

STATE OF MINNESOTA
MINNESOTA POLLUTION CONTROL AGENCY

In the Matter of Harvest States Cooperatives

Proceedings to Develop
and Implement a State Implementation
Plan for the Ramsey County PM10
Nonattainment Area to Demonstrate,
Attain and Maintain Compliance with the
National Ambient Air Quality Standards
for particulate matter as required by
Sections 110, 172 and 189 of the Clean
Air Act, 42 U.S.C. §§ 7410, 7502 and 7513a.

FINDINGS AND
ORDER

The Minnesota Pollution Control Agency (MPCA), being fully advised in the premises hereby adopts the following Findings and Order.

FINDINGS

1. The state of Minnesota is obligated by sections 110(a), 172 and 189 of the Clean Air Act (CAA), 42 U.S.C. §§ 7410, 7502 and 7513a, to develop a plan which provides for "implementation, maintenance, and enforcement" of the primary and secondary national ambient air quality standards (NAAQS) promulgated by the U.S. Environmental Protection Agency (EPA) pursuant to section 109 of the CAA, 42 U.S.C. § 7409.
2. The EPA has promulgated requirements for the implementation plans required by section 110(a) of the CAA at 40 CFR pt. 51 (1991) (Requirements for Preparation, Adoption and Submittal of Implementation Plans).
3. The EPA has promulgated a primary and secondary 24 hour NAAQS for particulate matter under 10 microns (PM10) of 150 micrograms per cubic meter, 24 hour average concentration at 40 CFR pt. 50.6 (a). The standards are attained when the expected number of days per calendar year with a 24-hour concentration above 150 micrograms per cubic meter, as determined in accordance with 40 CFR pt. 50 Appendix K (1991), is equal to or less than one.

4. The EPA has also promulgated a primary and secondary annual NAAQS for PM10 of 50 micrograms per cubic meter, annual arithmetic mean at 40 CFR pt. 50.6 (b) (1991). The standards are attained when the expected annual arithmetic mean concentration, as determined in accordance with 40 CFR pt. 50 Appendix K (1991), is less than or equal to 50 micrograms per cubic meter.

5. The MPCA is a statutory agency of the state of Minnesota, Minn. Stat. § 116.02, subd. 1 (supp. 1991), charged with the responsibility to administer and enforce laws and promulgate rules to prevent water, air and land pollution throughout the state of Minnesota, Minn. Stat. chs. 115, 115B and 116 (supp. 1991).

6. The MPCA is empowered to promulgate standards and rules for the prevention, abatement or control of air pollution related, without limitation, to "sources or emissions of air contamination or air pollution, to the quality or composition of such emissions, or to the quality of or composition of the ambient air or outdoor atmosphere or to any other matter relevant to the prevention, abatement or control of air pollution." Minn. Stat. § 116.07, subd. 4 (supp. 1991). See Minn. Stat. § 116.07, subd. 2 (supp. 1991).

7. The MPCA is a statutorily delegated authority to "apply for, receive, and disburse federal funds made available to the state...for any purpose related to the powers and duties of the MPCA or the Commissioner. The Commissioner shall comply with any and all requirements of such federal law or such rules and regulations promulgated thereunder to facilitate application for, receipt, and disbursement of such funds." See Minn. Stat. § 116.03, subd. 3 (supp. 1991).

8. The MPCA has promulgated rules preventing any person from emitting any pollutant "in such an amount or in such a manner as to cause or contribute to a violation of any ambient air quality standard beyond such person's property line...." Minn. Rules pt. 7005.0020 (1991). The MPCA has adopted a secondary

ambient air quality standard for particulate matter, measured as total suspended particulates (TSP), of 150 micrograms per cubic meter, maximum 24 hour concentration not to be exceeded more than once per year. Minn. Rules. pt. 7005.0080 (1991). Exceedances of the federal 150 microgram per cubic meter NAAQS for PM10 are by definition exceedances of the state TSP standard, because PM10 is a subset of TSP.

9. The MPCA has also promulgated rules to control fugitive dust emissions which prohibit handling materials "in a manner which may allow avoidable amounts of particulate matter to become airborne," or using roads, driveways or open areas "without applying all such reasonable measures as may be required to prevent particulate matter from becoming airborne. The Commissioner may require such reasonable measures as may be necessary to prevent particulate matter from becoming airborne..." Minn. Rules pt. 7005.0550 (1991).

10. The MPCA has the authority to enforce any statute or rule related to air pollution by, among other things, adopting, issuing, entering into or enforcing "reasonable orders, schedules of compliance and stipulation agreements." Minn. Stat. § 116.07, subd. 9 (supp. 1991).

11. Minn. Stat. § 115.071 (supp. 1991) provides that the provisions of chapters 115 and 116 and "all rules, standards, orders, stipulation agreements, schedules of compliances, and permits adopted or issued" by the MPCA may be enforced by criminal prosecution, action to recover civil penalties, injunction, action to compel performance, or other appropriate action. Specifically, in an action to compel performance of an order of the MPCA, the regulated party may be required "to do and perform any and all acts and things within the defendant's power which are reasonably necessary to accomplish the purposes of the order." Minn. Stat. § 115.071, subd. 5 (supp. 1991).

12. The area bounded by the Mississippi River from Lafayette to Route 494, Route 494 east to Route 61, Route 61 north to I-94, I-94 west to Lafayette, and Lafayette south to the Mississippi River, in Ramsey County, Minnesota (hereinafter described as the "Ramsey County PM10 Nonattainment Area") is located within the Minneapolis-St. Paul Intrastate Air Quality Control Region (AQCR-131) defined at 40 CFR pt. 81.27 (1991). The Ramsey County PM10 Nonattainment Area described above was designated as a nonattainment area for the primary NAAQS for PM10 by operation of law in § 107(d)(4)(B)(i) of the CAA of 1990, (as announced and further clarified by the EPA in 56 FR 11101, March 15, 1991). Harvest States Cooperatives' facility known as St. Paul No. 2 is located within this nonattainment area.

13. Harvest States Cooperatives (hereinafter referred to as the Harvest States or Company), is a corporation organized and existing under the laws of the state of Minnesota, is authorized to do business and is doing business in the state of Minnesota at 935 Childs Road, in St. Paul in the county of Ramsey, state of Minnesota. The Company operates the Harvest States No. 2 facility (the Facility) located at 935 Childs Road, St. Paul, Ramsey County, Minnesota. The land is owned by the St. Paul Port Authority.

14. The Facility emits pollutants into the ambient air in sufficient quantities to require an air emission permit from the MPCA pursuant to Minn. Stat. § 116.081 (supp. 1991) and Minn. Rules pts. 7001.0030 and 7001.1210 (1991). The MPCA issued Harvest States No. 2 air emission permit No. 674T-87-OT-1 on April 3, 1987, for the operation of the Facility. That permit remains in effect today. This Order imposes requirements on Harvest States No. 2 (i.e. specified in Parts I. through VI. below) that will achieve and maintain compliance with the NAAQS for PM10.

15. DESCRIPTION OF PLANT: Harvest States No. 2 receives and Stores Grain for resale to the trade at its St. Paul Facility on the Mississippi River. During the year the Facility receives 4.5 million bushels of grain by truck and railcar to support its 4.5 million bushel annual grain throughput. Truck unloading emissions are controlled by a baghouse (emission point 1, truck receiving). Railroad car receiving and loadout emissions are controlled by a second baghouse (emission point 2). The center storage tanks and associated equipment emissions are controlled by a third baghouse (emission point 3). The west storage tanks and associated equipment emissions are controlled by a fourth baghouse (emission point 4). The barge loadout and associated equipment emissions are controlled by a fifth baghouse (emission point 5). The east storage tanks and associated equipment emissions are controlled by a sixth baghouse (emission point 6). The Facility has a 1.3 million bushel storage capacity. A more specific Facility description taken from the Facility permit which describes the emission points is attached as Exhibit 1, and is incorporated by reference herein.

16. The Facility is a potential major contributor of PM10 emissions in the Ramsey County PM10 Nonattainment Area, based on computer modeling performed by MPCA staff using the EPA guideline air quality dispersion model ISCST version 90346. It is a culpable PM10 emission source in the Ramsey County PM10 Nonattainment Area. Particulate matter emissions from the Facility contribute to a violation of both the PM10 NAAQS and the state particulate matter (TSP) standard.

17. The MPCA finds that if Harvest States No. 2 complies with the following requirements, and if the other facilities receiving orders under Minnesota's proposed PM10 SIP comply with the requirements of those orders, Minnesota will attain and maintain compliance with the NAAQS for PM10 in the

Ramsey County PM10 Nonattainment Area of AQCR 131. This Finding is based on the air dispersion modeling, which established the requirements contained in this Order. The modeling parameters for the Facility are those contained in Exhibit 1.

ORDER

NOW, THEREFORE, IT IS ORDERED, that Harvest States Cooperatives (Company) shall comply with the requirements listed below in operating its Harvest States, St. Paul No. 2 grain Distribution Terminal Facility (Facility) in order to demonstrate reasonable further progress and to attain, demonstrate and maintain compliance with the federal ambient air quality standards for PM10 as set forth in 40 CFR pt. 50.6 (1991).

I. HARVEST STATES COOPERATIVES PM10 EMISSION CONTROL PLAN

This Part of the Order is the Facility's PM10 emissions control plan, which is based upon air dispersion modeling that shows that the control plan (in conjunction with the control plans being required of other PM10 sources in the area) will attain compliance with NAAQS. Exhibit 1 is the Facility description which provides the modeling parameters used in the modeling technical support document, and describes the equipment subject to the Facility's PM10 emissions control plan. The Company shall operate and maintain the process and control equipment described in Exhibit 1 within the parameters described in Exhibit 1 except as specifically allowed or required by other provisions of this order. The remainder of this Part is divided into two sections. The first section contains the Facility emission limitations and operational requirements. The second section contains the Facility compliance demonstration requirements for the stack emissions and operating requirements.

A. Emission Limitations and Operational Requirements

1. Emission Limitations

The Company shall not exceed the following emission limits for PM10 and opacity for the equipment described in Exhibit 1:

<u>PM10 Emission Point Nos.</u>	<u>Emission Limit</u>	<u>Limitation Basis</u>
1	1.03 lb/hr	Minnesota SIP modeled PM10 National Ambient Air Quality Standard compliance
2	1.22 lb/hr	
3	0.75 lb/hr	
4	1.20 lb/hr	
5	0.63 lb/hr	
6	0.75 lb/hr	

Opacity

1, 3, 4, 6	5 percent opacity for fugitive emissions	Minn. Rules part 7005.2521 Subp. 3.A.
2	10 percent opacity for fugitive emissions	Minn. Rules Parts 7005.2521 subp. 3.B.
5	20 percent opacity for fugitive emissions	Minn. Rules Part 7005.2521, subp. 3.C.
1-4, 6	10 percent opacity from baghouse	Minn. Rules Part 7005.2521, subp. 3.D.

2. Operating Restrictions

a. Air Pollution Control Equipment

i. The Company shall maintain all air pollution control equipment in proper operating condition. The Facility described in Exhibit 1 of the Order shall not be operated unless the associated air pollution control equipment described in Exhibit 1 is also operated at all times.

ii. The Company shall maintain the pressure drop across the baghouse at a minimum of 1.5 inches water and a maximum of 8 inches of water.

B. Demonstration of Compliance With Emission Limitations

The Company shall demonstrate compliance with applicable conditions of this Order, Minnesota and federal statutes, federal regulations and Minnesota

rules by the following methods, and in accordance with Exhibit 2, which is attached and incorporated by reference herein, as specified in the table below:

<u>Emission Point Nos.</u>	<u>Pollutant</u>	<u>Compliance Determination Method</u>	<u>Minimum Frequency</u>	<u>Testing Procedures and/or Exhibit</u>
1-6	PM10	Stack Emissions Performance test	When required by the Manager, MPCA Air Quality Division (AQD) or an authorized EPA Official.	U.S. EPA method 201/201A for PM promulgated at 55 Fed. Reg. 14246 April 17, 1990) and method 202 for condensibles promulgated at 57 Fed. Reg. 65433 (Dec. 17, 1991).
1-6	Opacity	Visual Observations	Annually	40 CFR Part 60, Appendix A, Method 9.

II. CHANGES NOT REQUIRING A MODIFICATION OF THIS ORDER

The Company is authorized to make changes to the Facility without obtaining a modification to this Order as long as the change does not increase from any emission point, the PM10 emissions rate (either lbs./hr. or gr./dscf) or overall PM10 emissions, or alter equipment or parameters described in Exhibit 1, which forms the basis of the PM10 modeling. Activities that do require a modification to this Order prior to the Company commencing the modification include, but are not limited to, the following:

1. any decrease in stack emissions exit velocity;
2. any decrease in the exit point heat content of stack emissions;
3. any reduction in stack height below that contained in Exhibit 1;

4. any increase in the stack exit diameter above that contained in Exhibit 1; or

5. any construction or modification of structures that increase the effective structural dimensions.

Regardless of whether an Order amendment is required, the Company shall obtain a permit amendment if required by state or federal law.

III. RECORDKEEPING REQUIREMENTS

This Part III. of the Order requires the Company to keep specified records so that EPA and the MPCA can evaluate the Company's compliance with the Order. The first section identifies which records the Company must keep. The second section requires the Company to keep records in the form and with the accessibility needed for EPA and MPCA staff inspection.

A. The Facility Recordkeeping Requirements

1. Permanent Records

The Company shall permanently maintain the following information together with all amendments, revisions, and modifications to this information.

a. Design, Construction and Operation Information. The Company shall maintain a file or files of information on the design, construction and operation of each emission facility, emission source, fuel system, stack, structures pertinent to modeling for downwash, and any other information required to conduct PM10 ambient air quality modeling of emissions from the Facility. The file or files shall also include all information required to demonstrate that the equipment identified in Exhibit 1 is installed as described in that Exhibit.

Where an activity has been undertaken pursuant to Part II. of this Order, the file or files shall include a description of each activity and all information required to demonstrate that the activity complies with each applicable Part II. requirement.

b. PM10 Emission Compliance Demonstration Plans. The Company shall maintain a file at the Facility which includes this Order and the Exhibits attached and incorporated by reference in this Order, and all plans which upon approval by the MPCA or EPA become integral and enforceable parts of this Order.

2. Non-Permanent Records

The Company shall retain the information identified below for a minimum of six years following the date on which the information was obtained, despite any document retention policy to the contrary. This retention period shall be automatically extended upon the AQD Manager's written request.

a. Monitoring, Testing, and Other Records. The Company shall maintain files containing records of all measurements, including: all performance stack testing measurements and operating conditions during the performance stack tests; all monitoring device calibration checks; all adjustments and maintenance performed on these systems or devices; all data and record keeping set forth in this Part, and all other information required or applicable to verify compliance with this Order.

b. PM10 Emissions and Operations Records. The Company shall maintain files containing information to demonstrate compliance with the PM10 emissions and opacity limitations and fugitive emissions requirements of this Order.

c. Startup, Shutdown, Bypass, and Breakdown Records. The Company shall maintain files containing records for each startup, shutdown, bypass and breakdown for each piece of process equipment, control equipment, fuel supply system, emission stack, monitoring system and any other piece of equipment to which this Order applies.

d. Excess Emissions and Noncompliance with Operational Requirements Records. The Company shall maintain files which record each exceedance of an emission limitation or opacity limitation, and any noncompliance with an operational requirement at the Facility, for the emission points, control equipment or fugitive source subjects to the limitations and operational requirements of this Order. The record shall include for each period of exceedance or noncompliance, a description of the exceedance or noncompliance, its cause, the magnitude of the exceedance, and the date and time of commencement and cessation of the exceedance or noncompliance.

B. Record Maintenance

The Company shall maintain all required documents, records, reports and plans in a form suitable for determination of the Facility's compliance with this Order by EPA or MPCA staff. The Company shall maintain the information at the Facility in files which are easily accessible for inspection by EPA or MPCA staff, and are available for inspection at all reasonable times.

IV. REPORTING REQUIREMENTS

A. Notifications

1. Notification of Process or Control Equipment Shutdown

In accordance with Minn. Rules pt. 7005.1880 (1991), the Company shall notify the Commissioner at least 24 hours in advance of: (1) a shutdown of any control equipment governed by this Order, or (2) a shutdown of any process equipment governed by this Order if the process equipment shutdown will

cause an increase in PM10 emissions. At the time of the notification, the Company shall notify the Commissioner of the cause of the shutdown and the estimated duration. The Company shall also notify the Commissioner when the shutdown is over.

2. Notification of Process or Control Equipment Breakdown

In accordance with Minn. Rules pt. 7005.1880 (1991), the Company shall notify the Commissioner immediately of: (1) a breakdown of more than one hour duration of control equipment governed by this Order, or (2) a breakdown of process equipment governed by this Order if the process equipment breakdown causes an increase in the emissions of PM10. When reporting a breakdown, the Company may report both the breakdown and subsequent startup during the same notification only if the subsequent startup will occur during the same day and if the Company knows the time of the subsequent startup. In the event that the subsequent startup is on the next day, the Company shall notify the MPCA of the startup at that time. In the event that the Company uses a single notification to report both the breakdown and subsequent startup, and if the anticipated startup time is delayed, the Company shall notify the MPCA of the new startup time. This second notification shall be provided at or before the time originally projected for the subsequent startup. In this case, the Company shall also notify the MPCA when the breakdown is over.

3. Notification of Performance Tests

The Company shall notify the AQD Manager of its intent to conduct performance stack tests required pursuant to this Order not less than 30 days prior to conducting each performance stack test as required by Minn. Rules pt. 7005.1860, subp. 6 (1991). The Company shall schedule and hold a pretest meeting with the MPCA staff at least seven days prior to conducting a performance stack test and shall submit to the MPCA performance stack test

plans, protocols and schedules at least 15 days prior to the test meeting. The test date and protocol are subject to the AQD Manager's approval and shall have been approved by the AQD Manager at least 15 days before the planned test date.

4. Notification of Changes to be Made Pursuant to Part II. of the Order

As noted in Part II of this Order, the Company may undertake certain changes to the Facility without obtaining a modification of this Order. However, if the Company does make such a change, and if the change in any way affects PM10 emissions (reduces the amount or changes the concentration, size, character, velocity, direction, or location of PM10 emissions) the Company shall notify the AQD Manager in writing at least 30 days prior to undertaking the change. The notification shall describe the change and why it does not require a modification of the order. The Company must also obtain a permit amendment if required by state or federal law.

B. Annual Reports

The Company shall submit to the AQD Manager each calendar year, a report that contains the following information: a record of data used in calculating PM10 emissions, and calculations of the PM10 emissions; a record of each startup, shutdown, bypass and breakdown of process and control equipment; and a summary record of excess PM10 emissions, opacity exceedances, and noncompliance with fugitive emissions requirements (or the Company shall state if no exceedances or noncompliance conditions occurred in the calendar year). The report shall include the information required by Part IV.A. Annual reports shall be postmarked within 30 days following the end of each calendar year.

C. Performance Stack Tests Reports

The Company shall submit to the AQD Manager, reports of each performance stack test conducted pursuant to this Order. Performance stack test reports shall be postmarked or delivered no later than 45 days following completion of the performance stack test.

V. GENERAL CONDITIONS

A. Before the Company performs any construction, modification or operation of equipment not specifically allowed by Part I. or II. of this Order and which results in additional PM10 emissions, from any emission points or changes to PM10 emission patterns assumed in the modeling conducted to attain, maintain and verify compliance with the PM10 NAAQS, the Company shall obtain a modification of this Order, and the construction, modification or operation shall be governed by Part V.B. below. Any modification to this Order approved by the MPCA shall not revise the federally enforceable requirements of the SIP until approved by EPA.

B. Harvest States Cooperatives shall not construct any new PM10 sources or make modifications to existing PM10 sources at its St. Paul No. 2 Facility that are defined as "major stationary sources" or "major modifications" under 40 CFR § 52.24 (1991) until EPA approval of the Minnesota Offset Rule, or its equivalent. After such approval, the permitting of any new PM10 sources or modifications at the Facility will be done under the Offset Rule or its equivalent, until the Ramsey County PM10 Nonattainment Area has been redesignated an attainment area.

C. This Order does not relieve Harvest States Cooperatives of the obligation, in undertaking all actions required by this Order, to comply with all applicable local, state and federal laws and regulations, including, but not limited to, federal new source performance standards, and laws and regulations related to occupational safety and health. In the event there is a conflict in applicable federal or state or local laws or regulations, the more stringent of the conflicting provisions shall apply.


D. This Order shall be binding upon the Company and its respective officers, employees, successors and assigns. The Company shall notify the MPCA

prior to ceasing its operations at the Facility.

E. This Order mandates actions and establishes limits necessary to attain, maintain and verify compliance with the federal PM10 NAAQS by Harvest States Cooperatives. To the extent that any federal or state statute, rule, permit, order, stipulation agreement, consent decree or schedule of compliance now in force or subsequently issued imposes limits and requires actions additional to or more stringent than those required in this Order, Harvest States Cooperatives shall also comply with the requirements of the federal or state statute, rule, permit, order, stipulation agreement, consent decree or schedule of compliance.

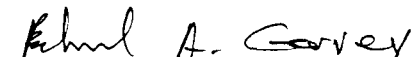
F. This Order for Harvest States Cooperatives is effective upon the date that it is signed by the MPCA Board Chair and by the Commissioner of the MPCA.

IT IS SO ORDERED BY THE MINNESOTA POLLUTION CONTROL AGENCY



Charles W. Williams
Commissioner
Minnesota Pollution Control Agency

Date: 1-26-93


~~Daniel D. Foley, M.D.~~ Edward A. Corvey
Vice Chair
Minnesota Pollution Control Agency Board

Date: 1-26-93

EXHIBITS:

1. Facility Description
2. Performance Test Procedures

EXHIBIT 1

FACILITY DESCRIPTION

I. Overview

The Permittee operates the Harvest States Cooperative Grain Terminal elevator No. 2 at 935 Childs Road in St. Paul, Minnesota. The plant has 1.3 million bushels of grain storage capacity in the east, the center and the west storage tanks. The terminal receives 4.5 million bushels of grain annually by truck and railroad car, the grain is stored and then shipped by truck, railroad car and barge.

II. Emission Sources and Pollution Control Equipment

The emission sources and associated process equipment, air pollution control equipment and monitoring equipment at the emission facility described above include the following:

<u>Source No. 1</u>	Facility I.D.	Truck Receiving
Process Equipment -	Type:	Truck dump, pit conveyor and bi-fold doors at entrance end of driveway
	Date Installed:	1961
	Capacity:	240 tons/hr
Control Equipment -	Type:	Baghouse fabric filter
	Mfr.:	Buhler-Miag Inc.
	Model:	ASFA - 64/10 Type A with 746 sq. ft. filter area
	Date Installed:	1976
	Air Flow:	12,000 cfm @ 70°F
	Air to Cloth Ratio:	16.1 to 1
	Dust Disposal:	Return to truck pit
Monitoring Equipment -	Type:	None
Stack Parameters -	Height:	40 ft.
	Inside Exit Size:	3 sq. ft.

<u>Source No. 2</u>	Facility I.D.	Railroad Car Receiving & Loadout
Process Equipment -	Type:	1. Boot and head hoods on elevator leg no. 3 (rail receiving leg)
		2. Hopper car unloading system
		3. Hopper car, truck and dust loadout
		4. Oats Cleaner
	Date Installed:	1961

Capacity: 180 tons/hr railroad car receiving
210 tons/hr railroad car loadout
150 tons/hr truck loadout
5,000 bushels/hr oats cleaner

Control Equipment - Type: Baghouse fabric filter
Mfr.: Buhler-Miag Inc.
Model: ASFA - 64/10 Type A with 746 sq. ft. filter area
Date Installed: 1976
Air Flow: 14,200 cfm @ 70°F
Air to Cloth Ratio: 19.0 to 1
Dust Disposal: Return to truck pit

Monitoring Equipment - Type: None

Stack Parameters - Height: 40 ft.
Inside Exit Diameter: 3.5 sq. ft.

Source No. 3 Facility I.D. Center storage tanks

Process Equipment - Type: Elevator leg no. 2 head and boot hoods. Center storage tank gallery and basement conveyors.
Date Installed: 1961
Capacity: 240 tons/hr

Control Equipment - Type: Baghouse fabric filter
Mfr.: Buhler-Miag Inc.
Model: ASFA 44/10 with 513 sq. ft. filter area
Date Installed: 1976
Air Flow: 8,760 cfm air @ 70°F
Air to Cloth Ratio: 17.1 to 1
Dust Disposal: Dust tank

Monitoring Equipment - Type: None

Stack Parameters - Height: 75 ft.
Inside Exit Height Size: 2.5 sq. ft.

Source No. 4 Facility I.D. West storage tanks

Process Equipment - Type: Elevator legs no. 1 and no. 4 head and boot hoods. West storage tanks gallery and basement conveyors
Date Installed: 1961
Capacity: 240 tons/hr

EXHIBIT 2

PERFORMANCE TEST PROCEDURES

PM-10

A. Independent Testing Company

The Company shall engage an independent testing company to conduct performance tests. However, performance tests that are not required by the Order or requested by the MPCA pursuant to Minnesota Rules part 7005 may be conducted by the Company with written permission of the Minnesota Pollution Control Agency (MPCA) Air Quality Division (AQD) Manager. The Company may furnish electrical service, laboratory facilities and other such facilities to an independent testing company in any case.

B. Test Location Approval

The location, number of test ports, and the need for straightening vanes must be approved by the AQD Manager before any test. Information regarding ports (location from top of stack to bottom, diameter, visual schematic) must be provided seven (7) days before the pretest meeting.

C. Pretest Meeting

For the purpose of establishing conditions and requirements of a performance test, a pretest meeting with the MPCA staff, Company, and testing company personnel must be held at least seven (7) working days prior to the performance test. The test date must be approved by the Air Quality Division (AQD) Compliance Determination Unit (CD Unit) staff at least 30 days before the planned testing date. Notification must be given in writing.

D. Test Methods

1. General

Performance tests shall be conducted in accordance with the following requirements:

- a. U.S. Environmental Protection Agency (U.S. EPA) Reference Methods (40 C.F.R. 60.344, Appendix A, 40 CFR 51, Appendix M, and 40 CFR 61, Appendix B);
- b. Deviations from the U.S. EPA Reference methods, even if authorized under Minnesota Rules, procedures specified below, or special conditions of the Order or requirements specified by the AQD Manager, shall be permissible only with the written approval of EPA.
- c. Where a Method is referenced, the most current edition should be used.

2. PM-10 (particulate matter less than or equal to 10 micrometers) shall be determined by U.S. EPA methods 201, or 201A in Appendix M of 40 CFR 51, and condensible matter shall be determined by Method 202 in Appendix M of 40 CFR 51.
3. Opacity shall be determined by U.S. EPA method 9. Where Method 9 cannot be used to determine opacity limitations that permit exceedances of a baseline opacity limit for specified numbers of minutes, the data reduction procedures listed in D.2. shall be used to determine compliance.
 - a. Opacity observations shall be performed by a certified observer in accordance with U.S. EPA Method 9 throughout the test period, and the data reduced with the procedures listed below. Opacity shall be observed during the period of each test run for sixty consecutive minutes.
 - b. One series of readings is required for each condition tested. The test will comprise 240 consecutive readings and shall be obtained concurrently with test run(s) for particulate matter, where applicable. Copies of the opacity form showing all readings and required notation shall be included in the performance stack test report.
 - c. The results of continuous monitoring by transmissometer which indicate that the opacity at the time visual observations were made was not in excess of the standard are probative but not conclusive evidence of the actual opacity of an emission, provided that the owner or operator shall meet the burden of proving that the instrument used meets (at the time of the alleged violation) Performance Specification 1, has been properly maintained and (at the time of the alleged violation) calibrated, and that the resulting data have not been tampered with in any way.
 - d. The opacity standards set forth in a regulation shall apply at all times except during periods of start-up, shutdown, malfunction, and as otherwise provided in the applicable compliance document, federal regulation or Minnesota rule.
 - 1) Data Reduction. Except as provided in item D(2), opacity shall be determined as an average of 24 consecutive observations recorded at 15-second intervals. Divide the observations recorded on the record sheet into sets of 24 consecutive observations. A set is composed of any 24 consecutive observations. Sets need not be consecutive in time and in no case shall sets overlap. For each set of 24 observations, calculate the average by summing the opacity of the 24 observations and dividing this sum by 24. Record the average opacities on a record sheet.
 - 2) In the event that an applicable standard of performance for opacity allows an excursion above the standard for a specified number of minutes in a one-hour period, compliance with that excursion will be determined as follows:

- a) If only one excursion limitation is specified, count the number of observations above the applicable standard and multiply that number by 0.25 to determine the number of minutes of opacity observations above the standard. Compare the time above the opacity limit to the time allowed in the excursion. A violation will be recorded if the number of minutes above the standard exceeds the time allowed or if the average value of any set of four opacity observations is greater than the excursion opacity limit.
- b) If two excursions above a standard are allowed, count the number of observations that lie between the standard and the lower excursion opacity limit. If the number of observations multiplied by 0.25 is greater than the number of minutes allowed, the observations with lowest values shall be used to determine compliance with that excursion and the remaining, highest, values will be carried forward to determine compliance with the higher excursion limit.

In determining compliance with the higher excursion, count the number of readings carried over from the lower excursion plus the number of readings that are higher than the lower excursion opacity limit. If the total number of readings multiplied by 0.25 is greater than the number of minutes allowed then a violation is recorded. In addition, a violation will be recorded if the average value of any four opacity observations is greater than the higher excursion opacity limit.

- c) Any violation of an excursion to an opacity standard will be expressed as the total number of minutes the opacity excursion limit is exceeded during a period of consecutive 15-second observations.

E. Test Conditions

Combustion Sources and Process Sources shall conduct performance tests under conditions that are encountered during normal production activities which would result in the high-test potential emissions for each air pollutant.

1. Combustion Sources

a. Existing Sources and Other Sources not subject to New Source Performance Standards.

- 1) Combustion emission sources such as furnaces, kilns, boilers, etc. shall be operated during the test at 50-100% of the manufacturer's rated capacity as specified by the MPCA or by U.S. EPA.
- 2) Existing boilers that had been derated shall be operated during the test at a minimum of 50-100% of the derated capacity allowed by the order as specified by the MPCA or by U.S. EPA.

- 3) For unit sizes below 50 million British thermal units per hour (MMBtu/hr) some of the test conditions and requirements listed in Part E.1.c. of this Exhibit, may be waived by the AQD Manager to meet simplified equipment and operating modes of smaller installations.
- b. Sources subject to New Source Performance Standards (NSPS).
- 1) Combustion emission sources such as furnaces, kilns, boilers, etc. shall be operated during the test at 100% of the manufacturer's rated capacity.
 - 2) The only exceptions to this are where the Company has documented the fact that the source is physically incapable of operation at design capacity and/or there is a State/Federal enforceable order or permit limiting operation to a reduced capacity. In case the source is derated, the test shall be conducted at 100% of the allowed derated capacity.
 - 3) The amendments to NSPS Subpart A - General Provisions published in the Federal Register of December 27, 1985, require a minimum total time of opacity observations of three (3) hours for the purpose of demonstrating initial compliance. Opacity observations shall be conducted concurrently with the initial performance test for particulates.
 - 4) Where compliance with opacity regulations is to be demonstrated nonconcurrently with stack testing on a subject boiler or stack, three 1-hour sets of opacity observations shall be conducted under the following conditions:
 - a) Observation shall be performed by a certified opacity evaluator in accordance with Method 9, 40 CFR Part 60, Appendix A.
 - b) Two opacity observation sets shall be performed while the unit is operated at the conditions required by Part E.1.b and E.1.c. of this Exhibit.
 - c) One opacity observation set shall be performed while the unit is operated at maximum attainable load during a normal soot blowing cycle which is consistent with maximum frequency and duration normally experienced for the total testing period. Boilers operating in a peaking or cycling mode are required to operate the unit during this run at a changing load representative of normal operation.
 - 5) The source must meet all the conditions found at 40 CFR Part 60 subp. A - General Provisions; as well as the specific NSPS requirements according to source type.

c. The following requirements apply to all combustion sources:

- 1) At least one of the three test runs shall be conducted during a normal soot blowing cycle which is consistent with maximum frequency and duration normally experienced for the total testing period. The arithmetic average of the three runs will form the basis for a compliance determination.
- 2) Stoker-fired boilers and other sources as determined by the Division Manager, are required to pull ashes during one or more test runs. The arithmetic average of the three runs will form the basis for a compliance determination. This must coincide with the run when soot is being blown.
- 3) Boilers operating in a peaking or cycling mode are required to operate the unit at a load change representative of normal operation during one of the test runs. This run may coincide with the run when ashes are being pulled and soot blown. The arithmetic average of the three runs will form the basis for a compliance determination.
- 4) Sources equipped with only mechanical collector, venturi scrubbers without variable throat and hot-side electrostatic precipitators are required to conduct an additional test for particulate matter, while the combustion source is operating at 50% of the design capacity. Soot blowing and pulling of ashes shall be included during one of the runs as specified in paragraphs E.1.c.1) and E.1.c.2) of this Exhibit.
- 5) Unless the Company is engaged in a compliance schedule that involves rehabilitation before testing, the Company shall not conduct any major rehabilitation or cleaning before the test other than normal maintenance operations done on a routine basis. The Company shall describe in the test report any maintenance work done before the test and indicate how often this is done.
- 6) The Company shall burn "the worst quality fuel" allowed by the compliance document conditions. Fuel sampling and analysis shall be performed according to ASTM Reference Methods, or as approved by U.S. EPA and the MPCA.
- 7) Each unit shall be operated under parameters as specified by the Agency which shall be defined as maintenance of operational parameters at levels consistent with levels maintained during daily usage of the boiler(s) at maximum load. Operating parameters include:
 - a) MW (mega watts) gross loading
 - b) heat input
 - c) steam flow
 - d) steam temperature
 - e) steam pressure
 - f) combustion air flow (lb/hr)

- g) soot blowing cycle
 - h) coal feed rate to boiler (T/hr)
 - i) oxygen levels at economizer inlet
- 8) Operation of electrostatic precipitators (ESPs) shall comply with "normal operating conditions". "Normal operating conditions" for an ESP reflect normal levels of:
- a) FGC injection rates, where applicable
 - b) primary and secondary volts
 - c) primary and secondary amps
 - d) inlet flue gas temperature
 - e) ash removal
 - f) spark rate
 - g) rapping cycle
- 9) Operation of other control devices such as baghouses, multiclones or scrubbers shall comply with "normal operating conditions". "Normal operating conditions" reflect normal levels of:
- a) pressure drop across control device
 - b) inlet flue gas temperature
 - c) cleaning cycle
 - d) ash removal
 - e) liquid to gas ratio
- 10) All the operating loads and parameters must be documented in the test report showing chart recordings and calculations.
- 11) All the continuous monitor strip charts for the day(s) of testing shall be submitted. These shall be dated, signed, and all the chart factors must be sufficiently explained to avoid any kind of ambiguity in reading the charts.
- 12) Opacity observations shall be performed by a certified opacity observer in accordance with U.S. EPA Method 9, 40 CFR Part 60, Appendix A, throughout the test period. Opacity shall be observed during the period of the test for sixty consecutive minutes; i.e. one series of readings for each condition tested. The test will comprise 240 consecutive readings and shall be obtained concurrently with the run of the particulate sampling test when soot is being blown and ashes pulled. The appended opacity data form should be used and copies included in the report. U.S. EPA Method 9 shall be followed. Data reduction shall be according to D.3.d of this Exhibit.

2. Process Sources

- a. Non-combustion emission sources not subject to NSPS shall be operated during the test at 50-100% design capacity or maximum capacity allowed by the permit (as specified by the MPCA or U.S. EPA) and the owner/operator of the facility shall furnish adequate demonstration of the production at the time of the test.

- b. Sources subject to NSPS shall be operated using the test at 100% of the design capacity. The only exceptions to this are where the Permittee has documented that the source is physically incapable of operation at design capacity and/or there is a State/Federal enforceable order or permit limiting operation to a reduced capacity. The source must meet all the requirements found at 40 CFR Part 60, subp. A - NSPS General Provisions; as well as the specific requirements according to the source type.
- c. Sources may be required to conduct additional tests at reduced capacities if the Division Manager defines it as a necessary condition to represent "the worst case operation".
- d. NSPS sources, initial test: Pursuant to the amendments to the opacity provisions published in Federal Register of December 27, 1985, sources subject to New Source Performance Standards are required a minimum total time of opacity observations of three (3) hours for the purpose of demonstrating initial compliance. Opacity observations shall be conducted concurrently with the initial performance test for particulates.
- e. Opacity shall be observed during the period of the test for sixty consecutive minutes i.e. one series of readings for each condition tested. The test will comprise 240 consecutive readings and shall be obtained concurrently with a run of the particulate sampling test. U.S. EPA Method 9. Opacity readings of portions of plumes which contain condensed, uncombined water vapor shall not be used for purposes of determining compliance with opacity standards.
- f. In case opacity measurements are conducted at a different time than during the particulate test, the observation of opacity shall be conducted at all the conditions required by paragraphs E.2.a., E.2.b. and E.2.c. of this Exhibit.
- g. The source shall use the "dirtiest" feed materials that are allowed to be used.
- h. All operating loads and parameters must be documented in the test report showing all chart recordings and calculations. All charts must be dated, signed and all the chart factors must be sufficiently explained to avoid any kind of ambiguity in reading the charts.

3. Runs

A test shall comprise three runs of at least one hour each unless specified otherwise by the Agency. The time of sampling at each point shall be a minimum of two (2) minutes, and the minimum sample volume shall be 32 SCF (dry).

The "dirtiest" raw material shall be processed or handled as specified by the Agency.

4. Pitot Tube Calibration

Pitot tube inspections and necessary calibrations shall be done at least once per year or after any incident which may affect calibration. Gas meter calibrations shall be done at a frequency such that no more than 1000 CFM shall be measured between calibrations. These calibration sheets must be included in the test report.

5. Orsat Analysis

Two gas samples for Orsat analysis must be taken at 1/2 hour intervals, or one continuous sample may be collected for each run.

6. Multiple Particulate Samples

If multiple samples are to be taken using the same nozzle, probe, and cyclone, the particulate collected in these must be removed after each run. Cleaning of this front half of the apparatus should be with distilled water followed by acetone. The probe should be scrubbed with a stiff brush while irrigating with water followed by acetone, as prescribed in U.S. EPA Method 5.

7. Filters

Filters shall be numbered and filter number reported with the initial and final filter weights. Weights should be recorded in a weights book which must be available for inspection. Front half washings shall be reported independently of filter catch.

8. Gas Velocities

The gas velocities used in calculating stack gas flow rates and pollutant mass emission rate shall be those obtained while collecting the sample.

9. condensible Particulate Matter

In the event that emissions from any industrial process equipment contain condensible vapors which condense at standard conditions of temperature and pressure, condensible particulate matter may be determined by U.S. EPA Method 202, provided that the test either shall use the same sampling train or shall use an alternate sampling train with the same filter temperature as is used to determine noncondensable particulate matter emissions from the source. Condensible vapors includes organic and/or inorganic condensibles.

10. Safety and Access

A safe working platform and access thereto shall be provided at the sampling site.

11. Good Testing Practices

Failure to follow good testing practices will jeopardize the validity of the test and may lead to rejection of one or more runs.

Failure to submit the required information on plant operating conditions, fuel analysis, visible emissions, etc. shall be cause for the Division Manager not to approve the performance test.

F. Witnessing

A compliance test may be witnessed by either Air Quality Division or U.S. EPA staff.

G. Reporting

1. Responsibility to Submit Test Results

The applicable Required Data for Combustion Sources form, or the Required data for Process Emissions form located in Exhibit 2 shall be signed by the responsible supervisor of the facility and shall be submitted to the Supervisor, Compliance Determination Unit with 1 copy of the performance test results.

It shall be the responsibility of the owners/operators of the source to furnish the information required in Exhibit 2.

All performance test reports shall be submitted to the Supervisor, Compliance Determination Unit whether or not the test data indicates compliance with applicable emission limitations; and whether or not the test was conducted for the purpose of demonstrating compliance with an applicable emission limit.

The report should clearly state members of the testing team and a responsible party should sign the report, as well as the principal author(s).

2. Report Format

a. Summary Tables

The report shall include a summary table(s) showing the most relevant information, data, and results. This should include the applicable emission rate: pounds per million BTU, grains per dry standard cubic foot or pounds per hour calculated by all of the following methods:

- 1) The dry standard volumetric method
- 2) The ratio of areas method
- 3) The F factor method (for pounds per million Btu only)

b. Schematic Drawing

The report shall include a schematic drawing of the entire flue gas exhaust system from the initial starting process (feed) to the top of the stack. Show location of the sampling points and include all pertinent dimensions (inside diameter of stack, and distances below and above sampling ports). Include all flow disturbances, i.e., elbows, dampers, fans, constrictions, collection equipment, etc.

c. Identification of Sources

The report shall clearly state what is being tested; for example, "Babcock & Wilcox Boiler, Model 169, Designated Unit #3 by XYZ Municipal Power Plant, firing pulverized Eastern Kentucky coal at an average rate of 10,000 pounds per hour, and producing an average of 110,000 pounds of steam per hour. This unit exhausts through a Western Multiclone. Flyash reinjection is permanently disconnected."

d. Completion of forms in Exhibit 2

The use of Required Data for Combustion sources form and Required Data for Process Emissions form located in Exhibit 2 shall be completed at the time of the test run. Separate forms shall be completed for each run. The forms shall be submitted as part of the report, they must be complete and accurate.

e. The Stack Test Report Format Guidelines developed by AQD are recommended for incorporation into testing firm report formats.

3. Report Submittal

The performance test report shall be submitted to:

Supervisor, Compliance Determination Unit
Compliance and Enforcement Section
Air Quality Division
Minnesota Pollution Control Agency
520 Lafayette Road
St. Paul, Minnesota 55155

4. Upon written verification from the AQD Manager that compliance was demonstrated under conditions of the performance test, the written verification shall constitute a modification of the compliance document that required the performance test. This modification shall allow the owner or operator to operate the emission unit under the conditions of the test. The emission facility shall not be operated at a production rate or under alternative operating parameters which might cause an increase in emissions over the conditions tested unless another performance test is conducted at the new condition and the test demonstrates compliance under the new condition and written authorization to proceed is given by the AQD Manager.

5. Submittal Schedule

Performance test reports shall be submitted no later than 45 days following completion of the performance test, or as required in compliance document (permit, stipulation agreement, Administrative Penalty Order, etc.), to the Supervisor, Compliance Determination Unit.

The Permittee is also responsible for providing a microfiche copy of the Performance test report within 105 days of testing. To microfiche

a copy of a performance test report, contact the State Department of Administration-Micrographics Services Unit at (612)296-9708. The complete permit file number, complete facility name, and the exact date of testing must be provided.

REQUIRED DATA
for
COMBUSTION SOURCES

Company Name _____

C. Fuel Input

1. Itemize all fuels and materials that are added to the combustion process during the test period. Attach ultimate analysis of the fuel.

FUEL DESCRIPTION	INPUT	&	As Rec'd	HEAT INPUT
Coal: State, City, Mine	(LBS/HR)	MOISTURE	(BTU/LB)	(BTU/HR)
Oil: Specify Grade	(GAL/HR)	As Rec'd	(BTU/GAL)	

No. 1

No. 2

No. 3

TOTAL _____

2. Are the above fuels substantially the same as those normally burned?
_____. If not, explain _____.

3. Are the above fuels normally burned in the proportions shown above?
_____. If not, explain _____.

4. Describe any changes anticipated for procurement of fuels within the next twelve (12) months. _____.

D. Equipment & Operating Data

1. Furnace No. _____.
2. Furnace Mfg. _____.
3. Type of Firing _____.
4. Operating under normal operating conditions No _____;
Yes _____.
5. Specify normal soot blowing frequency:
 - a) source operating time blowing soot: _____ minutes/shift
 - b) number of shifts per day _____.
6. Specify soot blowing time during the test: start _____ end _____.
When was the last time before the test that you blew soot: (date & time) _____.
7. Specify normal ash pulling frequency:
 - a) source operating time pulling ashes: _____ minutes/shift
 - b) number of shifts per day _____.
8. Specify ash pulling time during the test: start _____ end _____.
When was the last time before the test that you pulled ashes: (date & time) _____.
9. Date and procedures of last maintenance/cleaning of the boiler (please attach) _____.

E. Instrument Data

1. Include a copy of chart records during test for the combustion efficiency indices (CO, O₂, CO₂, combustibles, steam flow, air flow, etc.)

F. Air Pollution Control Equipment

1. Type/model control equipment _____.
2. Air pressure drop across the control equipment _____.
3. Air flow through the control equipment _____.
4. Was the control equipment operating normally? _____.
5. Date and procedures of last maintenance/cleaning of control equipment.

_____.

Plant Operator's Certification

I certify that the information submitted herein is accurate and correct and that no information requested was withheld from the Division Manager.

By _____, Position _____

REQUIRED DATA
for
PROCESS EMISSIONS

Company Name _____

C. Equipment & Operating Data

1. Process Equipment No./Ident. _____
2. Process Equipment Description _____

3. Process equipment operating under normal operating conditions?
No _____ Yes _____ Process rate during the test _____
(raw materials or finished product)

D. Instrument Data on Process Equipment

1. Include copy of production records or instrumentation which indicates rate of production or operation of the equipment, i.e. units per hour, lbs. per hour, pressure, air flow, etc.

E. Air Pollution Control Equipment

1. Type/model of control equipment _____
2. Air pressure drop across the control equipment _____
3. Air flow through the control equipment _____
4. Was the control equipment operating normally? _____
5. Data of last major maintenance/cleaning of control equipment _____

F. Plant Manager's Certification

I certify that the information submitted herein is accurate and correct and that no information requested was withheld from the Division Manager.

By _____, Position _____