



State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION

JON S. CORZINE
Governor

LISA P. JACK
Commissioner

CERTIFIED MAIL

Michael Smedley
General Manager
Trigen-Trenton Energy Co. L.P.
320 South Warren St.
Trenton, NJ 08608

RE: Amended Alternative Maximum Emission Rate (AEL) for Nitrogen Oxides (NO_x)
Pursuant to N.J.A.C. 7:27-19.13 and significant modification of operating permit
#BOP040002

NAME: Trigen-Trenton Energy Co, L.P.

PLANT LOCATION: Trigen-Trenton Energy Co. LP
320 South Warren St.
Trenton, NJ 08608

APC PLANT ID NO.: 61015

SOURCE DESCRIPTION: Two (2) Cooper Bessemer (Model: LSVB-20-GDT) 4-
stroke, distillate oil or dual fuel fired, Diesel Internal
Combustion Engines.

APPROVAL DATE: January 11, 2007



Dear Mr. Smedley:

The New Jersey Department of Environmental Protection (Department) has reviewed Trigen's Proposed NO_x Control Plan, dated April 7, 2006, in which Trigen requested an amended alternative maximum NO_x emission limit (AEL). The Department approved the existing AEL on November 4, 2005 based on information submitted by Trigen in the original Proposed NO_x Control Plan, dated July, 2004, and supplemental information submittals dated 10/15/04 (Further control device evaluation) and 2/1/05 (Clarification of AEL details and revised cost analysis for SCR). The AEL, which was approved on November 4, 2005, allows the Trigen engines to emit 12.0 g/bhp-hr during operation of one or both of these engines on 100% distillate oil, without the other engine combusting dual fuel, for no more than 1000 engine-hours per year. Trigen's documentation states that while one engine is operating on 100% distillate oil and the other is operating on dual fuel, the average emissions, from both engines, will be in compliance with the NO_x RACT limit of 8.0 g/bhp-hr, which is applicable until March 7, 2007.

In order to obtain compliance with the revised NO_x RACT limit of 2.3 g/bhp-hr, Trigen has proposed to install "Clean Burn" technology on the engines. Trigen has certified that after installation of this "Clean Burn" technology, both engines will be in compliance with the NO_x RACT emission limit of 2.3 g/bhp-hr, while combusting dual fuel. However, the engines are required by the manufacturer to combust 100% fuel oil during periods of startup, shutdown, injector clean out, and major component-break in. During these specified periods of operation, the facility would not be able to maintain compliance with the NO_x RACT emission limit required by N.J.A.C. 7:27-19.8(e). In an AEL amendment request, dated April 7, 2006, Trigen proposed operating these engines on dual fuel during all periods of normal steady state operation, except during emergency use and gas curtailment, pursuant to N.J.A.C. 7:27-19.25. However, in order to address the limited periods when 100% fuel oil must be combusted and therefore the 2.3 g/bhp-hr would be exceeded, Trigen has proposed a facility specific NO_x emission limit for the engines, pursuant to N.J.A.C. 7:27-19.13(a)2. Trigen proposed a maximum allowable NO_x emission rate of 12.0 g/bhp-hr while either engine combusts 100% distillate oil. Trigen also proposed to limit the operation of this scenario to a maximum of 200 hours per year, for each engine. Finally, Trigen has proposed to limit the operation of this scenario to periods when combustion of dual fuel in the engines is not possible, specifically periods of startup, shutdown, injector clean out, and major component break-in. In accordance with the current facility operating permit, only one engine will be allowed to combust distillate oil at any given time, except during times of natural gas curtailment or emergency.

On the basis of all the information available to the Department in reference to these NO_x limits, the Department has determined that the proposed, amended AELs satisfy the requirements of the New Jersey Air Pollution Regulations codified at N.J.A.C. 7:27-19.13. Therefore, the Department concludes that the AELs are justified for these engines, while firing 100% distillate oil, during periods when dual fuel cannot be fired in the engines. Accordingly, the Department hereby approves these AELs with the attached conditions.

Compliance with the attached conditions (Attachment I), effective on March 7, 2007 and continuing thereafter, will satisfy the current requirements of N.J.A.C. 7:27-19, for attainment of



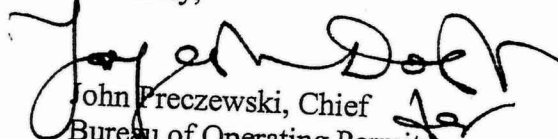
the eight-hour ozone standard, for each of the two engines at Trigen-Trenton Energy Co. L.P. in Trenton, New Jersey.

If in your judgement as an applicant for an AEL, the Department is imposing any unreasonable condition of approval, you may contest the Department's decision and request a contested case hearing pursuant to the Administrative Procedures Act, N.J.S.A. 52:14B-1 et seq., and the New Jersey Administrative Code at N.J.A.C. 1:1 and 7:27-8.12. All requests for a contested case hearing must be received in writing by the Department within (20) calendar days from the date of receipt of this approval, and must contain the information specified in Attachment II (Administrative Hearing Request Checklist and Tracking Form).

Please note that all conditions of all existing Permit/certificates for the facility remain unchanged, with the exception of the changes specified in Attachment I. Please attach this letter and Conditions of Approval to all current permit conditions for the facility.

If you have any questions on this matter, please call Michael Hogan of my Staff at (609) 633-1124.

Sincerely,


John Preczewski, Chief
Bureau of Operating Permits

Attachments

CC:

William O'Sullivan, Director
Steve Riva, USEPA Region II
S. Hawthorn, CRO
Y. Doshi, BOP
M. Hogan, BOP

ATTACHMENT I

CONDITIONS OF APPROVAL
ALTERNATIVE MAXIMUM EMISSION RATE FOR NO_x

FOR

TWO (2) COOPER BESSEMER
DISTILLATE OIL OR DUAL FUEL FIRED
4-STROKE DIESEL INTERNAL COMBUSTION ENGINES

TRIGEN-TRENTON ENERGY COMPANY L.P.

320 SOUTH WARREN STREET

TRENTON, NJ 08608

APC PLANT ID NO. 61015

APPROVAL DATE: January 11, 2007.

TABLE OF CONTENTS

I. DEFINITIONS

II. CONDITIONS OF APPROVAL

A. Control for Nitrogen Oxides Reduction

B. NO_x Emission Limit

C. Annual Combustion Process Adjustment

D. Additional Emissions Testing and Monitoring

E. Recordkeeping

F. Reporting

G. Revision of the State Implementation Plan (SIP)

H. Modification of AELs



I. DEFINITIONS:

The Department: New Jersey Department of Environmental Protection

BPP: Bureau of Preconstruction Permits
NJ Department of Environmental Protection
P.O. Box 027
Trenton, NJ 08625-0027
(609) 984-3023

BTS: Bureau of Technical Services
NJ Department of Environmental Protection
P.O. Box 411
Trenton, NJ 08625-0411
(609) 530-4041

Regional Enforcement Office:

CRO: Central Regional Air Pollution Control Office
NJ Department of Environmental Protection
Bureau of Enforcement Operations
300 Horizon Center
P.O. Box 407
Robbinsville, NJ 08625-0407
(609) 584-4100

Trigen: Trigen-Trenton Energy Co. L.P.
320 South Warren St.
Trenton, NJ 08608



II. CONDITIONS OF APPROVAL

A. CONTROL FOR NITROGEN OXIDES REDUCTION

- ✓ 1. Trigen shall operate a Turbocharger and Aftercooler on each engine at all times that each engine is operated.
- ✓ 2. Trigen shall not operate more than one (1) engine on 100% distillate oil at any time, except during periods of natural gas curtailment or emergency, pursuant to N.J.A.C. 7:27-19.25.

B. NO_x EMISSION LIMIT

1. NO_x Emission Limits

- (a) Beginning November 4, 2005 the emission rate of NO_x from each engine, while combusting 100% distillate oil shall not exceed 12.0 grams per brake-horsepower-hour (g/bhp-hr). Compliance with this limit shall be based on continuous emission monitoring and recording pursuant to Condition II.D.
- (b) Prior to March 7, 2007, Trigen shall limit the operation of its engines on 100% distillate oil during any time that dual fuel firing of the other engine is not occurring to a maximum of 1,000 engine-hours per permit year. This includes periods when both engines may fire 100% distillate oil during natural gas curtailment or emergency and periods when one engine may fire 100% distillate oil and the other engine is off-line.
- (c) Beginning March 7, 2007, Trigen shall limit the operation of its engines on 100% distillate oil to 200 hours per year per engine, during startup, shutdown, injector cleanout and major component break-in; and during emergencies pursuant to N.J.A.C. 7:27-19.25. Start-up shall be defined as the period of time from engine start, during which the engine is operated on 100% distillate, until it is switched over to dual fuel. Shutdown shall be defined as the period prior to engine stop, during which the engine is operated on 100% distillate, after it is switched over from dual fuel. Each startup and each shutdown period shall be limited to 15 minutes.

2. Compliance Basis

When continuous emission monitors (CEMs) are used to determine compliance with the above NO_x emission limits, Trigen shall calculate the average NO_x emission rate using the data from the CEM system for the NO_x concentration in the flue gas, and either the flue gas flow rate or the fuel flow



rate. To calculate the emission rate using the NO_x concentration and the fuel flow rate, Trigen shall use the conversion procedure set forth in the Acid Rain regulations at 40 CFR Part 75, Appendix F, or an alternative procedure that the Department and EPA determine will yield the same result. Since two (2) boilers and two (2) engines all exhaust to a common stack, which is monitored by the CEM, individual equipment emissions cannot be isolated. Therefore, compliance shall be based on the sum of the Department approved individual lb/hr emission limits for the applicable operating scenario under which each piece of equipment is being operated. The Department approved individual lb/hr emission limits shall be listed in the current Title V Operating Permit for each allowable operating scenario of each piece of equipment. Compliance with the limits shall be based upon hourly emissions average.

C. COMBUSTION PROCESS ADJUSTMENT

Trigen shall inspect and adjust each engine's combustion process in accordance with the procedures set forth at N.J.A.C. 7:27-19.16 and according to the manufacturer's recommended maintenance schedule. An exceedance of an emission limit, which occurs during an adjustment of the combustion process, as a result of the adjustment, is not a violation of this permit. Before the combustion process adjustment begins, and after it has been completed, the maximum emission rate of NO_x shall not exceed the maximum allowable emission rate specified in this approval.

D. ADDITIONAL EMISSIONS TESTING AND MONITORING

Continuous emission monitors and continuous data recorders certified by the Chief, BTS, shall be used to continuously monitor and record the emission concentration of nitrogen oxides from the common stack. Since both engines and both boilers exhaust to a common stack and therefore the emissions of each unit are inseparable, total NO_x emissions, from the stack, must be in compliance with the sum of the Department approved individual lb/hr permit limits for each group of equipment that is operating at any given time.

E. RECORDKEEPING

1. For each inspection and adjustment (if necessary) of the combustion process specified in Condition II.C of this approval, the following information shall be recorded:
 - (a) The date of the inspection and adjustment and the times at which it began and ended;



- (b) The name, title and affiliation of the person who performed the procedure and adjustment; and
 - (c) The type of procedure and maintenance performed.
- 2. If an adjustment of the combustion process specified in Condition II.C of this approval is necessary, the following information shall be recorded
 - (a) The concentrations of NO_x, CO and O₂, measured before and after the adjustment was made; and
 - (b) The type and amount of fuel used since the last adjustment was made.
- 3. For each period of operation of an engine on 100% distillate oil, beginning on March 7, 2007, the date of the incidence, time that 100% oil combustion began, time that 100% oil combustion ceased and the reason for combustion of 100% oil shall be recorded for each period of startup, shutdown, injector cleanout and major component break-in.
- 4. An operating log shall be kept to accurately maintain the hours of operation of either engine on 100% distillate oil. This log shall maintain hours from November 1st thru October 31st of the following year, in order to be consistent with fuel limit logs.
- 5. The records required to be kept as part of this approval shall be entered in a permanently bound log book, or in readily accessible computer memories, or by other method acceptable to the CRO, maintained on-site for a minimum of five (5) years from the date on which the record was made, and shall be made available to representatives of the Department upon request.

F. REPORTING

- 1. The Quarterly Excess Emission and Monitoring System Performance Report (EEMSPR) for the continuous emission monitor shall be submitted to the CRO within thirty (30) calendar days from the end of each calendar quarter.
- 2. By December 31, 2007, Trigen shall submit to the Chief, BTS, data obtained pursuant to Conditions II.B.2, II.D and II.E.3 of this approval, which demonstrates compliance with the emission limits specified in Condition II.B.1 of this approval. Specifically, Trigen shall submit a copy of the logbook, specified in II.E.3 and daily CEMs reports, indicating hourly actual NO_x lb/hr emissions and applicable emission limits.



G. REVISION OF THE STATE IMPLEMENTATION PLAN (SIP)

Pursuant to N.J.A.C. 7:27-19.13(h), a revision to the State Implementation Plan (SIP) for ozone to include this alternative emission limit will be submitted to the USEPA for approval. The USEPA will review the alternative emission limit, propose action on the SIP revision and finalize its action after public comment. Denial of the SIP revision by the USEPA will cause the alternative maximum NO_x emission rate to be revoked and will result in modification of the alternative emission limit and the facility operating permit.

H. MODIFICATION OF AELS

1. Approval of an amended AEL will be required by the Department before any alterations can be made to either of the two (2) Cooper Bessemer distillate oil or dual fuel fired 4-stroke diesel internal combustion engines which will cause NO_x emission rates to increase above the limits specified in Condition II.B of this approval.
2. In the event that the NO_x RACT limit specified in N.J.A.C. 7:27-19.8(e) is revised, through an amendment to N.J.A.C. 7:27-19, Trigen-Trenton must comply with the revised regulation. Compliance with the revised regulation through an AEL will require approval of an amended AEL.



ATTACHMENT II

Administrative Hearing Request Checklist and Tracking Form

I. Document Being Appealed

Name of the Facility	Program Interest (PI) Number	Permit Activity Number	Issuance Date

II. Contact Information

Name of Person Requesting Hearing	Name of Attorney (if applicable)
Address:	Address:
Telephone:	Telephone:

III. Please include the following information as part of your request:

- A. The date the permittee received the permit decision,
- B. **A copy of the document being appealed,**
- C. The legal and factual questions you are appealing;
- D. A statement as to whether or not you raised each legal and factual issues during the permit application process;
- E. Suggested revised or alternative permit conditions;
- F. An estimate of the time required for the hearing;
- G. A request, if necessary, for a barrier-free hearing location for physically disabled persons;
- H. A clear indication of any willingness to negotiate a settlement with the Department prior to the Departments processing of your hearing request to the Office of Administrative Law;

Mail this form, completed, signed and dated with all of the information listed above, including attachment, to:

1. New Jersey Department of Environmental Protection
Office of Legal Affairs
Attention: Adjudicatory Hearing Requests
401 E. State Street, P.O. Box 402
Trenton, New Jersey 08625

2. New Jersey Department of Environmental Protection
Bureau of Preconstruction Permits
Attention: Adjudicatory Hearing Requests
401 E. State Street, 2nd Floor, P.O. Box 027
Trenton, New Jersey 08625

Signature

Date



Administrative Hearing Request Checklist and Tracking Form

IV. If you are not the applicant but rather an interested person claiming to be aggrieved by the permit decision, please include the following information:

1. The date you or your agent received notice of the permit decision (include a copy of that permit decision with your hearing request);
2. Evidence that a copy of the request has been delivered to the applicant for the permit which is the subject of the permit decision;
3. A detailed statement of which findings of fact and/or conclusion of law you are challenging;
4. A description of your participation in any public hearings held in connection with the permit application and copies of any written comments you submitted;
5. Whether you claim a statutory or constitutional right to a hearing, and, if you claim such a right, a reference to the applicable statute or explanation of how your property interests are affected by the permit decision;
6. If the appeal request concerns a CAFRA permit decision, evidence that a copy of the request has been delivered to the clerks of the county and the municipality in which the project which is the subject of the permit decision is located;
7. Suggested revised or alternative permit conditions;
8. An estimate of the time required for the hearing;
9. A request, if necessary, for a barrier-free hearing location for physically disable persons;
10. A clear indication of any willingness to negotiate a settlement with the Department prior to the Department's transmittal of the hearing request to the Office of Administrative Law;

Mail this form, completed, signed and dated with all of the information listed above, including attachment, to:

1. New Jersey Department of Environmental Protection
Office of Legal Affairs
Attention: Adjudicatory Hearing Requests
401 East State Street, P.O. Box 402
Trenton, New Jersey 08625-0402
2. New Jersey Department of Environmental Protection
Bureau of Preconstruction Permits
Attention: Adjudicatory Hearing Requests
401 E. State Street, 2nd Floor, P.O. Box 027
Trenton, New Jersey 08625

Signature

Date



D. OPERATING REQUIREMENTS

1. None of the eight batch primary furnaces shall be operated unless the temperature of the tertiary chamber of the recovery furnace system is at least 1600°F, measured at the exit of the tertiary chamber.
2. No feed material shall be charged into the recovery furnace system unless the scrubber is operating.
3. Total precious metals containing materials charged to all of the primary furnaces shall not exceed 48,000 pounds in any one day.
4. Total precious metals containing materials burned in all of the primary furnaces shall not exceed 3.0 million pounds in any calendar year.

E. STACK EMISSIONS TESTING

1. A stack emissions test protocol, in accordance with N.J.A.C. 7:27-17, shall be submitted for approval to the Chief, BTS within 60 calendar days after the date of this approval.
2. Within 180 calendar days after start-up of the new low NOx burners Johnson Matthey Incorporated shall conduct stack tests for NOx emissions, in accordance with the protocol approved in condition E.1 above.
3. Operation of the eight primary batch furnaces is intermittent, and all of the primary furnaces do not operate at the same time. Primary furnaces #1 through #7 have cycle times that exceed 8 hours. #8 primary furnace, known as the Rich Paper Recovery Furnace, processes low density material with high heat content (i.e. paper, etc.) with a cycle time of only 2 hours.

The stack emissions tests for NOx shall be conducted during maximum practical operation of the intermittently operated batch furnaces. In order to satisfy this requirement, loading and ignition of the batch furnaces shall be staged as follows during the performance of stack tests:

- a. A new 200-pound charge shall be loaded and burned in the #8 batch primary furnace, known as the Rich Paper Recovery Furnace, every two hours.
- b. 800-pound charges shall be loaded and burned in any three of the seven primary furnaces #1 through #7. Ignition of the three furnaces shall be at intervals not to exceed two hours. During the stack tests all of the three furnaces shall be burning, and each furnace shall be at least one

hour but no more than eight hours into its burning cycle.

4. The Chief, BTS shall be contacted at least 30 calendar days before stack tests are conducted to establish a mutually acceptable dates, in order that representatives of the Department can be scheduled to observe the tests.
5. Results of the stack tests for NOx shall be reported to the Department within 60 calendar days after the tests are conducted, but not later than May 31, 1996.

F. MONITORING, RECORDING AND RECORDKEEPING REQUIREMENTS

1. Oxygen concentration in the stack after the tertiary chamber shall be continuously monitored and continuously recorded when the recovery furnace system is operating.
2. Carbon monoxide in the stack after the tertiary chamber shall be continuously monitored and continuously recorded when the recovery furnace system is operating.
3. Total quantity of material burned shall be recorded in a manner that will allow verification of daily and annual rates.
4. Temperature in the secondary chamber of the Rich Paper Recovery batch furnace shall be continuously monitored and continuously recorded when the furnace is operated.
5. Temperature in the secondary chamber and in the tertiary chamber of the recovery furnace system shall be continuously monitored and continuously recorded when operating.
6. All records shall be maintained by a method acceptable to the Regional Enforcement Officer.
7. All records created to verify compliance with approval conditions II.C.1 through II.C.5, and other monitoring records and log books that are required to demonstrate compliance with these approval conditions, shall be maintained on site for five years after recording, and shall be made available to representatives of the Department, during normal working hours, upon request.

G. REVISION OF STATE IMPLEMENTATION PLAN (SIP)

A revision to the state implementation plan (SIP) for ozone to include this facility-specific NOx emission limit will be submitted to EPA for approval. EPA will review the AEL, propose action on the SIP revision and finalize its action after public comment. Disapproval of the SIP revision by the EPA will cause the limit to be revoked, and will result in modification of the plan.

H. MODIFICATION OF THE FACILITY-SPECIFIC NO_x EMISSION LIMIT

Approval of an amended facility-specific NO_x emission will be required by the Department before any alterations may be made to the multi-chamber recovery furnace system that will cause the NO_x emission rate to increase above 7.1 lb/hr, 3-hour average.

ATTACHMENT - II

Administrative Hearing Request Checklist
and Tracking Form for Permits

I. Permit Being Appealed

Title and Type of Permit

Issuance Date of Permit

Permit Number

II. Person Requesting Hearing:

Name

Name of Attorney (If applicable)

Address

Address of Attorney

III. Please Include the Following Information as Part of Your Request:

- A. The date the permittee received the final permit;
- B. A list of all permit conditions and issues contested;
- C. The legal and factual questions at issue;
- D. A statement as to whether or not the permittee raised each legal and factual issues during the public comment period on the permit;
- E. Suggested revised or alternative permit conditions;
- F. An estimate of the time required for the hearing;
- G. A request, if necessary, for a barrier-free hearing location for physically disabled persons;
- H. A clear indication of any willingness to negotiate a settlement with the Department prior to the Department's processing of your hearing request to the Office of Administrative Law; and
- I. This form, completed, signed and dated with all the information listed above, including attachments, to:

- 1. Office of Legal Affairs
ATTENTION: Adjudicatory Hearing Requests
Department of Environmental Protection
401 East State Street
CN 402
Trenton, New Jersey 08625-0402
- 2. Chief, Bureau of Air Quality Engineering
Department of Environmental Protection
CN 027
Trenton, New Jersey 08625-0027
- 3. All co-permittees (w/attachments)

