors to hourly averages. Hourly averages shall be computed using at least one data point in each 15- minute quadrant of an hour during which the utility boiler combusted fuel during that quadrant of the hour. Notwithstanding this requirement, an hourly average may be computed from at least two data points separated by a minimum of 15 minutes (where the unit operates for more than one quadrant of the hour) if data are unavailable as a result of the performance of any activity specified in paragraph I.C.1. of this Appendix. The LG&E/MCGS shall use all valid measurements or data points collected during an hour to calculate the hourly averages. All data points collected during an hour shall be, to the extent practicable, evenly spaced over the hour.
 - b. Failure of a CO₂ or O₂ diluent concentration monitor, flow monitor, or NO_x pollutant concentration monitor to acquire the minimum number of data points for calculation of an hourly average shall result in the failure to obtain a valid hour of data and the loss of such component data for the entire hour. An hourly average NO_x emission rate in lb/mmBtu of heat input is valid only if the minimum number of data points are acquired by both the pollutant concentration monitor (NO_x) and the diluent monitor (CO₂ or O₂). If a valid hour of data is not obtained, the owner or operator shall estimate and record emissions, moisture, or flow data for the missing hour by means of the automated data acquisition and handling system, in accordance with the applicable procedure for missing data substitution in 40 CFR 75 Subpart D .

D. Optional backup monitor requirements. If the LG&E/MCGS chooses to use two or more CEMS, each of which is capable of monitoring the same stack or duct at a specific utility boiler, then the LG&E/MCGS shall designate one CEMS

as the primary monitoring system and shall record this designation in the monitoring plan. The LG&E/MCGS shall designate any other CEMS as a backup CEMS in the monitoring plan. Any other backup CEMS shall be designated as a redundant backup CEMS, non-redundant backup CEMS, or reference method CEMS, as described in 40 CFR 75.20(d). When the certified primary monitoring system is operating and not out-of-control as defined in 40 CFR 75.24, only data from the certified primary monitoring system shall be reported as valid, quality-assured data. Thus, data from a backup CEMS may be reported as valid, quality-assured data only when a backup CEMS is operating and not out-of-control as defined in 40 CFR 75.24 or in the applicable reference method in 40 CFR 60 Appendix A and when the certified primary monitoring system is not operating or is operating but out-of-control. A particular monitor may be designated both as a certified primary monitor for one unit and as a certified redundant backup monitor for another unit.

- E. Minimum measurement capability requirements.** Each CEMS and component thereof shall be capable of accurately measuring, recording, and reporting data, and shall not incur a full scale exceedance, except as provided in section 2.1.2.5 of 40 CFR 75 Appendix A.
- F.** The LG&E/MCGS shall not operate a utility boiler so as to discharge, or allow to be discharged, emissions of NO_x to the atmosphere without accounting for all such emissions in accordance with the methods and procedures specified in this Appendix.
- G.** The LG&E/MCGS shall not disrupt the CEMS, any portion thereof, or any other approved emission monitoring method, and thereby avoid monitoring and recording NO_x emissions discharged into the atmosphere, except for periods of recertification or periods when calibration, quality assurance testing, or maintenance is performed in accordance with the provisions of this Appendix.
- H.** The LG&E/MCGS shall not retire or permanently discontinue use of the CEMS, any component thereof, or any other approved emission monitoring system under this Appendix except under any one of the following circumstances:
 - 1. The LG&E/MCGS is monitoring NO_x emissions from the utility boiler with another certified monitoring system approved in accordance with the provisions of paragraph I.D. of this Appendix, or
 - 2. The LG&E/MCGS submits notification of the date of certification testing of a replacement monitoring system.
- I.** The quality assurance and quality control requirements in 40 CFR 75.21 that apply to NO_x pollutant concentration monitors and diluent gas monitors shall be met. A NO_x pollutant concentration monitor for determining NO_x emissions shall meet the same certification testing requirements, quality assurance requirements, and bias test requirements as those specified in 40 CFR 75 for an SO₂ pollutant concentration monitor.

- J. Moisture correction.** If a correction for the stack gas moisture content is needed to properly calculate the NO_x emission rate in lb/mmBtu of heat input (i.e., if the NO_x pollutant concentration monitor measures on a different moisture basis from the diluent monitor), LG&E/MCGS shall either report a fuel-specific default moisture value for each utility boiler operating hour, as provided in 40 CFR 75.11(b)(1), or shall install, operate, maintain, and quality assure a continuous moisture monitoring system, as defined in 40 CFR 75.11(b)(2). Notwithstanding this requirement, if Equation 19-3, 19-4 or 19-8 in Method 19 in Appendix A to 40 CFR Part 60 is used to measure NO_x emission rate, the following fuel-specific default moisture percentages shall be used in lieu of the default values specified in 40 CFR 75.11(b)(1): 5.0%, for anthracite coal; 8.0% for bituminous coal; 12.0% for sub-bituminous coal; 13.0% for lignite coal; and 15.0% for wood.

II. Specific Provisions for Monitoring NO_x Emission Rate (NO_x and diluent gas monitors)

- A.** The LG&E/MCGS shall meet the general operating requirements in 40 CFR 75.10 for a NO_x CEMS for each utility boiler. The diluent gas monitor in the NO_x CEMS may measure either O₂ or CO₂ concentration in the flue gases.
- B.** The LG&E/MCGS shall calculate hourly and rolling 30-day NO_x emission rates (in lb/mmBtu of heat input) by combining the NO_x concentration (in ppm), diluent concentration (in percent O₂ or CO₂), and percent moisture (if applicable) measurements according to the procedures in 40 CFR 75 Appendix F.

III. Monitoring plan

The LG&E/MCGS shall prepare and maintain a monitoring plan as specified in 40 CFR 75.53. The monitoring plan shall be submitted to the District no later than 45 days prior to the first scheduled certification test.

IV. Recordkeeping Provisions

- A.** The LG&E/MCGS shall maintain for each utility boiler a file of all measurements, data, reports, and other information required by this Appendix at the stationary source in a form suitable for inspection for at least 5 years from the date of each record. This file shall contain the following information:
1. The data and information required in paragraph IV.B. of this Appendix,
 2. The component data and information used to calculate values required in paragraph IV.B. of this Appendix,
 3. The current monitoring plan as specified in 40 CFR 75.53, and
 4. The quality control plan as described in 40 CFR 75 Appendix B.
- B. NO_x emission record provisions.** The LG&E/MCGS shall record hourly the following information as measured and reported from the certified primary

monitor, certified back-up or certified portable monitor, or other approved method of emissions determination for each utility boiler:

1. Date and hour,
2. Hourly average NO_x concentration (ppm, rounded to the nearest tenth),
3. Hourly average diluent gas concentration (percent O₂ or percent CO₂, rounded to the nearest tenth),
4. Hourly average NO_x emission rate (lb/mmBtu of heat input, rounded to nearest hundredth),
5. Hourly average NO_x emission rate (lb/mmBtu of heat input, rounded to nearest hundredth) adjusted for bias, if a bias adjustment factor is required by 40 CFR 75.24 (d),
6. Percent monitoring system data availability (recorded to the nearest tenth of a percent), calculated pursuant to 40 CFR 75.32,
7. Method of determination for hourly average NO_x emission rate using Codes 1-55 in 40 CFR 75.57 Table 4A, and
8. Unique code identifying emissions formula used to derive hourly average NO_x emission rate, as provided for in 40 CFR 75.53.

V. Certification, Quality Assurance, and Quality Control Record Provisions

- A.** For each NO_x pollutant concentration monitor and diluent gas monitor, the LG&E/MCGS shall record the following:
1. Results of all trial runs and certification tests and quality assurance activities and measurements (including all reference method field test sheets, charts, records of combined system responses, laboratory analyses, and example calculations) necessary to substantiate compliance with all relevant requirements of this Appendix,
 2. Bias test results as specified in 40 CFR 75, Appendix A, section 7.6.4,
 3. The appropriate bias adjustment factor as follows:
 - a. The value derived from Equations A-11 and A-12 in 40 CFR 75 Appendix A for any monitoring system or component that failed the bias test, or
 - b. A value of 1.0 for any monitoring system or component that passed the bias test, and
 4. The component/system identification code.
- B.** For each NO_x pollutant concentration monitor and diluent gas monitor, the LG&E/MCGS shall record the following for all daily and 7-day calibration error tests, including any follow-up tests after corrective action:
1. Instrument span and span scale,
 2. Date and hour,
 3. Reference value (i.e., calibration gas concentration or reference signal value, in ppm or other appropriate units),
 4. Observed value (monitor response during calibration, in ppm or other appropriate units), (flag if using alternative performance specification for low emitters or differential pressure monitors),

5. Percent calibration error (rounded to the nearest tenth of a percent),
 6. Calibration gas level,
 7. Test number and reason for test,
 8. For 7-day calibrations tests for certification or recertification, a certification from the cylinder gas vendor or CEMS vendor that calibration gases as defined in 40 CFR 72.2 and 40 CFR 75 Appendix A were used to conduct calibration error testing,
 9. Description of any adjustments, corrective actions, or maintenance following a test,
 10. For quality test for off-line calibration, whether the unit is off-line or on-line, and
 11. The component/system identification code.
- C.** For each NO_x pollutant concentration monitor and diluent gas monitor, the LG&E/MCGS shall record the following for the initial and all subsequent linearity checks, including any follow-up tests after corrective action:
1. Instrument span and span scale,
 2. Calibration gas level,
 3. Date, hour, and minute of each gas injection at each calibration gas level,
 4. Reference value (i.e., reference gas concentration for each gas injection at each calibration gas level, in ppm or other appropriate units),
 5. Observed value (monitor response to each reference gas injection at each calibration gas level, in ppm or other appropriate units),
 6. Mean of reference values and mean of measured values at each calibration gas level
 7. Linearity error at each of the reference gases concentrations (rounded to the nearest tenth of a percent), (flag if using alternative performance specification),
 8. Test number and reason for test (flag if aborted test),
 9. Description of any adjustments, corrective action, or maintenance prior to a passed test or following a failed test,
 10. The number of out-of-control hours, if any, following any tests, and
 11. The component/system identification code.
- D.** For each NO_x pollutant concentration monitor and diluent gas monitor, the LG&E/MCGS shall record the following information for the initial and all subsequent relative accuracy tests and test audits:
1. Reference method(s) used,
 2. Individual test run data from the relative accuracy test audit for the NO_x pollutant concentration monitor or diluent gas monitor, including:
 - a. Date, hour, and minute of beginning of test run,
 - b. Date, hour, and minute of end of test run,
 - c. Monitoring system identification code,
 - d. Test number and reason for test,
 - e. Operating load level (low, mid, high, or normal, as appropriate) and number of load levels comprising test,

- f. Normal load indicator for flow RATAs (except for peaking units),
 - g. Units of measure,
 - h. Run number,
 - i. Run data from CEMS being tested, in the appropriate units of measure,
 - j. Run data for reference method, in the appropriate units of measure,
 - k. Flag value (0, 1, or 9, as appropriate) indicating whether run has been used in calculating relative accuracy and bias values or whether the test was aborted prior to completion,
 - l. Average gross unit load (expressed as a total gross unit load rounded to the nearest MWe or as steam load rounded to the nearest thousand lb/hr), and
 - m. Flag to indicate whether an alternative performance specification has been used,
3. Calculations and tabulated results, as follows:
 - a. Arithmetic mean of the monitoring system measurement values, reference method values, and of their differences, as specified in Equation A-7 in 40 CFR 75 Appendix A,
 - b. Standard deviation, as specified in Equation A-8 in 40 CFR 75 Appendix A,
 - c. Confidence coefficient, as specified in Equation A-9 in 40 CFR 75 Appendix A,
 - d. Statistical “t” value used in calculations,
 - e. Relative accuracy test results, as specified in Equation A-10 in 40 CFR 75 Appendix A,
 - f. Bias test results as specified in section 7.6.4 in 40 CFR 75 Appendix A,
 - g. Bias adjustment factor from Equation A-12 in 40 CFR 75 Appendix A for any monitoring system or component that failed the bias test (except as otherwise provided in section 7.6.5 in 40 CFR 75 Appendix A) and 1.000 for any monitoring system or component that passed the bias test,
 - h. F-factor value(s) used to convert NO_x pollutant concentration and diluent gas (O₂ or CO₂) concentration measurements into NO_x emission rates (in lb/mmBtu),
 - i. The raw data and calculated results for any stratification tests performed in accordance with sections 6.5.6.1 through 6.5.6.3 in 40 CFR 75 Appendix A, and
 - j. For moisture monitoring systems, the coefficient “K” factor or other mathematical algorithm used to adjust the monitoring system with respect to the reference method,
 4. Description of any adjustment, corrective action, or maintenance prior to a passed test or following a failed or aborted test,
 5. For each run of each test using Method 7E or 3A in Appendix A of 40 CFR 60 to determine NO_x, CO₂, or O₂ concentration the following:
 - a. Pollutant or diluent gas being measured,

- b. Span of reference method analyzer,
- c. Type of reference method system (e.g., extractive or dilution type),
- d. Reference method dilution factor (dilution type systems, only),
- e. Reference gas concentration (low, mid, and high gas levels) used for the 3-point, pre-test analyzer calibration error test (or, for dilution type reference method systems, for the 3-point, pre-test system calibration error test) and for any subsequent recalibrations,
- f. Analyzer responses to the zero-, mid-, and high-level calibration gases during the 3-point pre-test analyzer (or system) calibration error test and during any subsequent recalibration(s),
- g. Analyzer calibration error at each gas level (zero, mid, and high) for the 3-point, pre-test analyzer (or system) calibration error test and for any subsequent recalibration(s) (percent of span value),
- h. Upscale gas concentration (mid or high gas level) used for each pre-run or post-run system bias check or, for dilution type reference method systems, for each pre-run or post-run system calibration error check,
- i. Analyzer response to the calibration gas for each pre-run or post-run system bias (or system calibration error) check,
- j. The arithmetic average of the analyzer responses to the zero-level gas, for each pair of pre- and post-run system bias (or system calibration error) checks,
- k. The arithmetic average of the analyzer responses to the upscale calibration gas, for each pair of pre- and post-run system bias (or system calibration error) checks,
- l. The results of each pre-run and each post-run system bias (or system calibration error) check using the zero-level gas (percentage of span value),
- m. The results of each pre-run and each post-run system bias (or system calibration error) check using the upscale calibration gas (percentage of span value),
- n. Calibration drift and zero drift of analyzer during each RATA run (percentage of span value),
- o. Moisture basis of the reference method analysis,
- p. Moisture content of stack gas, in percent, during each test run (if needed to convert to moisture basis of CEMS being tested),
- q. Unadjusted (raw) average pollutant or diluent gas concentration for each run,
- r. Average pollutant or diluent gas concentration for each run, corrected for calibration bias (or calibration error) and, if applicable, corrected for moisture,
- s. The F-factor used to convert reference method data to units of lb/mmBtu (if applicable)
- t. Date(s) of the latest analyzer interference test(s),
- u. Results of the latest analyzer interference test(s),
- v. Date of the latest NO₂ to NO conversion test (Method 7E only),

- w. Results of the latest NO₂ to NO conversion test (Method 7E only), and
 - x. For each calibration gas cylinder used during each RATA, record the cylinder gas vendor, cylinder number, expiration date, pollutant(s) in the cylinder, and
- 6. The number of out-of-control hours, if any, following any tests, and
 - 7. The component/system identification code.

VI. Notifications

- A.** The LG&E/MCGS or a designated representative shall submit notice to the District for the following purposes, as required by this Appendix:
 - 1. Initial certification and recertification test notifications. Written notification shall be submitted of initial certification tests, recertification tests, and revised test dates as specified in 40 CFR 75.20 for continuous emission monitoring systems, except for testing only of the data acquisition and handling system, and
 - 2. Notification of initial certification testing. Initial certification test notifications shall be submitted not later than 45 days prior to the first scheduled day of initial certification testing. Testing may be performed on a date other than that already provided in a notice under this subparagraph as long as notice of the new date is provided either in writing or by telephone or other means at least 7 days prior to the original scheduled test date or the revised test date, whichever is earlier.
- B.** For retesting following a loss of certification under 40 CFR 75.20(a)(5) or for recertification under 40 CFR 75.20(b), notice of testing shall be submitted either in writing or by telephone at least 7 days prior to the first scheduled day of testing, except that in emergency situations when testing is required following an uncontrollable failure of equipment that results in lost data, notice shall be sufficient if provided within 2 business days following the date when testing is scheduled. Testing may be performed on a date other than that already provided in a notice under this subparagraph as long as notice of the new date is provided by telephone or other means at least 2 business days prior to the original scheduled test date or the revised test date, whichever is earlier.
- C.** Notwithstanding the notice requirements of paragraph B. above, the LG&E/MCGS may elect to repeat a certification test immediately, without advance notification, whenever the LG&E/MCGS has determined during the certification testing that a test was failed or that a second test is necessary in order to attain a reduced relative accuracy test frequency.
- D.** Written notice shall be submitted, either by mail or facsimile, of the date of periodic relative accuracy testing performed under 40 CFR Part 75 Appendix B no later than 21 days prior to the first scheduled day of testing. Testing may be performed on a date other than that already provided in a notice under this

subparagraph as long as notice of the new date is provided either in writing or by telephone or other means acceptable to the District, and the notice is provided as soon as practicable after the new testing date is known, but no later than 24 hours in advance of the new date of testing.

- E. Notwithstanding the notice requirements under paragraph D. above, the LG&E/MCGS may elect to repeat a periodic relative accuracy test immediately, without additional notification whenever the LG&E/MCGS has determined that a test was failed, or that a second test is necessary in order to attain a reduced relative accuracy test frequency. If an observer from the District is present when a test is rescheduled, the observer may waive all notification requirements under paragraph D. above for the rescheduled test.

VII. Quarterly reports

- A. The LG&E/MCGS shall, within 30 days following the end of each calendar quarter, submit a report to the District that includes the following data and information for each utility boiler:
 - 1. The information and hourly data required in this Appendix, including all emissions and quality assurance data, and
 - 2. Average NO_x emission rate (lb/mmBtu of heat input, rounded to the nearest hundredth) during the rolling 30-day averaging periods.
- B. The LG&E/MCGS shall submit a certification in support of each quarterly emissions monitoring report. This certification shall indicate whether the monitoring data submitted were recorded in accordance with the requirements of this Appendix. In the event of any missing data periods, this certification shall include a description of the measures taken to minimize or eliminate the causes for the missing data periods.

Attachment E - 40 CFR 75, Subpart G

The owner or operator shall comply with the following requirements unless there are more current promulgated regulations:

Specific Conditions**S1. Reporting Requirements for Continuous Emission Monitoring****a. General provisions (40 CFR 75.60)**

- i. If requested in writing (or by electronic mail) by the applicable EPA Regional Office, appropriate State, and/or appropriate local air pollution control agency, the designated representative shall submit a hardcopy RATA report within 45 days after completing a required semiannual or annual RATA according to section 2.3.1 of appendix B to this part (for standard RATA frequencies and reduced RATA frequencies), or within 15 days of receiving the request, whichever is later. The designated representative shall report the hardcopy information required by 40 CFR 75.59(a)(9), as specified in Condition S1.a.ii., to the applicable EPA Regional Office, appropriate State, and/or appropriate local air pollution control agency that requested the RATA report. (40 CFR 75.60(b)(6))
- ii. When hardcopy relative accuracy test reports, certification reports, recertification reports, or semiannual or annual reports for gas or flow rate CEMS, the reports shall include, at a minimum, the following elements (as applicable to the type(s) of test(s) performed): (40 CFR 75.59(a)(9))
 - 1) Summarized test results. (40 CFR 75.59(a)(9)(i))
 - 2) DAHS printouts of the CEMS data generated during the calibration error, linearity, cycle time, and relative accuracy tests. (40 CFR 75.59(a)(9)(ii))
 - 3) For pollutant concentration monitor or diluent monitor relative accuracy tests at normal operating load: (40 CFR 75.59(a)(9)(iii))
 - (a) The raw reference method data from each run, i.e., the data under paragraph (a)(7)(iv)(Q) of 40 CFR 75.59 (usually in the form of a computerized printout, showing a series of one-minute readings and the run average); (40 CFR 75.59(a)(9)(iii)(A))
 - (b) The raw data and results for all required pre-test, post-test, pre-run and post-run quality assurance checks (*i.e.*, calibration gas injections) of the reference method

- analyzers, i.e., the data under paragraphs (a)(7)(iv)(E) through (a)(7)(iv)(N) of 40 CFR 75.59 (supporting information for RATA using Method 6C, 7E, or 3A); (40 CFR 75.59(a)(9)(iii)(B))
- (c) The raw data and results for any moisture measurements made during the relative accuracy testing, i.e., the data under paragraphs (a)(7)(v)(A) through (a)(7)(v)(O) of 40 CFR 75.59 (supporting information for RATA using Method 4); and (40 CFR 75.59(a)(9)(iii)(C))
 - (d) Tabulated, final, corrected reference method run data (*i.e.*, the actual values used in the relative accuracy calculations), along with the equations used to convert the raw data to the final values and example calculations to demonstrate how the test data were reduced. (40 CFR 75.59(a)(9)(iii)(D))
- 4) For relative accuracy tests for flow monitors: (40 CFR 75.59(a)(9)(iv))
- (a) The raw flow rate reference method data, from Reference Method 2 (or its allowable alternatives) under appendix A to part 60 of this chapter, including auxiliary moisture data (often in the form of handwritten data sheets), i.e., the data under paragraphs (a)(7)(ii)(A) through (a)(7)(ii)(T), paragraphs (a)(7)(iii)(A) through (a)(7)(iii)(M), and, if applicable, paragraphs (a)(7)(v)(A) through (a)(7)(v)(O) of 40 CFR 75.59 (supporting information for RATA using Method 2 and Method 4) ; and (40 CFR 75.59(a)(9)(iv)(A))
 - (b) The tabulated, final volumetric flow rate values used in the relative accuracy calculations (determined from the flow rate reference method data and other necessary measurements, such as moisture, stack temperature and pressure), along with the equations used to convert the raw data to the final values and example calculations to demonstrate how the test data were reduced. (40 CFR 75.59(a)(9)(iv)(B))
- 5) Calibration gas certificates for the gases used in the linearity, calibration error, and cycle time tests and for the calibration gases used to quality assure the gas monitor reference method data during the relative accuracy test audit. (40 CFR 75.59(a)(9)(v))
- 6) Laboratory calibrations of the source sampling equipment. (40 CFR 75.59(a)(9)(vi))

- 7) A copy of the test protocol used for the CEMS certifications or recertifications, including narrative that explains any testing abnormalities, problematic sampling, and analytical conditions that required a change to the test protocol, and/or solutions to technical problems encountered during the testing program. (40 CFR 75.59(a)(9)(vii))
- 8) Diagrams illustrating test locations and sample point locations (to verify that locations are consistent with information in the monitoring plan). Include a discussion of any special traversing or measurement scheme. The discussion shall also confirm that sample points satisfy applicable acceptance criteria. (40 CFR 75.59(a)(9)(viii))
- 9) Names of key personnel involved in the test program, including test team members, plant contacts, agency representatives and test observers on site. (40 CFR 75.59(a)(9)(vix))
- 10) For testing involving use of EPA Protocol gases, the owner or operator shall record in electronic and hardcopy format the following information, as applicable: (40 CFR 75.59(a)(9)(x))
 - (a) On and after September 26, 2011, for each gas monitor, for both low and high measurement ranges, record the following information for the mid-level or high-level EPA Protocol gas (as applicable) that is used for daily calibration error tests, and the low-, mid-, and high-level gases used for quarterly linearity checks. For O₂, if purified air is used as the high-level gas for daily calibrations or linearity checks, record the following information for the low- and mid-level EPA Protocol gas used for linearity checks, instead: (40 CFR 75.59(a)(9)(x)(A))
 - (i) Gas level code; (40 CFR 75.59(a)(9)(x)(A)(1))
 - (ii) A code for the type of EPA Protocol gas used; (40 CFR 75.59(a)(9)(x)(A)(2))
 - (iii) The PGVP vendor ID issued by EPA for the EPA Protocol gas production site that supplied the EPA Protocol gas cylinder; (40 CFR 75.59(a)(9)(x)(A)(3))
 - (iv) The expiration date for the EPA Protocol gas cylinder; and (40 CFR 75.59(a)(9)(x)(A)(4))
 - (v) The cylinder number. (40 CFR 75.59(a)(9)(x)(A)(5))

- (b) On and after September 26, 2011, for each usage of Reference Method 3A in appendix A-2 to part 60 of this chapter, or Method 6C or 7E in appendix A-4 to part 60 of this chapter performed using EPA Protocol gas for the certification, recertification, routine quality assurance or diagnostic testing (reportable diagnostics, only) of a Part 75 monitoring system, record the information required by paragraphs (a)(9)(x)(A)(I) through (5) of 40 CFR 75.59. See Condition S1.a.ii.(10)(a){(i) through (v)}. (40 CFR 75.59(a)(9)(x)(B))
- 11) On and after March 27, 2012, for all RATAs performed pursuant to 40 CFR 75.74(c)(2)(ii), section 6.5 of appendix A to this part and section 2.3.1 of appendix B to this part, and for all NO_x emission testing performed pursuant to section 2.1 of appendix E to this part, or 40 CFR 75.19(c)(1)(iv), the owner or operator shall record the following information as provided by the AETB: (40 CFR 75.59(a)(9)(xi))
 - (a) The name, telephone number and e-mail address of the Air Emission Testing Body; (40 CFR 75.59(a)(9)(xi)(A))
 - (b) The name of each on-site Qualified Individual, as defined in 40 CFR 72.2 of this chapter; (40 CFR 75.59(a)(9)(xi)(B))
 - (c) For the reference method(s) that were performed, the date(s) that each on-site Qualified Individual took and passed the relevant qualification exam(s) required by ASTM D7036-04 (incorporated by reference, *see* 40 CFR 75.6); and (40 CFR 75.59(a)(9)(xi)(C))
 - (d) The name and e-mail address of each qualification exam provider. (40 CFR 75.59(a)(9)(xi)(D))
- b. **Notifications** (40 CFR 75.61)
 - i. *Initial certification and recertification test notifications.* The owner or operator or designated representative for an affected unit shall submit written notification of initial certification tests and revised test dates as specified in 75.20 (Initial certification and recertification procedures) for continuous emission monitoring systems, for alternative monitoring systems under subpart E of this part, or for excepted monitoring systems under appendix E to this part, except as provided in paragraphs (a)(1)(iii) and (a)(1)(iv) of 40 CFR 75.61. (40 CFR 75.61(a)(1))

- 1) Notification of initial certification testing and full recertification. Initial certification test notifications and notifications of full recertification testing under 40 CFR 75.20(b)(2) shall be submitted not later than 21 days prior to the first scheduled day of certification or recertification testing. In emergency situations when full recertification testing is required following an uncontrollable failure of equipment that results in lost data, notice shall be sufficient if provided within 2 business days following the date when testing is scheduled. Testing may be performed on a date other than that already provided in a notice under this subparagraph as long as notice of the new date is provided either in writing or by telephone or other means at least 7 days prior to the original scheduled test date or the revised test date, whichever is earlier. (40 CFR 75.61(a)(1)(i))
 - 2) Notification of certification retesting, and partial recertification testing. For retesting required following a loss of certification under 40 CFR 75.20(a)(5) or for partial recertification testing required under 40 CFR 75.20(b)(2), notice of the date of any required RATA testing or any required retesting under section 2.3 in appendix E to this part shall be submitted either in writing or by telephone at least 7 days prior to the first scheduled day of testing; except that in emergency situations when testing is required following an uncontrollable failure of equipment that results in lost data, notice shall be sufficient if provided within 2 business days following the date when testing is scheduled. Testing may be performed on a date other than that already provided in a notice under this subparagraph as long as notice of the new date is provided by telephone or other means at least 2 business days prior to the original scheduled test date or the revised test date, whichever is earlier. (40 CFR 75.61(a)(1)(ii))
 - 3) Repeat of testing without notice. Notwithstanding the above notice requirements, the owner or operator may elect to repeat a certification or recertification test immediately, without advance notification, whenever the owner or operator has determined during the certification or recertification testing that a test was failed or must be aborted, or that a second test is necessary in order to attain a reduced relative accuracy test frequency. (40 CFR 75.61(a)(1)(iii))
- ii. *New unit, newly affected unit, new stack, or new flue gas desulfurization system operation notification.* The designated representative for an affected unit shall submit written notification: For a new unit or a newly affected unit, of the planned date when a new unit or newly affected unit

will commence commercial operation, or becomes affected, or, for new stack or flue gas desulfurization system, of the planned date when a new stack or flue gas desulfurization system will be completed and emissions will first exit to the atmosphere. (40 CFR75.61(a)(2))

- 1) Notification of the planned date shall be submitted not later than 45 days prior to the date the unit commences commercial operation or becomes affected, or not later than 45 days prior to the date when a new stack or flue gas desulfurization system exhausts emissions to the atmosphere. (40 CFR75.61(a)(2)(i))
- 2) If the date when the unit commences commercial operation or becomes affected, or the date when the new stack or flue gas desulfurization system exhausts emissions to the atmosphere, whichever is applicable, changes from the planned date, a notification of the actual date shall be submitted not later than 7 days following: The date the unit commences commercial operation or becomes affected, or the date when a new stack or flue gas desulfurization system exhausts emissions to the atmosphere. (40 CFR75.61(a)(2)(ii))

iii. *Unit shutdown and recommencement of commercial operation.* For an affected unit that will be shut down on the relevant compliance date specified in 40 CFR 75.4 or in a State or Federal pollutant mass emissions reduction program that adopts the monitoring and reporting requirements of this part, if the owner or operator is relying on the provisions in 40 CFR 75.4(d) to postpone certification testing, the designated representative for the unit shall submit notification of unit shutdown and recommencement of commercial operation as follows: (40 CFR75.61(a)(3))

- 1) For planned unit shutdowns (e.g., extended maintenance outages), written notification of the planned shutdown date shall be provided at least 21 days prior to the applicable compliance date, and written notification of the planned date of recommencement of commercial operation shall be provided at least 21 days in advance of unit restart. If the actual shutdown date or the actual date of recommencement of commercial operation differs from the planned date, written notice of the actual date shall be submitted no later than 7 days following the actual date of shutdown or of recommencement of commercial operation, as applicable; (40 CFR75.61(a)(3)(i))
- 2) For unplanned unit shutdowns (e.g., forced outages), written notification of the actual shutdown date shall be provided no more than 7 days after the shutdown, and written notification of the planned date of recommencement of commercial operation shall be

provided at least 21 days in advance of unit restart. If the actual date of recommencement of commercial operation differs from the expected date, written notice of the actual date shall be submitted no later than 7 days following the actual date of recommencement of commercial operation. (40 CFR75.61(a)(3)(ii))

- iv. *Periodic relative accuracy test audits.* The owner or operator or designated representative of an affected unit shall submit written notice of the date of periodic relative accuracy testing performed under section 2.3.1 of appendix B to this part, no later than 21 days prior to the first scheduled day of testing. Testing may be performed on a date other than that already provided in a notice under this subparagraph as long as notice of the new date is provided either in writing or by telephone or other means acceptable to the respective State agency or office of EPA, and the notice is provided as soon as practicable after the new testing date is known, but no later than twenty-four (24) hours in advance of the new date of testing. (40 CFR75.61(a)(5))
 - 1) Written notification under paragraph (a) (5) of 40 CFR 75.61 may be provided either by mail or by facsimile. In addition, written notification may be provided by electronic mail, provided that the respective State agency or office of EPA agrees that this is an acceptable form of notification. (40 CFR75.61(a)(5)(i))
 - 2) Notwithstanding the notice requirements under paragraph (a)(5) of 40 CFR 75.61, the owner or operator may elect to repeat a periodic relative accuracy test, appendix E retest, or low mass emissions unit retest immediately, without additional notification whenever the owner or operator has determined that a test was failed, or that a second test is necessary in order to attain a reduced relative accuracy test frequency. (40 CFR75.61(a)(5)(ii))
 - v. *Certification deadline date for new or newly affected units.* The designated representative of a new or newly affected unit shall provide notification of the date on which the relevant deadline for initial certification is reached, either as provided in 75.4(b) or 75.4(c), or as specified in a State or Federal SO₂ or NO_x mass emission reduction program that incorporates by reference, or otherwise adopts, the monitoring, recordkeeping, and reporting requirements of subpart F, G, or H of this part. The notification shall be submitted no later than 7 calendar days after the applicable certification deadline is reached. (40 CFR75.61(a)(8))
- c. **Monitoring plan submittals** (40 CFR 75.62)
- i. Submission (40 CFR 75.62(a))

- 1) *Electronic.* Using the format specified in paragraph (c) of 40 CFR 75.62, the designated representative for an affected unit shall submit a complete, electronic, up-to-date monitoring plan file (except for hardcopy portions identified in paragraph (a)(2) of 40 CFR 75.62) to the Administrator as follows: no later than 21 days prior to the initial certification tests; at the time of each certification or recertification application submission; and (prior to or concurrent with) the submittal of the electronic quarterly report for a reporting quarter where an update of the electronic monitoring plan information is required, either under 40 CFR 75.53(b) or elsewhere in this part. (40 CFR 75.62(a)(1))
 - 2) *Hardcopy.* The designated representative shall submit all of the hardcopy information required under 40 CFR 75.53 to the appropriate EPA Regional Office and the appropriate State and/or local air pollution control agency prior to initial certification. Thereafter, the designated representative shall submit hardcopy information only if that portion of the monitoring plan is revised. The designated representative shall submit the required hardcopy information as follows: no later than 21 days prior to the initial certification test; with any certification or recertification application, if a hardcopy monitoring plan change is associated with the certification or recertification event; and within 30 days of any other event with which a hardcopy monitoring plan change is associated, pursuant to 40 CFR 75.53(b). Electronic submittal of all monitoring plan information, including hardcopy portions, is permissible provided that a paper copy of the hardcopy portions can be furnished upon request. (40 CFR 75.62(a)(2))
- ii. Contents. Monitoring plans shall contain the information specified in 40 CFR 75.53 of this part (Requirements of Monitoring Plan for CEMS). See Condition S1.c.iii. (40 CFR 75.62(b))
 - iii. Monitoring plan (40 CFR 75.53)
 - 1) General provisions (40 CFR 75.53(a))
 - (a) On and after January 1, 2009, the owner or operator shall meet the requirements of paragraphs (a), (b), (g), and (h) of 40 CFR 75.53 only. In addition, the provisions in paragraphs (g) and (h) of 40 CFR 75.53 that support a regulatory option provided in another section of this part must be followed if the regulatory option is used prior to January 1, 2009. (40 CFR 75.53(a)(1))

- (b) The owner or operator of an affected unit shall prepare and maintain a monitoring plan. Except as provided in paragraphs (f) or (h) of 40 CFR 75.53 (as applicable), a monitoring plan shall contain sufficient information on the continuous emission or opacity monitoring systems, excepted methodology under 40 CFR 75.19 (Optional SO₂, NO_x, and CO₂ emissions calculation for low mass emissions units), or excepted monitoring systems under appendix D or E to this part and the use of data derived from these systems to demonstrate that all unit SO₂ emissions, NO_x emissions, CO₂ emissions, and opacity are monitored and reported. (40 CFR 75.53(a)(2))
- 2) Whenever the owner or operator makes a replacement, modification, or change in the certified CEMS, continuous opacity monitoring system, excepted methodology under 40 CFR 75.19, excepted monitoring system under appendix D or E to this part, or alternative monitoring system under subpart E of this part, including a change in the automated data acquisition and handling system or in the flue gas handling system, that affects information reported in the monitoring plan (e.g., a change to a serial number for a component of a monitoring system), then the owner or operator shall update the monitoring plan, by the applicable deadline specified in 40 CFR 75.62 (Monitoring plan submittals) or elsewhere in this part. (40 CFR 75.53(b))
- 3) Contents of the monitoring plan (40 CFR 75.53(g))

The requirements of paragraphs (g) and (h) of this section shall be met on and after January 1, 2009. Notwithstanding this requirement, the provisions of paragraphs (g) and (h) of 40 CFR 75.53 may be implemented prior to January 1, 2009, as follows. Each monitoring plan shall contain the information in paragraph (g)(1) of 40 CFR 75.53 in electronic format and the information in paragraph (g)(2) of 40 CFR 75.53 in hardcopy format. Electronic storage of all monitoring plan information, including the hardcopy portions, is permissible provided that a paper copy of the information can be furnished upon request for audit purposes.

- (a) Electronic (40 CFR 75.53(g)(1))
- (i) The facility ORISPL number developed by the Department of Energy and used in the National Allowance Data Base (or equivalent facility ID number assigned by EPA, if the facility does not have an ORISPL number). Also provide the

following information for each unit and (as applicable) for each common stacks and/or pipe, and each multiple stack and/or pipe involved in the monitoring plan: (40 CFR 75.53(g)(1)(i))

- (A) A representation of the exhaust configuration for the units in the monitoring plan. On and after April 27, 2011, provide the activation date and deactivation date (if applicable) of the configuration. Provide the ID number of each unit and assign a unique ID number to each common stack, common pipe multiple stack and/or multiple pipe associated with the unit(s) represented in the monitoring plan. For common and multiple stacks and/or pipes, provide the activation date and deactivation date (if applicable) of each stack and/or pipe; (40 CFR 75.53(g)(1)(i)(A))
- (B) Identification of the monitoring system location(s) (e.g., at the unit-level, on the common stack, at each multiple stack, etc.). Provide an indicator (“flag”) if the monitoring location is at a bypass stack or in the ductwork (breeching); (40 CFR 75.53(g)(1)(i)(B))
- (C) The stack exit height (ft) above ground level and ground level elevation above sea level, and the inside cross-sectional area (ft²) at the flue exit and at the flow monitoring location (for units with flow monitors, only). Also use appropriate codes to indicate the material(s) of construction and the shape(s) of the stack or duct cross-section(s) at the flue exit and (if applicable) at the flow monitor location. On and after April 27, 2011, provide the activation date and deactivation date (if applicable) for the information in this paragraph (g)(1)(i)(C); (40 CFR 75.53(g)(1)(i)(C))
- (D) The type(s) of fuel(s) fired by each unit. Indicate the start and (if applicable) end date of combustion for each type of fuel, and

whether the fuel is the primary, secondary, emergency, or startup fuel; (40 CFR 75.53(g)(1)(i)(D))

- (E) The type(s) of emission controls that are used to reduce SO₂, NO_X, and particulate emissions from each unit. Also provide the installation date, optimization date, and retirement date (if applicable) of the emission controls, and indicate whether the controls are an original installation; (40 CFR 75.53(g)(1)(i)(E))
 - (F) Maximum hourly heat input capacity of each unit. On and after April 27, 2011, provide the activation date and deactivation date (if applicable) for this parameter; and (40 CFR 75.53(g)(1)(i)(F))
 - (G) A non-load based unit indicator (if applicable) for units that do not produce electrical or thermal output. (40 CFR 75.53(g)(1)(i)(G))
- (ii) For each monitored parameter (e.g., SO₂, NO_X, flow, etc.) at each monitoring location, specify the monitoring methodology and the missing data approach for the parameter. If the unmonitored bypass stack approach is used for a particular parameter, indicate this by means of an appropriate code. Provide the activation date/hour, and deactivation date/hour (if applicable) for each monitoring methodology and each missing data approach. (40 CFR 75.53(g)(1)(ii))
 - (iii) For each required continuous emission monitoring system, each fuel flowmeter system, and each continuous opacity monitoring system, identify and describe the major monitoring components in the monitoring system (e.g., gas analyzer, flow monitor, opacity monitor, moisture sensor, fuel flowmeter, DAHS software, etc.). Other important components in the system (e.g., sample probe, PLC, data logger, etc.) may also be represented in the monitoring plan, if necessary. Provide the following specific information about each component and monitoring

system: (40 CFR 75.53(g)(1)(iii))

- (A) For each required monitoring system: (40 CFR 75.53(g)(1)(iii)(A))
 - (I) Assign a unique, 3-character alphanumeric identification code to the system; (40 CFR 75.53(g)(1)(iii)(A)(1))
 - (II) Indicate the parameter monitored by the system; (40 CFR 75.53(g)(1)(iii)(A)(2))
 - (III) Designate the system as a primary, redundant backup, non-redundant backup, data backup, or reference method backup system, as provided in 40 CFR 75.10(e) (Optional backup monitor requirements); and (40 CFR 75.53(g)(1)(iii)(A)(3))
 - (IV) Indicate the system activation date/hour and deactivation date/hour (as applicable). (40 CFR 75.53(g)(1)(iii)(A)(4))
- (B) For each component of each monitoring system represented in the monitoring plan: (40 CFR 75.53(g)(1)(iii)(B))
 - (I) Assign a unique, 3-character alphanumeric identification code to the component; (40 CFR 75.53(g)(1)(iii)(B)(1))
 - (II) Indicate the manufacturer, model and serial number; (40 CFR 75.53(g)(1)(iii)(B)(3))
 - (III) Designate the component type; (40 CFR 75.53(g)(1)(iii)(B)(3))
 - (IV) For dual-span applications, indicate whether the analyzer component ID represents a high measurement scale,

- a low scale, or a dual range; (40 CFR 75.53(g)(1)(iii)(B)(4))
- (V) For gas analyzers, indicate the moisture basis of measurement; (40 CFR 75.53(g)(1)(iii)(B)(5))
 - (VI) Indicate the method of sample acquisition or operation, (e.g., extractive pollutant concentration monitor or thermal flow monitor); and (40 CFR 75.53(g)(1)(iii)(B)(6))
 - (VII) Indicate the component activation date/hour and deactivation date/hour (as applicable). (40 CFR 75.53(g)(1)(iii)(B)(7))
- (iv) Explicit formulas, using the component and system identification codes for the primary monitoring system, and containing all constants and factors required to derive the required mass emissions, emission rates, heat input rates, etc. from the hourly data recorded by the monitoring systems. Formulas using the system and component ID codes for backup monitoring systems are required only if different formulas for the same parameter are used for the primary and backup monitoring systems (e.g., if the primary system measures pollutant concentration on a different moisture basis from the backup system). Provide the equation number or other appropriate code for each emissions formula (e.g., use code F-1 if Equation F-1 in appendix F to this part is used to calculate SO₂ mass emissions). Also identify each emissions formula with a unique three character alphanumeric code. The formula effective start date/hour and inactivation date/hour (as applicable) shall be included for each formula. The owner or operator of a unit for which the optional low mass emissions excepted methodology in 40 CFR 75.19 is being used is not required to report such formulas. (40 CFR 75.53(g)(1)(iv))
- (v) For each parameter monitored with CEMS, provide the following information: (40 CFR 75.53(g)(1)(v))

- (A) Measurement scale (high or low); (40 CFR 75.53(g)(1)(v)(A))
 - (B) Maximum potential value (and method of calculation). If NO_x emission rate in lb/mmBtu is monitored, calculate and provide the maximum potential NO_x emission rate in addition to the maximum potential NO_x concentration; (40 CFR 75.53(g)(1)(v)(B))
 - (C) Maximum expected value (if applicable) and method of calculation; (40 CFR 75.53(g)(1)(v)(C))
 - (D) Span value(s) and full-scale measurement range(s); (40 CFR 75.53(g)(1)(v)(D))
 - (E) Daily calibration units of measure; (40 CFR 75.53(g)(1)(v)(E))
 - (F) Effective date/hour, and (if applicable) inactivation date/hour of each span value. On and after April 27, 2011, provide the activation date and deactivation date (if applicable) for the measurement scale and dual span information in paragraphs (g)(1)(v)(A), (g)(1)(v)(G), and (g)(1)(v)(H) of 40 CFR 75.53; (40 CFR 75.53(g)(1)(v)(F))
 - (G) An indication of whether dual spans are required. If two span values are required, then, on and after April 27, 2011, indicate whether an autoranging analyzer is used to represent the two measurement scales; and (40 CFR 75.53(g)(1)(v)(G))
 - (H) The default high range value (if applicable) and the maximum allowable low-range value for this option. (40 CFR 75.53(g)(1)(v)(H))
- (vi) If the monitoring system or excepted methodology provides for the use of a constant, assumed, or default value for a parameter under specific

circumstances, then include the following information for each such value for each parameter: (40 CFR 75.53(g)(1)(vi))

- (A) Identification of the parameter; (40 CFR 75.53(g)(1)(vi)(A))
 - (B) Default, maximum, minimum, or constant value, and units of measure for the value; (40 CFR 75.53(g)(1)(vi)(B))
 - (C) Purpose of the value; (40 CFR 75.53(g)(1)(vi)(C))
 - (D) Indicator of use, i.e., during controlled hours, uncontrolled hours, or all operating hours; (40 CFR 75.53(g)(1)(vi)(D))
 - (E) Type of fuel; (40 CFR 75.53(g)(1)(vi)(E))
 - (F) Source of the value; (40 CFR 75.53(g)(1)(vi)(F))
 - (G) Value effective date and hour; (40 CFR 75.53(g)(1)(vi)(G))
 - (H) Date and hour that the value is no longer effective (if applicable); (40 CFR 75.53(g)(1)(vi)(H))
 - (I) For units using the excepted methodology under 40 CFR 75.19, the applicable SO₂ emission factor; and (40 CFR 75.53(g)(1)(vi)(I))
 - (J) On and after April 27, 2011, group identification code. (40 CFR 75.53(g)(1)(vi)(J))
- (vii) Unless otherwise specified in section 6.5.2.1 of appendix A to this part, for each unit or common stacks on which hardware CEMS are installed: (40 CFR 75.53(g)(1)(vii))
- (A) Maximum hourly gross load (in MW, rounded to the nearest MW, or steam load in

1000 lb/hr (i.e., klb/hr), rounded to the nearest klb/hr, or thermal output in mmBtu/hr, rounded to the nearest mmBtu/hr), for units that produce electrical or thermal output; (40 CFR 75.53(g)(1)(vii)(A))

- (B) The upper and lower boundaries of the range of operation (as defined in section 6.5.2.1 of appendix A to this part), expressed in megawatts, thousands of lb/hr of steam, mmBtu/hr of thermal output, or ft/sec (as applicable); (40 CFR 75.53(g)(1)(vii)(B))
 - (C) Except for peaking units, identify the most frequently and second most frequently used load (or operating) levels (i.e., low, mid, or high) in accordance with section 6.5.2.1 of appendix A to this part, expressed in megawatts, thousands of lb/hr of steam, mmBtu/hr of thermal output, or ft/sec (as applicable); (40 CFR 75.53(g)(1)(vii)(C))
 - (D) Except for peaking units, an indicator of whether the second most frequently used load (or operating) level is designated as normal in section 6.5.2.1 of appendix A to this part; (40 CFR 75.53(g)(1)(vii)(D))
 - (E) The date of the data analysis used to determine the normal load (or operating) level(s) and the two most frequently-used load (or operating) levels (as applicable); and (40 CFR 75.53(g)(1)(vii)(E))
 - (F) Activation and deactivation dates and hours, when the maximum hourly gross load, boundaries of the range of operation, normal load (or operating) level(s) or two most frequently-used load (or operating) levels change and are updated. (40 CFR 75.53(g)(1)(vii)(F))
- (b) Hardcopy (40 CFR 75.53(g)(2))
- (i) Information, including (as applicable):

Identification of the test strategy; protocol for the relative accuracy test audit; other relevant test information; calibration gas levels (percent of span) for the calibration error test and linearity check; calculations for determining maximum potential concentration, maximum expected concentration (if applicable), maximum potential flow rate, maximum potential NO_x emission rate, and span; and apportionment strategies under 40 CFR 75.10 through 75.18. (40 CFR 75.53(g)(2)(i))

- (ii) Description of site locations for each monitoring component in the continuous emission or opacity monitoring systems, including schematic diagrams and engineering drawings specified in paragraphs (e)(2)(iv) and (e)(2)(v) of 40 CFR 75.53 and any other documentation that demonstrates each monitor location meets the appropriate siting criteria. (40 CFR 75.53(g)(2)(ii))
- (iii) A data flow diagram denoting the complete information handling path from output signals of CEMS components to final reports. (40 CFR 75.53(g)(2)(iii))
- (iv) For units monitored by a continuous emission or opacity monitoring system, a schematic diagram identifying entire gas handling system from boiler to stack for all affected units, using identification numbers for units, monitoring systems and components, and stacks corresponding to the identification numbers provided in paragraphs (g)(1)(i) and (g)(1)(iii) of 40 CFR 75.53. The schematic diagram must depict stack height and the height of any monitor locations. Comprehensive and/or separate schematic diagrams shall be used to describe groups of units using a common stack. (40 CFR 75.53(g)(2)(iv))
- (v) For units monitored by a continuous emission or opacity monitoring system, stack and duct engineering diagrams showing the dimensions and location of fans, turning vanes, air preheaters, monitor components, probes, reference method sampling ports, and other equipment that affects the monitoring system location, performance, or quality

control checks. (40 CFR 75.53(g)(2)(v))

d. **Initial certification or recertification application** (40 CFR 75.63)

i. Submission (40 CFR 75.63(a))

The designated representative for an affected unit or a combustion source shall submit applications and reports as follows:

- 1) Recertifications and diagnostic testing (40 CFR 75.63(a)(2))
 - (a) Within 45 days after completing all recertification tests under 40 CFR 75.20(b), submit to the Administrator the electronic information required by paragraph (b)(1) of 40 CFR 75.63. Except for subpart E applications for alternative monitoring systems or unless specifically requested by the Administrator, do not submit a hardcopy of the test data and results to the Administrator. (40 CFR 75.63(a)(2)(i))
 - (b) Within 45 days after completing all recertification tests under 40 CFR 75.20(b), submit the hardcopy information required by paragraph (b)(2) of 40 CFR 75.63 to the applicable EPA Regional Office and the appropriate State and/or local air pollution control agency. The applicable EPA Regional Office or appropriate State or local air pollution control agency may waive the requirement to provide hardcopy recertification test and data results. The applicable EPA Regional Office or the appropriate State or local air pollution control agency may also discontinue the waiver and reinstate the requirement of this paragraph to provide a hardcopy report of the recertification test data and results. (40 CFR 75.63(a)(2)(ii))
 - (c) Notwithstanding the requirements of paragraphs (a)(2)(i) and (a)(2)(ii) of 40 CFR 75.63, for an event for which the Administrator determines that only diagnostic tests (*see* 40 CFR 75.20(b)) are required rather than recertification testing, no hardcopy submittal is required; however, the results of all diagnostic test(s) shall be submitted prior to or concurrent with the electronic quarterly report required under 40 CFR 75.64. Notwithstanding the requirement of 40 CFR 75.59(e), for DAHS (missing data and formula) verifications, no hardcopy submittal is required; the owner or operator shall keep these test results on-site in a format suitable for inspection. (40 CFR 75.63(a)(2)(iii))

ii. Contents (40 CFR 75.63(b))

Each application for recertification shall contain the following information, as applicable:

1) Electronic (75.63(b)(1))

- (a) A complete, up-to-date version of the electronic portion of the monitoring plan, according to 40 CFR 75.53(e) and (f), in the format specified by the Administrator. (75.63(b)(1)(i))
- (b) The results of the test(s) required by 40 CFR 75.20, including the type of test conducted, testing date, information required by 40 CFR 75.59 (Certification, quality assurance, and quality control record provisions), and the results of any failed tests that affect data validation. (75.63(b)(1)(ii))

2) Hardcopy (75.63(b)(2))

- (a) Any changed portions of the hardcopy monitoring plan information required under 40 CFR 75.53(e) and (f). Electronic submittal of all monitoring plan information, including the hardcopy portions, is permissible, provided that a paper copy can be furnished upon request. (75.63(b)(2)(i))
- (b) The results of the test(s) required by 40 CFR 75.20, including the type of test conducted, testing date, information required by 40 CFR 75.59(a)(9) (See Condition S1.a.ii.), and the results of any failed tests that affect data validation. (75.63(b)(2)(ii))
- (c) Designated representative signature certifying the accuracy of the submission. (75.63(b)(2)(ii))

iii. Format (40 CFR 75.63(c))

The electronic portion of each certification or recertification application shall be submitted in a format to be specified by the Administrator. The hardcopy test results shall be submitted in a format suitable for review and shall include the information in 40 CFR 75.59(a)(9) (See Condition S1.a.ii.)

e. **Quarterly reports (40 CFR 75.64)**

i. Electronic submission (40 CFR 75.64(a))

The designated representative for an affected unit shall electronically report the data and information in paragraphs (a) and (c) of 40 CFR 75.64 to the Administrator quarterly, beginning with the data from the earlier of the calendar quarter corresponding to the date of provisional certification or the calendar quarter corresponding to the relevant deadline for initial certification in 40 CFR 75.4(a), and (c). The initial quarterly report shall contain hourly data beginning with the hour of provisional certification or the hour corresponding to the relevant certification deadline, whichever is earlier. For any provisionally-certified monitoring system, 40 CFR 75.20(a)(3) shall apply for initial certifications, and 40 CFR 75.20(b)(5) shall apply for recertifications. Each electronic report must be submitted to the Administrator within 30 days following the end of each calendar quarter. On and after January 1, 2009, the owner or operator shall meet the requirements of paragraphs (a)(3) through (a)(15) of 40 CFR 75.64 only. Each electronic report shall also include the date of report generation. (The electronic quarterly reports are submitted to EPA)

- 1) Facility identification information, including: (40 CFR 75.64(a)(3))
 - (a) Facility/ORISPL number; (40 CFR 75.64(a)(3)(i))
 - (b) Calendar quarter and year for the data contained in the report; and (40 CFR 75.64(a)(3)(ii))
 - (c) Version of the electronic data reporting format used for the report. (40 CFR 75.64(a)(3)(iii))
- 2) In accordance with 40 CFR 75.62(a)(1), if any monitoring plan information required in 40 CFR 75.53 (monitoring plan requirements) requires an update, either under 40 CFR 75.53(b) or elsewhere in this part, submission of the electronic monitoring plan update shall be completed prior to or concurrent with the submittal of the quarterly electronic data report for the appropriate quarter in which the update is required. (40 CFR 75.64(a)(4))
- 3) The daily calibration error test and daily interference check information required in 75.59(a)(1) and (a)(2) must always be included in the electronic quarterly emissions report. All other certification, quality assurance, and quality control information in 75.59 that is not excluded from electronic reporting under paragraph (a)(2) or (a)(7) of 40 CFR 75.64 shall be submitted separately, either prior to or concurrent with the submittal of the relevant electronic quarterly emissions report. However, reporting of the information in 75.59(a)(9)(x) is not required until September

26, 2011, and reporting of the information in 75.59(a)(15), (b)(6), and (d)(4) is not required until March 27, 2012. (40 CFR 75.64(a)(5))

- 4) The information and hourly data required in 40 CFR 75.57 through 75.59 (General recordkeeping provisions; General recordkeeping for specific situations; Certification, quality assurance, and quality control record provisions), and daily calibration error test data, daily interference check, and off-line calibration demonstration information required in 40 CFR 75.59(a)(1) and (2). (40 CFR 75.64(a)(6))
- 5) Notwithstanding the requirements of paragraphs (a)(4) through (a)(6) of 40 CFR 75.64, the following information is excluded from electronic reporting: (40 CFR 75.64(a)(7))
 - (a) Descriptions of adjustments, corrective action, and maintenance; (40 CFR 75.64(a)(7)(i))
 - (b) Information which is incompatible with electronic reporting (e.g., field data sheets, lab analyses, quality control plan); (40 CFR 75.64(a)(7)(ii))
 - (c) Opacity data listed in 40 CFR 75.57(f), and in 40 CFR 75.59(a)(8); (40 CFR 75.64(a)(7)(iii))
 - (d) For units with SO₂ or NO_x add-on emission controls that do not elect to use the approved site-specific parametric monitoring procedures for calculation of substitute data, the information in 40 CFR 75.58(b)(3); (40 CFR 75.64(a)(7)(iv))
 - (e) Information required by 40 CFR 75.57(h) concerning the causes of any missing data periods and the actions taken to cure such causes; (40 CFR 75.64(a)(7)(v))
 - (f) Hardcopy monitoring plan information required by 40 CFR 75.53 and hardcopy test data and results required by 40 CFR 75.59; (40 CFR 75.64(a)(7)(vi))
 - (g) Records of flow monitor and moisture monitoring system polynomial equations, coefficients, or “K” factors required by 40 CFR 75.59(a)(5)(vi) or 40 CFR 75.59(a)(5)(vii); (40 CFR 75.64(a)(7)(vii))

- (h) Daily fuel sampling information required by 40 CFR 75.58(c)(3)(i) for units using assumed values under appendix D of this part; (40 CFR 75.64(a)(7)(viii))
- (i) Information required by 40 CFR 75.59(b)(1)(vi), (vii), (viii), (ix), and (xiii), and (b)(2)(iii) and (iv) concerning fuel flowmeter accuracy tests and transmitter/transducer accuracy tests; (40 CFR 75.64(a)(7)(ix))
- (j) Stratification test results required as part of the RATA supplementary records under 40 CFR 75.59(a)(7); (40 CFR 75.64(a)(7)(x))
- (k) Data and results of RATAs that are aborted or invalidated due to problems with the reference method or operational problems with the unit and data and results of linearity checks that are aborted or invalidated due to problems unrelated to monitor performance; (40 CFR 75.64(a)(7)(xi))
- (l) Supplementary RATA information required under 40 CFR 75.59(a)(7)(i) through 40 CFR 75.59(a)(7)(v) (supporting information for RATA), except that: (40 CFR 75.64(a)(7)(xii))
 - (i) The applicable data elements under 40 CFR 75.59(a)(7)(ii)(A) through (T) and under 40 CFR 75.59(a)(7)(iii)(A) through (M) (supporting information for RATA using Method 2) shall be reported for flow RATAs at circular or rectangular stacks (or ducts) in which angular compensation for yaw and/or pitch angles is used (*i.e.*, Method 2F or 2G in appendices A-1 and A-2 to part 60 of this chapter), with or without wall effects adjustments; (40 CFR 75.64(a)(7)(xii)(A))
 - (ii) The applicable data elements under 40 CFR 75.59(a)(7)(ii)(A) through (T) and under 40 CFR 75.59(a)(7)(iii)(A) through (M) (supporting information for RATA using Method 2) shall be reported for any flow RATA run at a circular stack in which Method 2 in appendices A-1 and A-2 to part 60 of this chapter is used and a wall effects adjustment factor is determined by direct measurement; (40 CFR 75.64(a)(7)(xii)(B))
 - (iii) The data under 40 CFR 75.59(a)(7)(ii)(T) (supporting information for RATA using Method 2)

shall be reported for all flow RATAs at circular stacks in which Method 2 in appendices A-1 and A-2 to part 60 of this chapter is used and a default wall effects adjustment factor is applied. (40 CFR 75.64(a)(7)(xii)(C))

- 6) Tons (rounded to the nearest tenth) of SO₂ emitted during the quarter and cumulative SO₂ emissions for the calendar year. (40 CFR 75.64(a)(8))
 - 7) Average NO_x emission rate (lb/mmBtu, rounded to the nearest thousandth) during the quarter and cumulative NO_x emission rate for the calendar year. (40 CFR 75.64(a)(9))
 - 8) Tons of CO₂ emitted during quarter and cumulative CO₂ emissions for calendar year. (40 CFR 75.64(a)(10))
 - 9) Total heat input (mmBtu) for quarter and cumulative heat input for calendar year. (40 CFR 75.64(a)(11))
 - 10) Unit or stack or common pipe header operating hours for quarter and cumulative unit or stack or common pipe header operating hours for calendar year. (40 CFR 75.64(a)(12))
- ii. Compliance certification (40 CFR 75.64(c))

The designated representative shall submit a certification in support of each quarterly emissions monitoring report based on reasonable inquiry of those persons with primary responsibility for ensuring that all of the unit's emissions are correctly and fully monitored. The certification shall indicate whether the monitoring data submitted were recorded in accordance with the applicable requirements of this part including the quality control and quality assurance procedures and specifications of this part and its appendices, and any such requirements, procedures and specifications of an applicable excepted or approved alternative monitoring method. For a unit with add-on emission controls, the designated representative shall also include a certification, for all hours where data are substituted following the provisions of 40 CFR 75.34(a)(1) (missing data substitution procedures for units with add-on emission controls), that the add-on emission controls were operating within the range of parameters listed in the monitoring plan and that the substitute values recorded during the quarter do not systematically underestimate SO₂ or NO_x emissions, pursuant to 40 CFR 75.34 (Missing Data Substitution Procedure).

iii. Method of submission (40 CFR 75.64(f))

Beginning with the quarterly report for the first quarter of the year 2001, all quarterly reports shall be submitted to EPA by direct computer-to-computer electronic transfer via EPA-provided software, unless otherwise approved by the Administrator.

iv. At his or her discretion, the DR may include important explanatory text or comments with an electronic quarterly report submittal, so long as the information is provided in a format that is compatible with the other data required to be reported under 40 CFR 75.64. (40 CFR 75.64(g))

f. **Opacity reports** (40 CFR 75.65)

The owner or operator or designated representative shall report excess emissions of opacity recorded under 40 CFR 75.57(f) (opacity recordkeeping requirements) to the applicable State or local air pollution control agency.

Attachment F - Fugitive Dust Control Plan for Paved & Unpaved Roads
(Submitted 6/28/2013 and Approved 6/5/2014)

Executive Summary

Louisville Gas and Electric Company (LG&E) is required to maintain and operate the Mill Creek Generating Station in a manner consistent with good air pollution control practices for minimizing emissions, as defined in KRS Chapter 77 Air Pollution Control.

This Fugitive Dust Control Plan has been prepared to comply with the requirements of Regulation 1.14 of the Louisville Metro Air Pollution Control District (LMAPCD) and has been developed at the request of the LMAPCD.

Louisville Metro
Air Pollution Control District
850 Barret Ave.
Louisville, KY 40204-1745
502-574-6000

Introduction

This plan identifies measures to control fugitive particulate emissions from paved and unpaved roads at LG&E's Mill Creek Generating Station, 14660 Dixie Highway. This plan is divided into three sections:

1. Site Description
2. Control measures to minimize fugitive particulate emissions
3. Primary Contact List

The Plant Manager is responsible for implementing the procedures outlined in this Fugitive Dust Control Plan. This Plan will be maintained within the Environmental files at the Mill Creek Generating Station.

Plant Manager: Mike Kirkland

Section 1 – Site Description

LG&E's Mill Creek Generating Station (Mill Creek) is located in southwestern Louisville at 14660 Dixie Highway. Mill Creek generates electric energy for local and remote distribution. Coal is the primary fuel utilized in electric generation at Mill Creek. Coal is delivered on the site by rail car and barge with shipments either placed in a storage pile or fed directly to the electric generation process.

The Mill Creek site consists of approximately 500 acres along the Ohio River. The existing operation is spread throughout the property. The primary emission generating activities at the

facility consist of four operational coal-fired boilers (emission units U1, U2, U3 and U4), used for generation of electricity via steam turbines and generators. All boiler units are equipped with electrostatic precipitators (ESP), flue gas desulfurization systems (FGD), and low NO_x burners for emission control. Units 3 and 4 are also equipped with Selective Catalytic Reduction (SCR).

The Mill Creek site utilizes unpaved roads and parking lots, and paved roads for its daily operational needs. See attached Mill Creek Site Map.

Unpaved Roads

Unpaved roads at the Mill Creek site are typically graveled with #57 grade aggregate. Other grades of gravel can be used upon the approval of the District. Unpaved roads access should be limited to contractors, employees, agency personnel, and others that may be provided access in the course of performing required operational duties.

Potential fugitive dust from unpaved roads may be caused by:

- Dry road conditions;
- Wind erosion;
- Vehicle traffic; and
- Material fallout from vehicle traffic.

Paved Roads

The paved roads are asphalt or concrete surfaced. Paved roads access should be limited to contractors, employees, agency personnel, and others that may be provided access in the course of performing required operational duties.

Potential fugitive dust from paved roads may include:

- Material tracked from unpaved surfaces onto paved roads by vehicle traffic; and
- Material fallout from vehicle traffic.
- Construction activities.

Section 2 - Control Measures to Minimize Fugitive Particulate Emissions

The following measures will be implemented to control dust from unpaved and paved roads.

Site Monitoring

- In the event dry weather persists, the frequency of watering will be adjusted to control fugitive dust emissions. Monitoring is performed throughout each business day by multiple LG&E and contract personnel. Areas that require additional/beyond normal attention will be logged by the water truck driver(s). Additional/beyond normal conditions are defined as periods of time outside daily business hours and during extreme weather events.

- If it is determined that weather conditions have contributed to the control of fugitive dust emissions, watering operations may be suspended until such time as it appears necessary for the control of fugitive dust emissions. In addition, watering operations will be suspended if watering has contributed to unsafe conditions for either equipment or personnel.

Unpaved Roads

- Mill Creek utilizes water truck(s) to keep the roadways and entrance and exit areas within the site wet in order to control fugitive dust emissions. An additional water truck, as-needed, will be used during the summer months (typically June through September) as a back-up or to assist with watering efforts during hot/windy weather.
- The watering operations will be at a frequency of at least once every two hours for the active unpaved roads (i.e., scheduled to be used for the whole shift). Further, the facility will water more frequently if there is visible evidence of fugitive dust emissions (e.g., dust clouds resulting from wind). The only exception to the once per two hours of water operations is when the unpaved roads are not active (i.e., scheduled not to be used for the whole shift) or during times when precipitation such as rainfall, snow, and ice have adequately suppressed the dust or have contributed to unsafe conditions for equipment or personnel. (See Section 2 Site Monitoring on Page 3.)
- Mill Creek will maintain daily records for the watering operations performed on all unpaved roads, or a statement that rain occurred. If a statement that rain occurred is made it shall include the start and stop time of rainfall. All records shall include the date, and name of the person making the entry.

Paved Roads

- All passenger vehicles, including employee vehicles entering and leaving the site, will be limited to paved roads and parking lots to prevent the generation of dust, unless required for direct performance of operational duties. Should operational duties cause dust to transfer to paved roads, the material will be cleaned using a water truck side spray or wet street sweeper or water hose, as needed.
- Roads will be maintained in such a manner as to prevent the tracking of debris onto any public roads.
- Mill Creek utilizes water truck(s) to keep the paved roadways, entrance areas, and exit areas within the site wet in order to control fugitive dust emissions. An additional water truck will be used, as-needed, during the summer months (typically June through September) as a back-up or to assist with watering efforts during hot/windy weather.
- For 8 hours per weekday, watering operations will be continuous until the roads are saturated. Weekend operation will be planned on an as-needed basis, based on weather forecast.

Construction Activities

- To minimize the material track-out and transfer onto paved roads, construction vehicles will be cleaned periodically to reduce the accumulation of material.

- Additional watering of the roadways used for construction activities (e.g., controls upgrade project), during extremely dry weather conditions, will be done on an as-needed basis. This determination will be made on a timely basis by appropriate facility personnel. (Also see Section 2 Site Monitoring on Page 3.)
- Mitigation procedures may include wetting of the material to prevent fugitive emissions from trucks hauling dry material likely to become airborne. All trucks leaving Mill Creek property are required to be covered.
- The main plant road from Gate 3 to Gate 5 will use a wet street sweeper, as needed.
- All waste materials generated during construction will be collected and stored in labeled metal or plastic dumpsters and removed from the construction site by a licensed waste management contractor.

Section 3 - Primary Contact List

Personnel involved in activities that produce fugitive particulate emissions are expected to comply with the requirements listed within this Mill Creek Fugitive Dust Control Plan. The following primary contact list is intended for use only by personnel employed by the LMAPCD and is being provided for LMAPCD's use as needed to obtain information regarding any questions or issues surrounding the processes contained within this plan. In the absence of the plant manager, all operation, production and maintenance managers and on-shift operation supervisors have full authority to make the necessary fugitive dust emission mitigation decisions. The contacts listed below are appropriate during and after business hours.

- 1) Production Leader, 24 Hour Support, Mill Creek Station
502-933-6700 (Office)
- 2) Michelle Beumel, Environmental Coordinator, Mill Creek Station
502-933-6527 (Office)
- 3) Brandan Burfict, Environmental Engineer, Environmental Air Section
502-627-2791 (Office)
- 4) Mike Stevens, Production Supervisor/Compliance, Mill Creek Station
502-933-6518 (Office)
- 5) Joe Didelot, Plant Manager, Mill Creek Station
502-933-6559 (Office)
- 6) Philip Imber, Manager, Environmental Air Section, LGE/KU
502-627-4144 (Office)

**LG&E Mill Creek Station
Fugitive Dust Control Plan for Paved and Unpaved Roads
5/6/2014**

- Paved Roads
- Unpaved Roads
- Additional Potential Source Areas



Attachment G – Cross-State Air Pollution Rule (CSAPR)

The owner or operator shall comply with the following requirements unless there are more current promulgated regulations:

I. Description of Transport Rule (TR)¹⁵² Monitoring Provisions

The TR subject units, and the unit-specific monitoring provisions at this source, are identified in the following tables. These units are subject to the requirements for the TR NO_x Annual Trading Program, TR NO_x Ozone Season Trading Program, and TR SO₂ Group 1 Trading Program.

| Unit ID: Unit 1, non-peaking coal-fired boiler with natural gas backup | | | | | |
|--|---|---|---|---|---|
| Parameter | CEMS requirements pursuant to 40 CFR part 75, subpart B (for SO ₂ monitoring) and 40 CFR part 75, subpart H (for NO _x monitoring) | Excepted monitoring system requirements for gas- and oil-fired units pursuant to 40 CFR part 75, appendix D | Excepted monitoring system requirements for gas- and oil-fired peaking units pursuant to 40 CFR part 75, appendix E | Low Mass Emissions excepted monitoring (LME) requirements for gas- and oil-fired units pursuant to 40 CFR 75.19 | EPA-approved alternative monitoring system requirements pursuant to 40 CFR part 75, subpart E |
| SO ₂ | X | | ----- | | |
| NO _x | X | ----- | | | |
| Heat input | X | | ----- | | |

| Unit ID: Unit 2, non-peaking coal-fired boiler with natural gas backup | | | | | |
|--|---|---|---|---|---|
| Parameter | CEMS requirements pursuant to 40 CFR part 75, subpart B (for SO ₂ monitoring) and 40 CFR part 75, subpart H (for NO _x monitoring) | Excepted monitoring system requirements for gas- and oil-fired units pursuant to 40 CFR part 75, appendix D | Excepted monitoring system requirements for gas- and oil-fired peaking units pursuant to 40 CFR part 75, appendix E | Low Mass Emissions excepted monitoring (LME) requirements for gas- and oil-fired units pursuant to 40 CFR 75.19 | EPA-approved alternative monitoring system requirements pursuant to 40 CFR part 75, subpart E |
| SO ₂ | X | | ----- | | |
| NO _x | X | ----- | | | |
| Heat input | X | | ----- | | |

¹⁵² The EPA has been using the phrase “Cross-State Air Pollution Rule (CSAPR)” to describe the final revisions to 40 CFR parts 51, 52, and 97 promulgated on August 8, 2011, as the “Federal Implementation Plan: Interstate Transport of Fine Particulate Matter and Ozone and Correction of SIP Approvals; Final Rule,” also referred to as the “Transport Rule” throughout the CFR. We are noting here these two phrases, “CSAPR” and “Transport Rule (TR)”, are equivalent.

| Unit ID: Unit 3, non-peaking coal-fired boiler with natural gas backup | | | | | |
|--|---|---|---|---|---|
| Parameter | CEMS requirements pursuant to 40 CFR part 75, subpart B (for SO ₂ monitoring) and 40 CFR part 75, subpart H (for NO _x monitoring) | Excepted monitoring system requirements for gas- and oil-fired units pursuant to 40 CFR part 75, appendix D | Excepted monitoring system requirements for gas- and oil-fired peaking units pursuant to 40 CFR part 75, appendix E | Low Mass Emissions excepted monitoring (LME) requirements for gas- and oil-fired units pursuant to 40 CFR 75.19 | EPA-approved alternative monitoring system requirements pursuant to 40 CFR part 75, subpart E |
| SO ₂ | X | | ----- | | |
| NO _x | X | ----- | | | |
| Heat input | X | | ----- | | |

| Unit ID: Unit 4, non-peaking coal-fired boiler with natural gas backup | | | | | |
|--|---|---|---|---|---|
| Parameter | CEMS requirements pursuant to 40 CFR part 75, subpart B (for SO ₂ monitoring) and 40 CFR part 75, subpart H (for NO _x monitoring) | Excepted monitoring system requirements for gas- and oil-fired units pursuant to 40 CFR part 75, appendix D | Excepted monitoring system requirements for gas- and oil-fired peaking units pursuant to 40 CFR part 75, appendix E | Low Mass Emissions excepted monitoring (LME) requirements for gas- and oil-fired units pursuant to 40 CFR 75.19 | EPA-approved alternative monitoring system requirements pursuant to 40 CFR part 75, subpart E |
| SO ₂ | X | | ----- | | |
| NO _x | X | ----- | | | |
| Heat input | X | | ----- | | |

1. The above description of the monitoring used by a unit does not change, create an exemption from, or otherwise affect the monitoring, recordkeeping, and reporting requirements applicable to the unit under 40 CFR 97.430 through 97.435 (TR NO_x Annual Trading Program), 97.530 through 97.535 (TR NO_x Ozone Season Trading Program), and 97.630 through 97.635 (TR SO₂ Group 1 Trading Program). The monitoring, recordkeeping and reporting requirements applicable to each unit are included below in the standard conditions for the applicable TR trading programs.
2. Owners and operators must submit to the Administrator a monitoring plan for each unit in accordance with 40 CFR 75.53, 75.62 and 75.73, as applicable. The monitoring plan for each unit is available at the EPA's website at <http://www.epa.gov/airmarkets/emissions/monitoringplans.html>.
3. Owners and operators that want to use an alternative monitoring system must submit to the Administrator a petition requesting approval of the alternative monitoring system in

accordance with 40 CFR part 75, subpart E and 40 CFR 75.66 and 97.435 (TR NO_x Annual Trading Program), 97.535 (TR NO_x Ozone Season Trading Program), and 97.635 (TR SO₂ Group 1 Trading Program). The Administrator's response approving or disapproving any petition for an alternative monitoring system is available on the EPA's website at <http://www.epa.gov/airmarkets/emissions/petitions.html>.

4. Owners and operators that want to use an alternative to any monitoring, recordkeeping, or reporting requirement under 40 CFR 97.430 through 97.434 (TR NO_x Annual Trading Program), 97.530 through 97.534 (TR NO_x Ozone Season Trading Program), and 97.630 through 97.634 (TR SO₂ Group 1 Trading Program) must submit to the Administrator a petition requesting approval of the alternative in accordance with 40 CFR 75.66 and 97.435 (TR NO_x Annual Trading Program), 97.535 (TR NO_x Ozone Season Trading Program), and 97.635 (TR SO₂ Group 1 Trading Program). The Administrator's response approving or disapproving any petition for an alternative to a monitoring, recordkeeping, or reporting requirement is available on EPA's website at <http://www.epa.gov/airmarkets/emissions/petitions.html>.
5. The descriptions of monitoring applicable to the unit included above meet the requirement of 40 CFR 97.430 through 97.434 (TR NO_x Annual Trading Program), 97.530 through 97.534 (TR NO_x Ozone Season Trading Program), and 97.630 through 97.634 (TR SO₂ Group 1 Trading Program), and therefore minor permit modification procedures, in accordance with 40 CFR 70.7(e)(2)(i)(B) or 71.7(e)(1)(i)(B), may be used to add to or change this unit's monitoring system description.

II. TR NO_x Annual Trading Program requirements (40 CFR 97, Subpart AAAAA)

(a) Designated representative requirements.

The owners and operators shall comply with the requirement to have a designated representative, and may have an alternate designated representative, in accordance with 40 CFR 97.413 through 97.418.

(b) Emissions monitoring, reporting, and recordkeeping requirements.

- (1) The owners and operators, and the designated representative, of each TR NO_x Annual source and each TR NO_x Annual unit at the source shall comply with the monitoring, reporting, and recordkeeping requirements of 40 CFR 97.430 (general requirements, including installation, certification, and data accounting, compliance deadlines, reporting data, prohibitions, and long-term cold storage), 97.431 (initial monitoring system certification and recertification procedures), 97.432 (monitoring system out-of-control periods), 97.433 (notifications concerning monitoring), 97.434 (recordkeeping and reporting, including monitoring plans, certification applications, quarterly reports, and compliance certification), and 97.435 (petitions for alternatives to monitoring, recordkeeping, or reporting requirements).

- (2) The emissions data determined in accordance with 40 CFR 97.430 through 97.435 shall be used to calculate allocations of TR NO_x Annual allowances under 40 CFR 97.411(a)(2) and (b) and 97.412 and to determine compliance with the TR NO_x Annual emissions limitation and assurance provisions under paragraph (c) below, provided that, for each monitoring location from which mass emissions are reported, the mass emissions amount used in calculating such allocations and determining such compliance shall be the mass emissions amount for the monitoring location determined in accordance with 40 CFR 97.430 through 97.435 and rounded to the nearest ton, with any fraction of a ton less than 0.50 being deemed to be zero.

(c) NO_x emissions requirements.

- (1) TR NO_x Annual emissions limitation.
 - (i). As of the allowance transfer deadline for a control period in a given year, the owners and operators of each TR NO_x Annual source and each TR NO_x Annual unit at the source shall hold, in the source's compliance account, TR NO_x Annual allowances available for deduction for such control period under 40 CFR 97.424(a) in an amount not less than the tons of total NO_x emissions for such control period from all TR NO_x Annual units at the source.
 - (ii). If total NO_x emissions during a control period in a given year from the TR NO_x Annual units at a TR NO_x Annual source are in excess of the TR NO_x Annual emissions limitation set forth in paragraph (c)(1)(i) above, then:
 - (A). The owners and operators of the source and each TR NO_x Annual unit at the source shall hold the TR NO_x Annual allowances required for deduction under 40 CFR 97.424(d); and
 - (B). The owners and operators of the source and each TR NO_x Annual unit at the source shall pay any fine, penalty, or assessment or comply with any other remedy imposed, for the same violations, under the Clean Air Act, and each ton of such excess emissions and each day of such control period shall constitute a separate violation of 40 CFR part 97, subpart AAAAA and the Clean Air Act.

- (2) TR NO_x Annual assurance provisions.
- (i). If total NO_x emissions during a control period in a given year from all TR NO_x Annual units at TR NO_x Annual sources in the state exceed the state assurance level, then the owners and operators of such sources and units in each group of one or more sources and units having a common designated representative for such control period, where the common designated representative's share of such NO_x emissions during such control period exceeds the common designated representative's assurance level for the state and such control period, shall hold (in the assurance account established for the owners and operators of such group) TR NO_x Annual allowances available for deduction for such control period under 40 CFR 97.425(a) in an amount equal to two times the product (rounded to the nearest whole number), as determined by the Administrator in accordance with 40 CFR 97.425(b), of multiplying— (A) The quotient of the amount by which the common designated representative's share of such NO_x emissions exceeds the common designated representative's assurance level divided by the sum of the amounts, determined for all common designated representatives for such sources and units in the state for such control period, by which each common designated representative's share of such NO_x emissions exceeds the respective common designated representative's assurance level; and (B) The amount by which total NO_x emissions from all TR NO_x Annual units at TR NO_x Annual sources in the state for such control period exceed the state assurance level.
 - (ii). The owners and operators shall hold the TR NO_x Annual allowances required under paragraph (c)(2)(i) above, as of midnight of November 1 (if it is a business day), or midnight of the first business day thereafter (if November 1 is not a business day), immediately after such control period.
 - (iii). Total NO_x emissions from all TR NO_x Annual units at TR NO_x Annual sources in the State during a control period in a given year exceed the state assurance level if such total NO_x emissions exceed the sum, for such control period, of the state NO_x Annual trading budget under 40 CFR 97.410(a) and the state's variability limit under 40 CFR 97.410(b).
 - (iv). It shall not be a violation of 40 CFR part 97, subpart AAAAA or of the Clean Air Act if total NO_x emissions from all TR NO_x Annual units at TR NO_x Annual sources in the State during a control period exceed the state assurance level or if a common designated representative's share of total NO_x emissions from the TR NO_x

Annual units at TR NO_x Annual sources in the state during a control period exceeds the common designated representative's assurance level.

(v). To the extent the owners and operators fail to hold TR NO_x Annual allowances for a control period in a given year in accordance with paragraphs (c)(2)(i) through (iii) above,

(A). The owners and operators shall pay any fine, penalty, or assessment or comply with any other remedy imposed under the Clean Air Act; and

(B). Each TR NO_x Annual allowance that the owners and operators fail to hold for such control period in accordance with paragraphs (c)(2)(i) through (iii) above and each day of such control period shall constitute a separate violation of 40 CFR part 97, subpart AAAAA and the Clean Air Act.

(3) Compliance periods.

(i). A TR NO_x Annual unit shall be subject to the requirements under paragraph (c)(1) above for the control period starting on the later of January 1, 2015, or the deadline for meeting the unit's monitor certification requirements under 40 CFR 97.430(b) and for each control period thereafter.

(ii). A TR NO_x Annual unit shall be subject to the requirements under paragraph (c)(2) above for the control period starting on the later of January 1, 2017 or the deadline for meeting the unit's monitor certification requirements under 40 CFR 97.430(b) and for each control period thereafter.

(4) Vintage of allowances held for compliance.

(i). A TR NO_x Annual allowance held for compliance with the requirements under paragraph (c)(1)(i) above for a control period in a given year must be a TR NO_x Annual allowance that was allocated for such control period or a control period in a prior year.

(ii). A TR NO_x Annual allowance held for compliance with the requirements under paragraphs (c)(1)(ii)(A) and (2)(i) through (iii) above for a control period in a given year must be a TR NO_x Annual allowance that was allocated for a control period in a prior year or the control period in the given year or in the immediately following year.

- (5) Allowance Management System requirements. Each TR NO_x Annual allowance shall be held in, deducted from, or transferred into, out of, or between Allowance Management System accounts in accordance with 40 CFR part 97, subpart AAAAA.
- (6) Limited authorization. A TR NO_x Annual allowance is a limited authorization to emit one ton of NO_x during the control period in one year. Such authorization is limited in its use and duration as follows:
 - (i). Such authorization shall only be used in accordance with the TR NO_x Annual Trading Program; and
 - (ii). Notwithstanding any other provision of 40 CFR part 97, the Administrator has the authority to terminate or limit the use and duration of such authorization to the extent the Administrator determines is necessary or appropriate to implement any provision of the Clean Air Act.
- (7) Property right. A TR NO_x Annual allowance does not constitute a property right.

(d) Title V permit revision requirements.

- (1) No title V permit revision shall be required for any allocation, holding, deduction, or transfer of TR NO_x Annual allowances in accordance with 40 CFR part 97, subpart AAAAA.
- (2) This permit incorporates the TR emissions monitoring, recordkeeping and reporting requirements pursuant to 40 CFR 97.430 through 97.435, and the requirements for a continuous emission monitoring system (pursuant to 40 CFR part 75, subparts B and H), an excepted monitoring system (pursuant to 40 CFR part 75, appendices D and E), a low mass emissions excepted monitoring methodology (pursuant to 40 CFR 75.19), and an alternative monitoring system (pursuant to 40 CFR part 75, subpart E). Therefore, the Description of TR Monitoring Provisions table for units identified in this permit may be added to, or changed, in this title V permit using minor permit modification procedures in accordance with 40 CFR 97.406(d)(2) and 70.7(e)(2)(i)(B) or 71.7(e)(1)(i)(B).

(e) Additional recordkeeping and reporting requirements.

- (1) Unless otherwise provided, the owners and operators of each TR NO_x Annual source and each TR NO_x Annual unit at the source shall keep on site at the source each of the following documents (in hardcopy or electronic format) for a period of 5 years from the date the document is

created. This period may be extended for cause, at any time before the end of 5 years, in writing by the Administrator.

- (i). The certificate of representation under 40 CFR 97.416 for the designated representative for the source and each TR NO_x Annual unit at the source and all documents that demonstrate the truth of the statements in the certificate of representation; provided that the certificate and documents shall be retained on site at the source beyond such 5-year period until such certificate of representation and documents are superseded because of the submission of a new certificate of representation under 40 CFR 97.416 changing the designated representative.
 - (ii). All emissions monitoring information, in accordance with 40 CFR part 97, subpart AAAAA.
 - (iii). Copies of all reports, compliance certifications, and other submissions and all records made or required under, or to demonstrate compliance with the requirements of, the TR NO_x Annual Trading Program.
- (2) The designated representative of a TR NO_x Annual source and each TR NO_x Annual unit at the source shall make all submissions required under the TR NO_x Annual Trading Program, except as provided in 40 CFR 97.418. This requirement does not change, create an exemption from, or otherwise affect the responsible official submission requirements under a title V operating permit program in 40 CFR parts 70 and 71.

(f) Liability.

- (1) Any provision of the TR NO_x Annual Trading Program that applies to a TR NO_x Annual source or the designated representative of a TR NO_x Annual source shall also apply to the owners and operators of such source and of the TR NO_x Annual units at the source.
- (2) Any provision of the TR NO_x Annual Trading Program that applies to a TR NO_x Annual unit or the designated representative of a TR NO_x Annual unit shall also apply to the owners and operators of such unit.

(g) Effect on other authorities.

No provision of the TR NO_x Annual Trading Program or exemption under 40 CFR 97.405 shall be construed as exempting or excluding the owners and operators, and the designated representative, of a TR NO_x Annual source or TR NO_x Annual unit from compliance with any other provision of the applicable,

approved state implementation plan, a federally enforceable permit, or the Clean Air Act.

(h) Allowance allocations for existing units.

- (1) In accordance with 40 CFR 97.411(a)(1), TR NO_x Annual allowances for existing units are allocated, for the control periods in 2015 and each year thereafter, as provided in a notice of data availability issued by the Administrator.
- (2) As of the date of issuance of this permit, the current TR NO_x annual allowances for TR subject units at LG&E, Mill Creek are summarized in the following table:¹⁵³

| TR NO _x Annual Allocations | | | | | | |
|---------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | 2015 (tons) | 2016 (tons) | 2017 (tons) | 2018 (tons) | 2019 (tons) | 2020 (tons) |
| Unit 1 | 1,574 | 1,574 | 1,427 | 1,427 | 1,427 | 1,427 |
| Unit 2 | 1,699 | 1,699 | 1,540 | 1,540 | 1,540 | 1,540 |
| Unit 3 | 2,351 | 2,351 | 2,131 | 2,131 | 2,131 | 2,131 |
| Unit 4 | 2,766 | 2,766 | 2,508 | 2,508 | 2,508 | 2,508 |

III. TR NO_x Ozone Season Trading Program Requirements (40 CFR 97, Subpart BBBBB)

(a) Designated representative requirements.

The owners and operators shall comply with the requirement to have a designated representative, and may have an alternate designated representative, in accordance with 40 CFR 97.513 through 97.518.

(b) Emissions monitoring, reporting, and recordkeeping requirements.

- (1) The owners and operators, and the designated representative, of each TR NO_x Ozone Season source and each TR NO_x Ozone Season unit at the source shall comply with the monitoring, reporting, and recordkeeping requirements of 40 CFR 97.530 (general requirements, including installation, certification, and data accounting, compliance deadlines, reporting data, prohibitions, and long-term cold storage), 97.531 (initial monitoring system certification and recertification procedures), 97.532 (monitoring system out-of-control periods), 97.533 (notifications

¹⁵³ According to notice of data availability issued in Federal Register 79 FR 71674, December 3, 2014. This table is included for informational purposes and are subject to change.

concerning monitoring), 97.534 (recordkeeping and reporting, including monitoring plans, certification applications, quarterly reports, and compliance certification), and 97.535 (petitions for alternatives to monitoring, recordkeeping, or reporting requirements).

- (2) The emissions data determined in accordance with 40 CFR 97.530 through 97.535 shall be used to calculate allocations of TR NO_x Ozone Season allowances under 40 CFR 97.511(a)(2) and (b) and 97.512 and to determine compliance with the TR NO_x Ozone Season emissions limitation and assurance provisions under paragraph (c) below, provided that, for each monitoring location from which mass emissions are reported, the mass emissions amount used in calculating such allocations and determining such compliance shall be the mass emissions amount for the monitoring location determined in accordance with 40 CFR 97.530 through 97.535 and rounded to the nearest ton, with any fraction of a ton less than 0.50 being deemed to be zero.

(c) NO_x emissions requirements.

- (1) TR NO_x Ozone Season emissions limitation.
 - (i). As of the allowance transfer deadline for a control period in a given year, the owners and operators of each TR NO_x Ozone Season source and each TR NO_x Ozone Season unit at the source shall hold, in the source's compliance account, TR NO_x Ozone Season allowances available for deduction for such control period under 40 CFR 97.524(a) in an amount not less than the tons of total NO_x emissions for such control period from all TR NO_x Ozone Season units at the source.
 - (ii). If total NO_x emissions during a control period in a given year from the TR NO_x Ozone Season units at a TR NO_x Ozone Season source are in excess of the TR NO_x Ozone Season emissions limitation set forth in paragraph (c)(1)(i) above, then:
 - (A). The owners and operators of the source and each TR NO_x Ozone Season unit at the source shall hold the TR NO_x Ozone Season allowances required for deduction under 40 CFR 97.524(d); and
 - (B). The owners and operators of the source and each TR NO_x Ozone Season unit at the source shall pay any fine, penalty, or assessment or comply with any other remedy imposed, for the same violations, under the Clean Air Act, and each ton of such excess emissions and each day of such control

period shall constitute a separate violation of 40 CFR part 97, subpart BBBBBB and the Clean Air Act.

- (2) TR NO_x Ozone Season assurance provisions.
- (i). If total NO_x emissions during a control period in a given year from all TR NO_x Ozone Season units at TR NO_x Ozone Season sources in the state exceed the state assurance level, then the owners and operators of such sources and units in each group of one or more sources and units having a common designated representative for such control period, where the common designated representative's share of such NO_x emissions during such control period exceeds the common designated representative's assurance level for the state and such control period, shall hold (in the assurance account established for the owners and operators of such group) TR NO_x Ozone Season allowances available for deduction for such control period under 40 CFR 97.525(a) in an amount equal to two times the product (rounded to the nearest whole number), as determined by the Administrator in accordance with 40 CFR 97.525(b), of multiplying—
- (A). The quotient of the amount by which the common designated representative's share of such NO_x emissions exceeds the common designated representative's assurance level divided by the sum of the amounts, determined for all common designated representatives for such sources and units in the state for such control period, by which each common designated representative's share of such NO_x emissions exceeds the respective common designated representative's assurance level; and
- (B). The amount by which total NO_x emissions from all TR NO_x Ozone Season units at TR NO_x Ozone Season sources in the state for such control period exceed the state assurance level.
- (ii). The owners and operators shall hold the TR NO_x Ozone Season allowances required under paragraph (c)(2)(i) above, as of midnight of November 1 (if it is a business day), or midnight of the first business day thereafter (if November 1 is not a business day), immediately after such control period.
- (iii). Total NO_x emissions from all TR NO_x Ozone Season units at TR NO_x Ozone Season sources in the state during a control period in a given year exceed the state assurance level if such total NO_x emissions exceed the sum, for such control period, of the State

NO_x Ozone Season trading budget under 40 CFR 97.510(a) and the state's variability limit under 40 CFR 97.510(b).

- (iv). It shall not be a violation of 40 CFR part 97, subpart BBBBBB or of the Clean Air Act if total NO_x emissions from all TR NO_x Ozone Season units at TR NO_x Ozone Season sources in the state during a control period exceed the state assurance level or if a common designated representative's share of total NO_x emissions from the TR NO_x Ozone Season units at TR NO_x Ozone Season sources in the state during a control period exceeds the common designated representative's assurance level.
- (v). To the extent the owners and operators fail to hold TR NO_x Ozone Season allowances for a control period in a given year in accordance with paragraphs (c)(2)(i) through (iii) above,
 - (A). The owners and operators shall pay any fine, penalty, or assessment or comply with any other remedy imposed under the Clean Air Act; and
 - (B). Each TR NO_x Ozone Season allowance that the owners and operators fail to hold for such control period in accordance with paragraphs (c)(2)(i) through (iii) above and each day of such control period shall constitute a separate violation of 40 CFR part 97, subpart BBBBBB and the Clean Air Act.

(3) Compliance periods.

- (i). A TR NO_x Ozone Season unit shall be subject to the requirements under paragraph (c)(1) above for the control period starting on the later of May 1, 2015 or the deadline for meeting the unit's monitor certification requirements under 40 CFR 97.530(b) and for each control period thereafter.
- (ii). A TR NO_x Ozone Season unit shall be subject to the requirements under paragraph (c)(2) above for the control period starting on the later of May 1, 2017 or the deadline for meeting the unit's monitor certification requirements under 40 CFR 97.530(b) and for each control period thereafter.

(4) Vintage of allowances held for compliance.

- (i). A TR NO_x Ozone Season allowance held for compliance with the requirements under paragraph (c)(1)(i) above for a control period in a given year must be a TR NO_x Ozone Season allowance that

was allocated for such control period or a control period in a prior year.

(ii). A TR NO_x Ozone Season allowance held for compliance with the requirements under paragraphs (c)(1)(ii)(A) and (2)(i) through (iii) above for a control period in a given year must be a TR NO_x Ozone Season allowance that was allocated for a control period in a prior year or the control period in the given year or in the immediately following year.

(5) Allowance Management System requirements. Each TR NO_x Ozone Season allowance shall be held in, deducted from, or transferred into, out of, or between Allowance Management System accounts in accordance with 40 CFR part 97, subpart BBBBB.

(6) Limited authorization. A TR NO_x Ozone Season allowance is a limited authorization to emit one ton of NO_x during the control period in one year. Such authorization is limited in its use and duration as follows:

(i). Such authorization shall only be used in accordance with the TR NO_x Ozone Season Trading Program; and

(ii). Notwithstanding any other provision of 40 CFR part 97, subpart BBBBB, the Administrator has the authority to terminate or limit the use and duration of such authorization to the extent the Administrator determines is necessary or appropriate to implement any provision of the Clean Air Act.

(7) Property right. A TR NO_x Ozone Season allowance does not constitute a property right.

(d) Title V permit revision requirements.

(1) No title V permit revision shall be required for any allocation, holding, deduction, or transfer of TR NO_x Ozone Season allowances in accordance with 40 CFR part 97, subpart BBBBB.

(2) This permit incorporates the TR emissions monitoring, recordkeeping and reporting requirements pursuant to 40 CFR 97.530 through 97.535, and the requirements for a continuous emission monitoring system (pursuant to 40 CFR part 75, subparts B and H), an excepted monitoring system (pursuant to 40 CFR part 75, appendices D and E), a low mass emissions excepted monitoring methodology (pursuant to 40 CFR 75.19), and an alternative monitoring system (pursuant to 40 CFR part 75, subpart E). Therefore, the Description of TR Monitoring Provisions table for units identified in this permit may be added to, or changed, in this title V permit

using minor permit modification procedures in accordance with 40 CFR 97.506(d)(2) and 70.7(e)(2)(i)(B) or 71.7(e)(1)(i)(B).

(e) Additional recordkeeping and reporting requirements.

- (1) Unless otherwise provided, the owners and operators of each TR NO_x Ozone Season source and each TR NO_x Ozone Season unit at the source shall keep on site at the source each of the following documents (in hardcopy or electronic format) for a period of 5 years from the date the document is created. This period may be extended for cause, at any time before the end of 5 years, in writing by the Administrator.
 - (i). The certificate of representation under 40 CFR 97.516 for the designated representative for the source and each TR NO_x Ozone Season unit at the source and all documents that demonstrate the truth of the statements in the certificate of representation; provided that the certificate and documents shall be retained on site at the source beyond such 5-year period until such certificate of representation and documents are superseded because of the submission of a new certificate of representation under 40 CFR 97.516 changing the designated representative.
 - (ii). All emissions monitoring information, in accordance with 40 CFR part 97, subpart BBBBB.
 - (iii). Copies of all reports, compliance certifications, and other submissions and all records made or required under, or to demonstrate compliance with the requirements of, the TR NO_x Ozone Season Trading Program.
- (2) The designated representative of a TR NO_x Ozone Season source and each TR NO_x Ozone Season unit at the source shall make all submissions required under the TR NO_x Ozone Season Trading Program, except as provided in 40 CFR 97.518. This requirement does not change, create an exemption from, or otherwise affect the responsible official submission requirements under a title V operating permit program in 40 CFR parts 70 and 71.

(f) Liability.

- (1) Any provision of the TR NO_x Ozone Season Trading Program that applies to a TR NO_x Ozone Season source or the designated representative of a TR NO_x Ozone Season source shall also apply to the owners and operators of such source and of the TR NO_x Ozone Season units at the source.

- (2) Any provision of the TR NO_x Ozone Season Trading Program that applies to a TR NO_x Ozone Season unit or the designated representative of a TR NO_x Ozone Season unit shall also apply to the owners and operators of such unit.

(g) Effect on other authorities.

No provision of the TR NO_x Ozone Season Trading Program or exemption under 40 CFR 97.505 shall be construed as exempting or excluding the owners and operators, and the designated representative, of a TR NO_x Ozone Season source or TR NO_x Ozone Season unit from compliance with any other provision of the applicable, approved state implementation plan, a federally enforceable permit, or the Clean Air Act.

(h) Allowance allocations for existing units.

- (1) In accordance with 40 CFR 97.511(a)(1), TR NO_x Ozone Season allowances for existing units are allocated, for the control periods in 2015 and each year thereafter, as provided in a notice of data availability issued by the Administrator.
- (2) Current TR NO_x Ozone Season allowances for TR subject units at LG&E, Mill Creek are summarized in the following table:¹⁵⁴

| TR NO _x Ozone Season Allocations | | | | | | |
|---|-------------|-------------|-------------|-------------|-------------|-------------|
| | 2015 (tons) | 2016 (tons) | 2017 (tons) | 2018 (tons) | 2019 (tons) | 2020 (tons) |
| Unit 1 | 674 | 674 | 597 | 597 | 597 | 597 |
| Unit 2 | 731 | 731 | 648 | 648 | 648 | 648 |
| Unit 3 | 1,098 | 1,098 | 973 | 973 | 973 | 973 |
| Unit 4 | 1,282 | 1,282 | 1,135 | 1,135 | 1,135 | 1,135 |

IV. TR SO₂ Group 1 Trading Program requirements (40 CFR 97, Subpart CCCCC)

(a) Designated representative requirements.

The owners and operators shall comply with the requirement to have a designated representative, and may have an alternate designated representative, in accordance with 40 CFR 97.613 through 97.618.

(b) Emissions monitoring, reporting, and recordkeeping requirements.

¹⁵⁴ According to notice of data availability issued in Federal Register 79 FR 71674, December 3, 2014

- (1) The owners and operators, and the designated representative, of each TR SO₂ Group 1 source and each TR SO₂ Group 1 unit at the source shall comply with the monitoring, reporting, and recordkeeping requirements of 40 CFR 97.630 (general requirements, including installation, certification, and data accounting, compliance deadlines, reporting data, prohibitions, and long-term cold storage), 97.631 (initial monitoring system certification and recertification procedures), 97.632 (monitoring system out-of-control periods), 97.633 (notifications concerning monitoring), 97.634 (recordkeeping and reporting, including monitoring plans, certification applications, quarterly reports, and compliance certification), and 97.635 (petitions for alternatives to monitoring, recordkeeping, or reporting requirements).
- (2) The emissions data determined in accordance with 40 CFR 97.630 through 97.635 shall be used to calculate allocations of TR SO₂ Group 1 allowances under 40 CFR 97.611(a)(2) and (b) and 97.612 and to determine compliance with the TR SO₂ Group 1 emissions limitation and assurance provisions under paragraph (c) below, provided that, for each monitoring location from which mass emissions are reported, the mass emissions amount used in calculating such allocations and determining such compliance shall be the mass emissions amount for the monitoring location determined in accordance with 40 CFR 97.630 through 97.635 and rounded to the nearest ton, with any fraction of a ton less than 0.50 being deemed to be zero.

(c) SO₂ emissions requirements.

- (1) TR SO₂ Group 1 emissions limitation.
 - (i). As of the allowance transfer deadline for a control period in a given year, the owners and operators of each TR SO₂ Group 1 source and each TR SO₂ Group 1 unit at the source shall hold, in the source's compliance account, TR SO₂ Group 1 allowances available for deduction for such control period under 40 CFR 97.624(a) in an amount not less than the tons of total SO₂ emissions for such control period from all TR SO₂ Group 1 units at the source.
 - (ii). If total SO₂ emissions during a control period in a given year from the TR SO₂ Group 1 units at a TR SO₂ Group 1 source are in excess of the TR SO₂ Group 1 emissions limitation set forth in paragraph (c)(1)(i) above, then:
 - (A). The owners and operators of the source and each TR SO₂ Group 1 unit at the source shall hold the TR SO₂ Group 1

allowances required for deduction under 40 CFR 97.624(d); and

- (B). The owners and operators of the source and each TR SO₂ Group 1 unit at the source shall pay any fine, penalty, or assessment or comply with any other remedy imposed, for the same violations, under the Clean Air Act, and each ton of such excess emissions and each day of such control period shall constitute a separate violation 40 CFR part 97, subpart CCCCC and the Clean Air Act.

(2) TR SO₂ Group 1 assurance provisions.

- (i). If total SO₂ emissions during a control period in a given year from all TR SO₂ Group 1 units at TR SO₂ Group 1 sources in the state exceed the state assurance level, then the owners and operators of such sources and units in each group of one or more sources and units having a common designated representative for such control period, where the common designated representative's share of such SO₂ emissions during such control period exceeds the common designated representative's assurance level for the state and such control period, shall hold (in the assurance account established for the owners and operators of such group) TR SO₂ Group 1 allowances available for deduction for such control period under 40 CFR 97.625(a) in an amount equal to two times the product (rounded to the nearest whole number), as determined by the Administrator in accordance with 40 CFR 97.625(b), of multiplying—
 - (A). The quotient of the amount by which the common designated representative's share of such SO₂ emissions exceeds the common designated representative's assurance level divided by the sum of the amounts, determined for all common designated representatives for such sources and units in the state for such control period, by which each common designated representative's share of such SO₂ emissions exceeds the respective common designated representative's assurance level; and
 - (B). The amount by which total SO₂ emissions from all TR SO₂ Group 1 units at TR SO₂ Group 1 sources in the state for such control period exceed the state assurance level.
- (ii). The owners and operators shall hold the TR SO₂ Group 1 allowances required under paragraph (c)(2)(i) above, as of midnight of November 1 (if it is a business day), or midnight of the

first business day thereafter (if November 1 is not a business day), immediately after such control period.

- (iii). Total SO₂ emissions from all TR SO₂ Group 1 units at TR SO₂ Group 1 sources in the state during a control period in a given year exceed the state assurance level if such total SO₂ emissions exceed the sum, for such control period, of the state SO₂ Group 1 trading budget under 40 CFR 97.610(a) and the state's variability limit under 40 CFR 97.610(b).
- (iv). It shall not be a violation of 40 CFR part 97, subpart CCCCC or of the Clean Air Act if total SO₂ emissions from all TR SO₂ Group 1 units at TR SO₂ Group 1 sources in the state during a control period exceed the state assurance level or if a common designated representative's share of total SO₂ emissions from the TR SO₂ Group 1 units at TR SO₂ Group 1 sources in the state during a control period exceeds the common designated representative's assurance level.
- (v). To the extent the owners and operators fail to hold TR SO₂ Group 1 allowances for a control period in a given year in accordance with paragraphs (c)(2)(i) through (iii) above,
 - (A). The owners and operators shall pay any fine, penalty, or assessment or comply with any other remedy imposed under the Clean Air Act; and
 - (B). Each TR SO₂ Group 1 allowance that the owners and operators fail to hold for such control period in accordance with paragraphs (c)(2)(i) through (iii) above and each day of such control period shall constitute a separate violation of 40 CFR part 97, subpart CCCCC and the Clean Air Act.

(3) Compliance periods.

- (i). A TR SO₂ Group 1 unit shall be subject to the requirements under paragraph (c)(1) above for the control period starting on the later of January 1, 2015 or the deadline for meeting the unit's monitor certification requirements under 40 CFR 97.630(b) and for each control period thereafter.
- (ii). A TR SO₂ Group 1 unit shall be subject to the requirements under paragraph (c)(2) above for the control period starting on the later of January 1, 2017 or the deadline for meeting the unit's monitor certification requirements under 40 CFR 97.630(b) and for each control period thereafter.

- (4) Vintage of allowances held for compliance.
 - (i). A TR SO₂ Group 1 allowance held for compliance with the requirements under paragraph (c)(1)(i) above for a control period in a given year must be a TR SO₂ Group 1 allowance that was allocated for such control period or a control period in a prior year.
 - (ii). A TR SO₂ Group 1 allowance held for compliance with the requirements under paragraphs (c)(1)(ii)(A) and (2)(i) through (iii) above for a control period in a given year must be a TR SO₂ Group 1 allowance that was allocated for a control period in a prior year or the control period in the given year or in the immediately following year.
- (5) Allowance Management System requirements. Each TR SO₂ Group 1 allowance shall be held in, deducted from, or transferred into, out of, or between Allowance Management System accounts in accordance with 40 CFR part 97, subpart CCCCC.
- (6) Limited authorization. A TR SO₂ Group 1 allowance is a limited authorization to emit one ton of SO₂ during the control period in one year. Such authorization is limited in its use and duration as follows:
 - (i). Such authorization shall only be used in accordance with the TR SO₂ Group 1 Trading Program; and
 - (ii). Notwithstanding any other provision of 40 CFR part 97, subpart CCCCC, the Administrator has the authority to terminate or limit the use and duration of such authorization to the extent the Administrator determines is necessary or appropriate to implement any provision of the Clean Air Act.
- (7) Property right. A TR SO₂ Group 1 allowance does not constitute a property right.

(d) Title V permit revision requirements.

- (1) No title V permit revision shall be required for any allocation, holding, deduction, or transfer of TR SO₂ Group 1 allowances in accordance with 40 CFR part 97, subpart CCCCC.
- (2) This permit incorporates the TR emissions monitoring, recordkeeping and reporting requirements pursuant to 40 CFR 97.630 through 97.635, and the requirements for a continuous emission monitoring system (pursuant to 40 CFR part 75, subparts B and H), an excepted monitoring system (pursuant to 40 CFR part 75, appendices D and E), a low mass emissions

excepted monitoring methodology (pursuant to 40 CFR part 75.19), and an alternative monitoring system (pursuant to 40 CFR part 75, subpart E), Therefore, the Description of TR Monitoring Provisions table for units identified in this permit may be added to, or changed, in this title V permit using minor permit modification procedures in accordance with 40 CFR 97.606(d)(2) and 70.7(e)(2)(i)(B) or 71.7(e)(1)(i)(B).

(e) Additional recordkeeping and reporting requirements.

- (1) Unless otherwise provided, the owners and operators of each TR SO₂ Group 1 source and each TR SO₂ Group 1 unit at the source shall keep on site at the source each of the following documents (in hardcopy or electronic format) for a period of 5 years from the date the document is created. This period may be extended for cause, at any time before the end of 5 years, in writing by the Administrator.
 - (i). The certificate of representation under 40 CFR 97.616 for the designated representative for the source and each TR SO₂ Group 1 unit at the source and all documents that demonstrate the truth of the statements in the certificate of representation; provided that the certificate and documents shall be retained on site at the source beyond such 5-year period until such certificate of representation and documents are superseded because of the submission of a new certificate of representation under 40 CFR 97.616 changing the designated representative.
 - (ii). All emissions monitoring information, in accordance with 40 CFR part 97, subpart CCCCC.
 - (iii). Copies of all reports, compliance certifications, and other submissions and all records made or required under, or to demonstrate compliance with the requirements of, the TR SO₂ Group 1 Trading Program.
- (2) The designated representative of a TR SO₂ Group 1 source and each TR SO₂ Group 1 unit at the source shall make all submissions required under the TR SO₂ Group 1 Trading Program, except as provided in 40 CFR 97.618. This requirement does not change, create an exemption from, or otherwise affect the responsible official submission requirements under a title V operating permit program in 40 CFR parts 70 and 71.

(f) Liability.

- (1) Any provision of the TR SO₂ Group 1 Trading Program that applies to a TR SO₂ Group 1 source or the designated representative of a TR SO₂

Group 1 source shall also apply to the owners and operators of such source and of the TR SO₂ Group 1 units at the source.

- (2) Any provision of the TR SO₂ Group 1 Trading Program that applies to a TR SO₂ Group 1 unit or the designated representative of a TR SO₂ Group 1 unit shall also apply to the owners and operators of such unit.

(g) Effect on other authorities.

No provision of the TR SO₂ Group 1 Trading Program or exemption under 40 CFR 97.605 shall be construed as exempting or excluding the owners and operators, and the designated representative, of a TR SO₂ Group 1 source or TR SO₂ Group 1 unit from compliance with any other provision of the applicable, approved state implementation plan, a federally enforceable permit, or the Clean Air Act.

(h) Allowance allocations for existing units.

- (1) In accordance with 40 CFR 97.611(a)(1), TR SO₂ Group 1 allowances for existing units are allocated, for the control periods in 2015 and each year thereafter, as provided in a notice of data availability issued by the Administrator.
- (2) Current TR SO₂ Group 1 allowances for TR subject units at LG&E, Mill Creek are summarized in the following table:¹⁵⁵

| TR SO ₂ Group 1 Allocations | | | | | | |
|--|-------------|-------------|-------------|-------------|-------------|-------------|
| | 2015 (tons) | 2016 (tons) | 2017 (tons) | 2018 (tons) | 2019 (tons) | 2020 (tons) |
| Unit 1 | 4,531 | 4,595 | 1,950 | 1,950 | 1,950 | 1,950 |
| Unit 2 | 4,892 | 4,961 | 2,105 | 2,105 | 2,105 | 2,105 |
| Unit 3 | 6,769 | 6,864 | 2,912 | 2,912 | 2,912 | 2,912 |
| Unit 4 | 7,964 | 8,076 | 3,427 | 3,427 | 3,427 | 3,427 |

¹⁵⁵ According to notice of data availability issued in Federal Register 79 FR 71674, December 3, 2014

Attachment H - Control Device Efficiencies and Determination Methods

| Unit ID | Control ID | Description | Control Efficiency | Control Efficiency Determination Methods ^{1,2} |
|---------|------------|--|--------------------------------|--|
| U1 | C1 | ESP | N/A | Annual test used for compliance demonstration |
| | C2 | FGD (old) | N/A | CEMS used for compliance demonstration |
| | C3 | dust collector | 90% | Option 1. |
| | C26 | PAC/Sorbent/PJFF/Liquid Additives | TBD | Option 3. Stack test required by construction permit |
| | C27 | FGD (new) | N/A | CEMS used for compliance demonstration |
| U2 | C4 | ESP | N/A | Annual test used for compliance demonstration |
| | C5 | FGD (old) | N/A | CEMS used for compliance demonstration |
| | C6 | dust collector | 90% | Option 1. |
| | C28 | PAC/Sorbent/PJFF/Liquid Additives | TBD | Option 3. Stack test required by construction permit |
| U3 | C7 | ESP | N/A | Annual test used for compliance demonstration |
| | C8 | FGD (old) | N/A | CEMS used for compliance demonstration |
| | C9 | dust collector | 90% | Option 1. |
| | C22 | SCR | N/A | CEMS used for compliance demonstration |
| | C29 | PAC/Sorbent/PJFF/Liquid Additives | TBD | Option 3. Stack test required by construction permit |
| | C39 | FGD (new) | N/A | CEMS used for compliance demonstration |
| U4 | C10 | ESP | N/A | Annual test used for compliance demonstration |
| | C11 | FGD (old) | N/A | CEMS used for compliance demonstration |
| | C12 | dust collector | 90% | Option 1. |
| | C23 | SCR | N/A | CEMS used for compliance demonstration |
| | C30 | PAC
Sorbent
PJFF
Liquid Additives | 97.7%
99.4%
99.8%
TBD | Option 3. Stack test conducted Jan. 20 through 22, Feb. 5 and 6, 2015. |
| | C31 | FGD (new) | N/A | CEMS used for compliance demonstration |
| U8 | C15 | Baghouse | 95% | Option 1. |
| | C16 | Baghouse | 95% | Option 1. |
| | C24 | Baghouse | 95% | Option 1. |
| | C25 | Baghouse | 95% | Option 1. |
| | C37 | Filter | 95% | Option 1. |
| | C38 | Filter | 95% | Option 1. |
| U9 | C19 | Baghouse | 95% | Option 1. |
| | C20 | Baghouse | 95% | Option 1. |
| | C21 | Baghouse | 95% | Option 1. |
| U16 | C32 | Bin vent filters | 99% | Option 2, received 9/13/2013 |
| U17 | C33 | Bin vent filters | 99% | Option 2, received 9/13/2013 |
| U18 | C34 | Bin vent filters | 99% | Option 2, received 9/13/2013 |
| U20 | C36 | Baghouse | N/A | Processing baghouse |

| Unit ID | Control ID | Description | Control Efficiency | Control Efficiency Determination Methods ^{1,2} |
|---------|------------|-------------|--------------------|---|
| U15, 22 | | Watering | 70% | Option 1. Watering unpaved roads once every two hours. |

Note:

1. Options for control efficiency determination:
 - Option 1: Use District pre-approved control efficiency
 - Option 2: Submit a signature guarantee from the control device manufacture stating the control device efficiency
 - Option 3: Perform stack test. See Note 3 for general testing requirements.
2. Until the District receives a signature guarantee from the control device manufacturer stating the control device efficiency is higher (Option 2), or an approved stack test (Option 3), the pre-approved efficiency (Option 1) will be used in all calculations to demonstrate compliance with applicable standards and calculations for emission inventory.
3. General Testing Requirements (Regulation 2.16, section 4.1.9.1)

Plant-wide the owner or operator shall retest all control devices within ten (10) years since the most recent District accepted performance test or within 180 days after the effective date of the permit if no previous test has been performed. For equipment which has been tested but not within ten years prior to the effective date of this permit the Company may submit within 90 days of the effective date of this permit, contingent on approval by the District, a schedule which shall at a minimum propose testing for all affected equipment within this permit cycle. Thereafter the Company shall retest each affected device at least once every 10 years. Devices of adequately similar design and filter media may be represented by a common performance test contingent upon review and approval by the District of the testing protocol. In lieu of the control efficiency testing, unless required by a Federal Regulation, the owner or operator may submit a signature guarantee from the control device manufacture stating the control device efficiency.

The owner or operator shall use the most recent District accepted performance test results to demonstrate compliance with the emission limits and in the annual emission inventory reporting.

If performance testing is not completed by the required date, then the company shall calculate emissions using expired test result data or methods such as EPA approved emission factors and guidance documents such as EIIP and AP-42 or other methods upon written approval by the District, whichever results in the greater (more conservative) emissions.

The owner or operator shall construct all equipment in such a manner that the following testing requirements can be performed.

- i. The owner or operator shall perform an EPA Reference Method (or equivalent methods that approved by the District) performance test. The test shall be performed at 90% or higher of maximum capacity, or allowable/permitted capacity, or at a level of capacity which results in the greatest emissions and is representative of the operations. Failure to perform the test, at maximum capacity, allowable/permitted capacity, or at a level of capacity which resulted in the greatest emissions, may necessitate a re-test or necessitate a revision of the allowable/permitted capacity of the process equipment depending upon the difference between the testing results and the limit.

- ii. The owner or operator shall perform a capture efficiency test using EPA guidelines. In lieu of performing a capture efficiency test, the owner or operator may submit a reasonable estimate of capture efficiency with thorough justification subject to approval by the District.
- iii. The owner or operator shall submit written compliance test plans (protocol) for the control efficiency and capture efficiency. They shall include the EPA test methods that will be used for compliance testing, the process operating parameters that will be monitored during the performance test, and the control device performance indicators (e.g. pressure drop, minimum combustion chamber temperature) that will be monitored during the performance test. The compliance test plans shall be furnished to the District at least 30 days prior to the actual date of the performance test. Attached to the permit is a Protocol Checklist for Performance Test for the information to be submitted in the protocol.
- iv. The owner or operator shall be responsible for obtaining and analyzing audit samples when the EPA Reference Method is used to analyze samples to demonstrate compliance with the source's emission regulation. The audit samples shall be available for verification by the District during the onsite testing.
- v. The owner or operator shall provide the District at least 10 days prior notice of any performance test to afford the District the opportunity to have an observer present.
- vi. The owner or operator shall furnish the District with a written report of the results of the performance test within 60 days following the actual date of completion of the performance test.
- vii. The owner or operator shall provide written notification to the District of the actual date of initial startup (only required for new equipment). The written notification shall be postmarked within 15 days after the effective date of the permit.

Attachment I - Determination of Benchmark Ambient Concentration (BAC)

Determination of Benchmark Ambient Concentration (BAC) Category No.

TAC CAS No. Mol. Wt.

BACc = ug/m3 Annual BACnc = ug/m3 Averaging Period De Minimis lb/hour; lb/; lb/year

I. Carcinogen Risk - BACc [Annual Averaging Period] Carcinogen

- 1. IRIS no 10-6 risk = ug/m3 URE (ug/m3)-1
2. Cal no 10-6 risk = ug/m3 IUR (ug/m3)-1
3. MI no 10-6 risk = ug/m3
4. NTP Part A yes no Part B yes no
5. IARC Group 1 yes no Group 2A yes no Group 2B yes no
6. ATSDR no
7. Sec. 3.3.4 method no 10-6 risk = ug/m3
8. Default 0.0004 ug/m3

II. Chronic Noncancer Risk - BACnc [Averaging Period as Specified]

- 1. IRIS no RfC = ug/m3 Annual
2. Cal no REL = ug/m3 Annual
3. IRIS1 no RfD = ug/kg/day x 70/20 = ug/m3 Annual
4. MI no ITSL = ug/m3 Averaging Period
5. TLV NIOSH ug/m3 x 0.01 = ug/m3 8-Hr
6. RTECS1 = ug/m3 Annual
7. Default 0.04 ug/m3 Annual

III. De Minimis

- 1. Carcinogen (BACc) ug/m3 x 0.54 = lb/hour (BACc) ug/m3 x 480 = lb/year
2. Chronic Noncancer Risk Averaging Period (BACnc) ug/m3 x = lb/hour (BACnc) ug/m3 x = lb/ lb/ x = lb/year

1 To use data based upon an oral route of exposure, the District must make an affirmative determination that data are not available to indicate that oral-route to inhalation-route extrapolation is inappropriate.

Prepared by

Attachment J – Compliance Assurance Monitoring (CAM) Plan

Louisville Gas and Electric/Mill Creek Generating Station

Introduction

CAM applies at Title V major sources that use control devices to achieve compliance with an applicable limit or standard and have potential pre-control emissions greater than or equal to 100% of the major source trigger for the pollutant.

Louisville Gas and Electric’s Mill Creek Generating Station utilizes the following control devices that will become subject to the CAM requirements as part of the Title V renewal process:

- Emission Unit E-1 (Unit 1 dry-bottom tangentially-fired boiler) employs an electrostatic precipitator (ESP) for particulate matter (PM) control; and a wet lime flue gas desulfurization system (WFGD) for sulfur dioxide (SO₂) control.
- Emission Unit E-3 (Unit 2 dry-bottom tangentially-fired boiler) employs an ESP for PM control and a WFGD for SO₂ control.
- Emission Unit E-5 (Unit 3 wall-fired boiler) employs an ESP for PM control, a WFGD for SO₂ control, and a selective catalytic reduction (SCR) for nitrogen oxide (NO_x) control.
- Emission Unit E-7 (Unit 4 wall-fired boiler) employs an ESP for PM control, a WFGD for SO₂ control, and an SCR for NO_x control.

The CAM Plan will have three parts, and they are as follows:

- (1) Emission Units E-1, E-3, E-5, and E-7 will have a CAM plan for PM.
- (2) Emission Units E-1, E-3, E-5, and E-7 will have a CAM plan for SO₂.
- (3) Emission Units E-5, and E-7 will have a CAM plan for NO_x.

The Compliance Assurance Monitoring Plans are provided below:

(1) Compliance Assurance Monitoring Plan – Particulate Matter for Emission Units E-1, E-3, E-5, and E-7:

Emissions Unit

| | |
|-----------------|--|
| Facility: | Mill Creek Generating Station |
| Description: | Units 1, 2, 3, and 4 pulverized coal-fired boilers |
| Identification: | Emission Units E-1, E-3, E-5, and E-7 |

Applicable Regulations, Emission Limit, and Monitoring Requirements

| | |
|-------------------------|---|
| Applicable Regulations: | Emission Unit E-1: Regulation 6.07 |
| | Emission Unit E-3: Regulation 6.07 |
| | Emission Unit E-5: Regulation 7.06; 40 CFR 60.42 (a)(1) |
| | Emission Unit E-7: Regulation 7.06; 40 CFR 60.42 (a)(1) |
| Regulated Pollutant: | Particulate Matter (PM) |

Emission Limits: Emission Unit E-1: 0.11 lb./MMBtu based on a 3-hour average
 Emission Unit E-3: 0.11 lb./MMBtu based on a 3-hour average
 Emission Unit E-5: 0.10 lb./MMBtu based on a 3-hour average
 Emission Unit E-7: 0.10 lb./MMBtu based on a 3-hour average

Monitoring Requirements: PM CEMs monitor

Control Technology

Electrostatic precipitator (ESP)

Monitoring Approach

The Mill Creek Generating Station Emission Unit E-1, E-3, E-5, and E-7 will use a CEMS that meets 40 CFR 60 requirements for installation, operation and quality assurance to continuously measure sulfur dioxide on the generating units to provide a continuous indication of measured particulate matter (PM) on the generating units. The data reporting system for the CEMS will calculate PM emission rates in terms of lb./MMBtu based on a 3-hr rolling average and compare to the applicable limit.

The Mill Creek Generating Station will perform an annual Method 5 PM stack test while operating at representative conditions to demonstrate compliance with the particulate standard.

Justification

The use of a Continuous Emission Monitoring System that provides measurements in units of the standard for the pollutant of interest meets the criteria in 40 CFR Part 64.3 (d)(2) and is considered presumptively acceptable CAM.

An annual reference method performance test while the units are operating normally will be conducted to demonstrate compliance status with the standard.

(2) Compliance Assurance Monitoring Plan – SO₂ for Emission Unit E-1, E-3, E-5, and E-7

Emissions Unit

Facility: Mill Creek Generating Station
 Description: Units 1, 2, 3, and 4 pulverized coal-fired boilers
 Identification: Emission Units E-1, E-3, E-5, and E-7

Applicable Regulations, Emission Limit, and Monitoring Requirements

Applicable Regulations: Emission Unit E-1: Regulation 6.07, Regulation 6.47
 Emission Unit E-3: Regulation 6.07, Regulation 6.47
 Emission Unit E-5: Regulation 7.06; 40 CFR 60.43 (a) (2),
 Regulation 6.47
 Emission Unit E-7: Regulation 7.06; 40 CFR 60.43 (a) (2),
 Regulation 6.47

Regulated Pollutant: sulfur dioxide (SO₂)

Emission Limits: 1.2 lb./MMBtu based on a 3-hour average. SO₂ allocations per the Acid Rain program.

Monitoring Requirements: 40 CFR Part 75 Continuous Emission Monitoring (CEMs)

Control Technology

Wet lime sulfur dioxide scrubber (flue gas desulfurization system)

Monitoring Approach

The Mill Creek Generating Station Emission Unit E-1, E-3, E-5, and E-7 will use a CEMS that meets 40 CFR 75 requirements for installation, operation and quality assurance of data to continuously measure sulfur dioxide on the generating units. The data reporting system for the CEMS will calculate sulfur dioxide emission rates in terms of lb./MMBtu based on a 3-hr rolling average and compare to the applicable limit.

Justification

The use of a Continuous Emission Monitoring System that provides results in units of the standard for the pollutant of interest meets the criteria in 40 CFR Part 64.3 (d)(2) and is considered presumptively acceptable CAM.

(3) Compliance Assurance Monitoring Plan – NO_x for Emission Unit E-5, and E-7Emissions Unit

| | |
|-----------------|---|
| Facility: | Mill Creek Generating Station |
| Description: | Units 3 and 4 pulverized coal-fired boilers |
| Identification: | Emission Units E-5, and E-7 |

Applicable Regulations, Emission Limit, and Monitoring Requirements

| | | |
|--------------------------|--|--------|
| Applicable Regulations: | Regulation 7.06, Regulation 6.42, Regulation 6.47, 60.44 (a) | 40 CFR |
| Regulated Pollutant: | nitrogen oxides (NO _x) | |
| Emission Limits: | 0.50 lb./MMBtu based on an annual average basis. 0.52 lb./MMBtu based on a rolling 30-day average. NO _x allocations per the NO _x Budget program. | |
| Monitoring Requirements: | 40 CFR Part 75 Continuous Emission Monitoring (CEMs) for installation, operation and quality assurance of data | |

Control Technology

Selective Catalytic Reduction (SCR)

Monitoring Approach

The Mill Creek Generating Station Emission Unit E-5, and E-7 will use 40 CFR Part 75 CEMS to continuously measure nitrogen oxides on the generating units. The data reporting system for the CEMS will calculate nitrogen oxide emission rates in terms of lb./MMBtu based on a rolling 30-day average and annual average and compare to the applicable limit.

Justification

The use of a Continuous Emission Monitoring System that provides results in units of the standard for the pollutant of interest meets the criteria in 40 CFR Part 64.3 (d)(2) and is considered presumptively acceptable CAM.



Louisville Metro Air Pollution Control District
850 Barret Avenue
Louisville, Kentucky 40204-1745



TITLE IV PHASE II ACID RAIN PERMIT

Permit No.: 176-97-AR (R4)

Plant ID: 0127

Effective Date: 7/31/2014

Expiration Date: 7/31/2019

Permission is hereby given by the Louisville Metro Air Pollution Control District to operate the process(es) and equipment described herein which are located at:

Owner: Louisville Gas & Electric Company
Source: Mill Creek Generating Station
14660 Dixie Highway
Louisville, KY 40272

Statutory and Regulatory Authorities: In accordance with KRS Chapter 77 and Titles IV and V of the Clean Air Act, the Air Pollution Control District of Jefferson County issues this permit pursuant to Regulations 2.16, 6.47, and 7.82.

Application No.: N/A

Application Received: 12/13/1995

Permit Writer: Yiqiu Lin

Administratively Complete: 2/11/1996

Acid Rain Permit Revisions/Changes

| Revision No. | Issue Date | Public Notice Date | Type | Attachment No./Page No. | Description |
|---------------------|-------------------|---------------------------|-------------|--------------------------------|---|
| Initial | 12/17/1997 | N/A | Initial | Entire Permit | Initial Issuance |
| R1 | 12/31/1998 | N/A | Significant | Entire Permit | Added language and SO2 allowances to the tables for each unit |
| R2 | 06/01/2003 | N/A | Reissuance | Entire Permit | Reissuance of the permit |
| R3 | 06/15/2012 | N/A | Reissuance | Entire Permit | Reissuance of the permit |
| R4 | 7/31/2014 | 06/05/2014 | Renewal | Entire Permit | Renewal of the permit |

Acid Rain Permit Conditions

1. SO₂ Allowance Allocations and NO_x Requirements for Unit U1

| Unit U1:
SO₂ Allowances | SO₂ Allowances for Years
2008 – 2009 (tons) | SO₂ Allowances for Years
2010 and Beyond (tons) |
|---|---|---|
| Table 2 of 40 CFR 73 | 8,080* | 7,696* |

| Unit U1:
NO_x Requirements | |
|---|--|
| NO _x Limit | <p>Pursuant to 40 CFR 76, the Kentucky Division for Air Quality approves a Phase II NO_x Compliance Plan which includes a Phase II NO_x Averaging Plan for Unit 1. This plan is effective for calendar year 2013 through 2017. Under the compliance plan, this unit’s annual average NO_x emission rate for each year, determined in accordance with 40 CFR 75, shall not exceed the alternative contemporaneous emissions limitation (ACEL) of 0.40 lb/MMBtu in accordance with 40 CFR 76.11(d)(1)(i). If one or more of the units does not meet the requirement under 40 CFR 76.11(d)(1)(i), the owner or operator shall demonstrate that the actual Btu-weighted annual average emission rate for the units in the NO_x Averaging Plan is less than or equal to the Btu-weighted annual average rate for the same units, in accordance with 40 CFR 76.11(d)(1)(ii).</p> <p>In addition to the described NO_x compliance plan, this unit shall comply with all other applicable requirements of 40 CFR part 76, including the duty to reapply for a NO_x compliance plan and requirements covering excess emissions.</p> |

* The number of allowances actually held by an affected source in a unit account may differ from the number allocated by U.S. EPA. Neither of the aforementioned conditions necessitates a revision to the unit SO₂ allowance allocations identified in this permit (See 40 CFR 72.84). The number of allowances allocated to Phase II affected units by US EPA may change under 40 CFR Part 73.

2. SO₂ Allowance Allocations and NO_x Requirements for Unit U2

| Unit U2:
SO₂ Allowances | SO₂ Allowances for Years
2008 – 2009 (tons) | SO₂ Allowances for Years
2010 and Beyond (tons) |
|---|---|---|
| Table 2 of 40 CFR 73 | 8,140* | 7,855* |

| Unit U2:
NO_x Requirements | |
|---|--|
| NO _x Limit | <p>Pursuant to 40 CFR 76, the Kentucky Division for Air Quality approves a Phase II NO_x Compliance Plan which includes a Phase II NO_x Averaging Plan for Unit 2. This plan is effective for calendar year 2013 through 2017. Under the compliance plan, this unit’s annual average NO_x emission rate for each year, determined in accordance with 40 CFR 75, shall not exceed the alternative contemporaneous emissions limitation (ACEL) of 0.40 lb/MMBtu in accordance with 40 CFR 76.11(d)(1)(i). If one or more of the units does not meet the requirement under 40 CFR 76.11(d)(1)(i), the owner or operator shall demonstrate that the actual Btu-weighted annual average emission rate for the units in the NO_x Averaging Plan is less than or equal to the Btu-weighted annual average rate for the same units, in accordance with 40 CFR 76.11(d)(1)(ii).</p> <p>In addition to the described NO_x compliance plan, this unit shall comply with all other applicable requirements of 40 CFR part 76, including the duty to reapply for a NO_x compliance plan and requirements covering excess emissions.</p> |

* The number of allowances actually held by an affected source in a unit account may differ from the number allocated by U.S. EPA. Neither of the aforementioned conditions necessitates a revision to the unit SO₂ allowance allocations identified in this permit (See 40 CFR 72.84). The number of allowances allocated to Phase II affected units by US EPA may change under 40 CFR part 73.

3. SO₂ Allowance Allocations and NO_x Requirements for Unit U3

| Unit U3:
SO₂ Allowances | SO₂ Allowances for Years
2008 – 2009 (tons) | SO₂ Allowances for Years
2010 and Beyond (tons) |
|---|---|---|
| Table 2 of 40 CFR 73 | 10,979* | 11,001* |

| Unit U3:
NO_x Requirements | |
|---|--|
| NO _x Limit | <p>Pursuant to 40 CFR 76, the Kentucky Division for Air Quality approves a Phase II NO_x Compliance Plan which includes a Phase II NO_x Averaging Plan for Unit 3. This plan is effective for calendar year 2013 through 2017. Under the compliance plan, this unit’s annual average NO_x emission rate for each year, determined in accordance with 40 CFR 75, shall not exceed the alternative contemporaneous emissions limitation (ACEL) of 0.46 lb/MMBtu in accordance with 40 CFR 76.11(d)(1)(i). If one or more of the units does not meet the requirement under 40 CFR 76.11(d)(1)(i), the owner or operator shall demonstrate that the actual Btu-weighted annual average emission rate for the units in the NO_x Averaging Plan is less than or equal to the Btu-weighted annual average rate for the same units, in accordance with 40 CFR 76.11(d)(1)(ii).</p> <p>In addition to the described NO_x compliance plan, this unit shall comply with all other applicable requirements of 40 CFR part 76, including the duty to reapply for a NO_x compliance plan and requirements covering excess emissions.</p> |

* The number of allowances actually held by an affected source in a unit account may differ from the number allocated by U.S. EPA. Neither of the aforementioned conditions necessitates a revision to the unit SO₂ allowance allocations identified in this permit (See 40 CFR 72.84). The number of allowances allocated to Phase II affected units by US EPA may change under 40 CFR part 73.

4. SO₂ Allowance Allocations and NO_x Requirements for Unit U4

| Unit U4:
SO₂ Allowances | SO₂ Allowances for Years
2008 – 2009 (tons) | SO₂ Allowances for Years
2010 and Beyond (tons) |
|---|---|---|
| Table 2 of 40 CFR 73 | 13,618* | 13,645* |

| Unit U4:
NO_x Requirements | |
|---|--|
| NO _x Limit | <p>Pursuant to 40 CFR 76, the Kentucky Division for Air Quality approves a Phase II NO_x Compliance Plan which includes a Phase II NO_x Averaging Plan for Unit 4. This plan is effective for calendar year 2013 through 2017. Under the compliance plan, this unit’s annual average NO_x emission rate for each year, determined in accordance with 40 CFR 75, shall not exceed the alternative contemporaneous emissions limitation (ACEL) of 0.46 lb/MMBtu in accordance with 40 CFR 76.11(d)(1)(i). If one or more of the units does not meet the requirement under 40 CFR 76.11(d)(1)(i), the owner or operator shall demonstrate that the actual Btu-weighted annual average emission rate for the units in the NO_x Averaging Plan is less than or equal to the Btu-weighted annual average rate for the same units, in accordance with 40 CFR 76.11(d)(1)(ii).</p> <p>In addition to the described NO_x compliance plan, this unit shall comply with all other applicable requirements of 40 CFR part 76, including the duty to reapply for a NO_x compliance plan and requirements covering excess emissions.</p> |

* The number of allowances actually held by an affected source in a unit account may differ from the number allocated by U.S. EPA. Neither of the aforementioned conditions necessitates a revision to the unit SO₂ allowance allocations identified in this permit (See 40 CFR 72.84). The number of allowances allocated to Phase II affected units by US EPA may change under 40 CFR part 73.

Comments, Notes, and Justifications:

None

Permit Application:

The Louisville Gas & Electric Company submitted Phase II Permit Application for the Mill Creek Generating Station, dated December 7, 1995, and signed by Chris Hermann. The owners and operators of Louisville Gas and Electric Company must comply with the standard requirements and special provisions set forth in the application.

NO_x Compliance Plan:

Pursuant to 40 CFR 76, the Kentucky Division for Air Quality approves a Phase II NO_x Compliance Plan for Louisville Gas & Electric Company. The owners and operators of Louisville Gas & Electric Company must comply with the alternative contemporaneous emissions limitation for NO_x 0.40 lb/MMBtu for tangentially fired boilers and 0.46 lb/MMBtu for dry bottom wall-fired boilers. Each affected unit in an approved averaging plan is in compliance with the Acid Rain emission limitation for NO_x under the plan only if the requirements under 40 CFR 76.11(d)(1) are met.

Fee Comment

The permit fees are based on the significant permit revision fee for a Title V source (\$2,594.24) and the administrative permit revision fee for a Title V source (\$518.85). The total permit fees are \$3,113.09.