

**COMMONWEALTH OF VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL QUALITY  
AIR DIVISION**

**INTRA AGENCY MEMORANDUM**

**TO:** File

**FROM:** Mary E. Major  
Environmental Program Manager

**SUBJECT:** Meeting Minutes - Technical Advisory Committee Concerning Peak  
Shaving Generators General Permit (Rev. Dg)

**DATE:** May 19, 2010

**INTRODUCTION**

A meeting of the technical advisory committee concerning peak shaving generator general permit was held in the 2<sup>nd</sup> Floor Conference Room A, Department of Environmental Quality, 629 E. Main Street, Richmond, Virginia. A record of meeting attendees is attached.

**Start:** 9:30 a.m.

**End:** 11:50 a.m.

**Subcommittee Members Present:**

Elizabeth Aiken  
Jerome A. Brooks  
Michael W. Kendall, R.S.  
Mary E. Major  
Rebekah Remick  
William Scarpinato  
Susan Stewart

**Subcommittee Members Absent:**

Walid M. Daniel, PE, CEM  
Joe Suchecki

**Public Attendees:**

Mr. Andrew Gayne

Mr. Allen Sharrett

## **SUMMARY OF DISCUSSION**

Ms. Major indicated that the group could develop a GP with several parts; one part addressing nonattainment concerns, a part that addressed compliance based on hours of operation, one part that addressed compliance base on fuel throughput.

Becky Remick reviewed the contents of the documents titled the Peak Shaving General Permit (Hour) - Draft and Peak Shaving General Permit (Fuel)-Draft and indicated the differences made as a result of the last meeting.

### **Applicability provisions:**

- Discussion regarding nonattainment and RACT as it pertains the engines.
- Need to clarify that permit is not available for major sources.
- Discussed the implication of synthetic minor.
- Need to clarify if modification and reconstruction is applicable.

### **Definitions:**

Need additional definitions or clarifying language with regard to terms:

Dual fuel

Load curtailment

Peak shaving

Routine testing

Initial Start up; integration operational period; operation

Identical electric generating units.

Reviewed the following new definitions:

Aggregate rated electrical power

Demand response

Distillate oil; including biodiesel; need to determine if ASTM D975 includes kerosene; should aviation fuels be included i.e. JP-8 and JP-4

### **Operating Limitations:**

Need to determine heat content of biodiesel to use in the fuel throughput limits provided in Condition 8.

Need to research hours of operation in specific contracts for peak shaving units

Discussion of total hours of operation vs. total kilowatts-hours.

Discussion of emission limits and testing conditions vs. NSPS emission limits and testing conditions (i.e. Not to Exceed (NTE) limits)

### **Monitoring:**

Need to consider engines constructed with SCR

### **Testing Requirements:**

Reference preventative maintenance  
Testing only one unit if there are multiple identical units  
If Tier 4 certified, is stack testing necessary...still in discussions

### **NEXT MEETING DATE**

The next meeting is scheduled for Tuesday, June 15, 2010, 2<sup>nd</sup> Floor Conference Room A, Department of Environmental Quality, 629 E. Main Street, Richmond, Virginia. The committee also agreed to additional meeting dates:

Wednesday, June 30,  
Tuesday, July 13,  
Thursday July 29, and  
Thursday, August 19.

All meetings will begin at 9:30 and will be held at the Department of Environmental Quality second floor conference rooms. It is understood that the members will meet as necessary to complete their work and that all meeting dates may, or may not, be necessary.

### **DOCUMENT DISTRIBUTION**

The following documents were distributed to the committee prior to or at the meeting:

1. Copy of Meeting attendees
2. Peak Shaving Generator General Permit (Hour) - Draft
2. Peak Shaving Generator General Permit (Fuel) -Draft

TEMPLATES\GEN-PERMIT\GP08  
REG\GEN-DEV\Dg-GP08-2

Attachments

**COMMONWEALTH OF VIRGINIA  
STATE AIR POLLUTION CONTROL BOARD**

**TECHNICAL ADVISORY COMMITTEE MEETING  
ATTENDANCE RECORD**

May 19, 2010

SUBJECT: Peak Shaving/Emergency Generator GP (Revision DG/EG)

LOCATION: 2nd Floor Conference Room C, Department of Environmental Quality, 629 East Main Street, Richmond, Virginia

PRINTED NAME	SIGNATURE
Beth Major	Beth Major - DEQ
Rebekah Kemick	Rebekah Kemick
Andrew Gayne	Andrew Gayne
Jerome Brooks	Jerome Brooks
Allan Sharrett	Allan Sharrett
Susan Stewart	Susan Stewart
Mike Kendal	Mike Kendal

## Peak Shaving Generator General Permit

### Applicability:

- A. The affected units to which this chapter applies is each electric generating unit for which construction, installation, or operation is commenced after the date of this general permit and that meets the requirements stated below:
  - a. For compression ignition engines: Tier 4 engines (or equivalent) with an aggregate rated electrical power output greater than or equal to 2,960 kW and less than 85,900 kW.
  - b. For spark ignition engines: An aggregate rated electrical power output greater than or equal to 3,100 kW and less than 89,100 kW.
- B. Any electric generating unit that is a major source, as defined in 9 VAC 5-80-1615, is not eligible for this general permit.
- C. Any electric generating unit that is located at a major source, as defined in 9 VAC 5-80-1615, is not eligible for this general permit.
- D. Any electric generating unit that is an emergency generator and/or participates in an ISO Emergency Load Response Program (ELRP) is not eligible for this general permit.

### Definitions:

*Aggregate rated electrical power output* means the sum or total rated electrical power output for all engines involved in the initial application. It does not include all existing electric generating units at the facility.

*Bio-diesel* means a fuel comprised of mono-alkyl esters of long chain fatty acids derived from vegetable oils or animal fats, designated B100, and meeting the requirements of ASTM D 6751. Biodiesel may be designated as B100 (for 100% biodiesel) or may be designated as a blend with diesel oil; for example B20 (20% bio-diesel mixed with 80% petroleum diesel). Only glycerol-free bio-diesel can be burned.

*Compression ignition engine* means relating to a type of stationary internal combustion engine that is not a spark ignition engine.

*Demand response* means when end-use customers reduce their use of electricity in response to power grid needs, economic signals from a competitive wholesale market, or special retail rates.

*Distillate oil* means fuel oil that complies with the specifications for fuel oil numbers 1 or 2, as defined by the American Society for Testing and Materials in ASTM D396 or diesel fuel oil numbers 1 or 2, as defined by the American Society for Testing and Materials in ASTM D975. (NSPS Definition)

*Electric generating unit* means a stationary internal combustion engine that participates in a voluntary demand response program (i.e. load curtailment, demand response, peak shaving or like program).

*Independent system operator (ISO)* means a person that may receive or has received, by transfer pursuant to §56-576, any ownership or control of, or any responsibility to operate, all or part of the transmission systems in the Commonwealth.

*Integration operational period*

*Load curtailment* means

- Voluntary reduction of load of preselected customers.

*Operation*

*Peak shaving*

*Routine testing and maintenance* means

*Spark ignition engine* means a natural gas or liquefied petroleum gas fueled engine or any other type of engine with a spark plug (or other sparking device) and with operating characteristics significantly similar to the theoretical Otto combustion cycle. Spark ignition engines usually use a throttle to regulate intake air flow to control power during normal operation. Dual-fuel engines in which a liquid fuel (typically diesel fuel) is used for compression ignition and gaseous fuel (typically natural gas) is used as the primary fuel at an annual average ratio of less than 2 parts diesel fuel to 100 parts total fuel on an energy equivalent basis are spark ignition engines.

*Startup* means

*Tier 4 engine or equivalent* means a compression ignition electric generating unit that meets Tier 4 standards, whether by Tier 4 certification or by adding air pollution controls. Tier 4 standards were published as a final rule on June 29, 2004.

### **Monitoring Requirements:**

1. **Hour Meter Device** – The permittee shall install and use a non-resettable hour metering device to monitor the monthly and yearly operating hours for each electric generating unit, calculated monthly as the sum of each consecutive 12-month period. Each metering device shall be installed, maintained, calibrated and operated in accordance with approved procedures which shall include, as a minimum, the manufacturer's written requirements or recommendations.
2. **Hour Meter Device Observation** – To ensure good performance, the hour meter used to continuously measure the monthly and yearly hours of operation for each electric generating unit shall be observed by the permittee with a frequency of not less than once per month. The permittee shall keep a log of the observations from the hour meter.

**Operating Limitations:**

3. **Fuel** - The approved fuels for each compression ignition electric generating unit are distillate oil and/or bio-diesel.
4. **Fuel** - The approved fuels for each spark ignition electric generating unit are natural gas and/or liquid propane gas.
5. **Fuel** - The approved fuels shall meet the specifications below:

DISTILLATE OIL which meets the ASTM D975 specification for numbers 1 or 2 fuel oil:

Maximum sulfur content per shipment: 0.0015%

NATURAL GAS:

Minimum heat content: 1,000 Btu/cf HHV  
as determined by ASTM D1826, D2382, or a DEQ-approved equivalent method.

LIQUID PROPANE GAS, including butane and propane, which meets ASTM specification D1835

BIO-DIESEL which meets ASTM specification D6751

Maximum sulfur content per shipment: 0.0015%

6. **Operating Hours** – The electric generating unit(s) combined shall not operate more than 300 hours per year, calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.
7. **Fuel Certification** – If distillate oil or bio-diesel is used, the permittee shall obtain a certification from the fuel supplier with each shipment of distillate oil or bio-diesel. Each fuel supplier certification shall include the following:
  - a. The name of the fuel supplier;
  - b. The date on which the distillate oil or bio-diesel was received;
  - c. The quantity of distillate oil or bio-diesel delivered in the shipment;
  - d. A statement that the distillate oil complies with the American Society for Testing and Materials specifications (ASTM D975) for numbers 1 or 2 fuel oil;
  - e. A statement that the bio-diesel complies with the American Society for Testing and Materials specifications (ASTM D6751); and
  - f. The sulfur content of the distillate oil or bio-diesel.

**Emission Limits:**

8. **Process Emission Limits** - Emissions from the operation of each compression ignition electric generating unit shall not exceed the limits specified below:

Pollutant	Emissions g/kW-hr (g/hp-hr)
PM	0.03 (0.022)
PM-10	0.03 (0.022)
PM 2.5	0.03 (0.022)
NO <sub>x</sub>	0.67 (0.50)
CO	3.5 (2.6)
VOC	0.19 (0.14)

9. **Process Emission Limits** - Emissions from the operation of each spark ignition electric generating unit shall not exceed the limits specified below:

Pollutant	Emissions g/kW-hr (g/hp-hr)
PM	0.015 (0.011)
PM-10	0.015 (0.011)
PM 2.5	0.015 (0.011)
NO <sub>x</sub>	1.34 (1.0)
CO	2.68 (2.0)
VOC	0.94 (0.7)

10. **Process Emission Limits** – Combined facility wide emissions from the operation of the electric generating unit(s) shall not exceed the limits specified below:

Pollutant	Emissions (tons/yr)
PM	24.5
PM-10	14.5
PM 2.5	9.5
NO <sub>x</sub>	39.5
SO <sub>2</sub>	39.5
CO	99.5
VOC	39.5

11. **Visible Emission Limit** - Visible emissions from each electric generating unit shall not exceed 5 percent opacity as determined by the EPA Method 9 (reference 40 CFR 60, Appendix A). This condition applies at all times except during startup, shutdown, and malfunction.

**Testing Requirements:**

12. **Emissions Testing** - Each electric generating unit shall be constructed/installed so as to allow for emissions testing upon reasonable notice at any time, using



appropriate methods. Sampling ports shall be provided when requested at the appropriate locations and safe sampling platforms and access shall be provided.

13. **Testing and Maintenance** - No electric generating unit shall be used for the purposes of testing or for maintenance purposes before 5 pm any day during the ozone season of May 1 – September 30.
14. **Initial Stack Test** – Initial performance tests shall be conducted for NO<sub>x</sub>, CO, PM-10, and PM 2.5 from the electric generating unit using reference methods [ ] to determine compliance with the emission limits contained in Conditions 12 and 13. If multiple electric generating units are located on site, only one electric generating unit needs to be tested. The tests shall be performed and demonstrate compliance within 60 days after achieving the maximum production rate at which the facility will be operated but in no event later than 180 days after start-up of the permitted facility. Tests shall be conducted and reported and data reduced as set forth in 9 VAC 5-50-30, and the test methods and procedures contained in each applicable section or subpart listed in 9 VAC 5-50-410. The details of the tests are to be arranged with the Regional Office. The permittee shall submit a test protocol at least 30 days prior to testing. One copy of the test results shall be submitted to the Regional Office within 60 days after test completion [and shall conform to the test report format enclosed with this general permit].
15. **Initial Visible Emissions Evaluation** – Concurrently with the initial performance tests, Visible Emission Evaluations (VEE) in accordance with 40 CFR Part 60, Appendix A, Method 9, shall also be conducted on the electric generating unit. If multiple electric generating units are located on site, only one electric generating unit needs to be tested. Each test shall consist of 30 sets of 24 consecutive observations (at 15 second intervals) to yield a six minute average. The details of the tests are to be arranged with the Regional Office. The permittee shall submit a test protocol at least 30 days prior to testing. The evaluation shall be performed and demonstrate compliance within 60 days after achieving the maximum production rate at which the facility will be operated but in no event later than 180 days after start-up of the permitted facility. Should conditions prevent concurrent opacity observations, the Regional Office shall be notified in writing, within seven days, and visible emissions testing shall be rescheduled within 30 days. Rescheduled testing shall be conducted under the same conditions (as possible) as the initial performance tests. One copy of the test result shall be submitted to the Regional Office within 60 days after test completion [and shall conform to the test report format enclosed with this general permit].
16. **Stack Tests** – Every five years and upon request by the DEQ, the permittee shall conduct additional performance tests for NO<sub>x</sub>, CO, PM-10, and PM 2.5 from the electric generating unit to demonstrate compliance with the emission limits contained in this general permit. If multiple electric generating units are located on site, only one electric generating unit needs to be tested. The details of the tests shall be arranged with the Regional Office.
17. **Visible Emissions Evaluation** – Every five years and upon request by the DEQ, the permittee shall conduct additional visible emission evaluations from the electric

generating unit to demonstrate compliance with the visible emission limits contained in this permit. If multiple electric generating units are located on site, only one electric generating unit needs to be tested. The details of the tests shall be arranged with the Regional Office.

**Records:**

18. **On Site Records** - The permittee shall maintain records of emission data and operating parameters as necessary to demonstrate compliance with this general permit. The content and format of such records shall be arranged with the Regional Office. These records shall include, but are not limited to:
- a. Total combined annual hours of operation for the electric generating units, calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.
  - b. All fuel supplier certifications.
  - c. Engine information including make, model, serial number, model year, maximum engine power, and engine displacement for each electric generating facility.
  - d. Written manufacturer specifications or written standard operating procedures prepared by the permittee for each electric generating facility.
  - e. Results of all stack tests, visible emission evaluations and performance evaluations.
  - f. Operation and control device monitoring records for the fuel flow meter.
  - g. Scheduled and unscheduled maintenance/testing and operator training.

These records shall be available for inspection by the DEQ and shall be current for the most recent five years.

**Notifications:**

19. **Initial Notifications** - The permittee shall furnish written notification to the Regional Office of:
- a. The actual date on which construction of each electric generating facility commenced within 30 days after such date.
  - b. The anticipated start-up date of each electric generating facility postmarked not more than 60 days nor less than 30 days prior to such date.
  - c. The actual start-up date of each electric generating facility within 15 days after such date.

- d. The anticipated date of performance tests of each electric generating facility postmarked at least 30 days prior to such date.

**General Requirements:**

20. **Permit Invalidation** – This general permit to construct, install, or operate each electric generating facility shall become invalid, unless an extension is granted by the DEQ, if:

- a. A program of continuous construction is not commenced within the latest of the following:
  - i. 18 months from the date that this general permit is issued to the permittee;
  - ii. Nine months from the date that the last permit or other authorization was issued from any other governmental entity;
  - iii. Nine months from the date of the last resolution of any litigation concerning any such permits or authorization; or
- b. A program of construction is discontinued for a period of 18 months or more, or is not completed within a reasonable time, except for a DEQ approved period between phases of a phased construction project.

21. **Permit Suspension/Revocation** - This general permit may be suspended or revoked if the permittee:

- a. Knowingly makes material misstatements in the permit application or any amendments to it;
- b. Fails to comply with the conditions of this general permit;
- c. Fails to comply with any emission standards applicable to a permitted emissions unit;
- d. Causes emissions from the stationary source which result in violations of, or interfere with the attainment and maintenance of, any ambient air quality standard; or
- e. Fails to operate in conformance with any applicable control strategy, including any emission standards or emission limitations, in the State Implementation Plan in effect at the time an application for this permit is submitted.

22. **Right of Entry** - The permittee shall allow authorized local, state, and federal representatives, upon the presentation of credentials:

- a. To enter upon the permittee's premises on which the facility is located or in which any records are required to be kept under the terms and conditions of this permit;

- b. To have access to and copy at reasonable times any records required to be kept under the terms and conditions of this permit or the State Air Pollution Control Board Regulations;
- c. To inspect at reasonable times any facility, equipment, or process subject to the terms and conditions of this permit or the State Air Pollution Control Board Regulations; and
- d. To sample or test at reasonable times.

For purposes of this condition, the time for inspection shall be deemed reasonable during regular business hours or whenever the facility is in operation. Nothing contained herein shall make an inspection time unreasonable during an emergency.

23. **Maintenance/Operating Procedures** – At all times, including periods of start-up, shutdown, and malfunction, the permittee shall, to the extent practicable, maintain and operate the affected source, including associated air pollution control equipment, in a manner consistent with good air pollution control practices for minimizing emissions.

The permittee shall take the following measures in order to minimize the duration and frequency of excess emissions, with respect to process equipment which affect such emissions:

- a. Develop a maintenance schedule and maintain records of all scheduled and non-scheduled maintenance.
- b. Maintain an inventory of spare parts.
- c. Have available written operating procedures for equipment. These procedures shall be based on the manufacturer's recommendations, at a minimum.
- d. Train operators in the proper operation of all such equipment and familiarize the operators with the written operating procedures, prior to their first operation of such equipment. The permittee shall maintain records of the training provided including the names of trainees, the date of training and the nature of the training.

Records of maintenance and training shall be maintained on site for a period of five years and shall be made available to DEQ personnel upon request.

24. **Record of Malfunctions** – The permittee shall maintain records of the occurrence and duration of any bypass, malfunction, shutdown or failure of the facility or its associated air pollution control equipment that results in excess emissions for more than one hour. Records shall include the date, time, duration, description (emission unit, pollutant affected, cause), corrective action, preventive measures taken and name of person generating the record.

25. **Notification for Facility or Control Equipment Malfunction** - The permittee shall furnish notification to the Regional Office of malfunctions of the affected facility or related air pollution control equipment that may cause excess emissions for more than one hour, by facsimile transmission, telephone or telegraph. Such notification shall be made as soon as practicable but no later than four daytime business hours after the malfunction is discovered. The permittee shall provide a written statement giving all pertinent facts, including the estimated duration of the breakdown, within two weeks of discovery of the malfunction. When the condition causing the failure or malfunction has been corrected and the equipment is again in operation, the permittee shall notify the Regional Office.
26. **Violation of Ambient Air Quality Standard** - The permittee shall, upon request of the DEQ, reduce the level of operation or shut down a facility, as necessary to avoid violating any primary ambient air quality standard and shall not return to normal operation until such time as the ambient air quality standard will not be violated.
27. **Change of Ownership** - In the case of a transfer of ownership of a stationary source, the new owner shall abide by any current permit issued to the previous owner. The new owner shall notify the Regional Office of the change of ownership within 30 days of the transfer.
28. **Permit Copy** - The permittee shall keep a copy of this permit on the premises of the facility to which it applies.

## Peak Shaving Generator General Permit

### Applicability:

- A. The affected units to which this chapter applies is each electric generating unit for which construction, installation, or operation is commenced after the date of this general permit and that meets the requirements stated below:
  - a. For compression ignition engines: Tier 4 engines (or equivalent) with an aggregate rated electrical power output greater than or equal to 2,960 kW and less than 85,900 kW.
  - b. For spark ignition engines: An aggregate rated electrical power output greater than or equal to 3,100 kW and less than 89,100 kW.
- B. Any electric generating unit that is a major source, as defined in 9 VAC 5-80-1615, is not eligible for this general permit.
- C. Any electric generating unit that is located at a major source, as defined in 9 VAC 5-80-1615, is not eligible for this general permit.
- D. Any electric generating unit that is an emergency generator and/or participates in an ISO Emergency Load Response Program (ELRP) is not eligible for this general permit.

### Definitions:

*Aggregate rated electrical power output* means the sum or total rated electrical power output for all engines involved in the initial application. It does not include all existing electric generating units at the facility.

*Bio-diesel* means a fuel comprised of mono-alkyl esters of long chain fatty acids derived from vegetable oils or animal fats, designated B100, and meeting the requirements of ASTM D 6751. Biodiesel may be designated as B100 (for 100% biodiesel) or may be designated as a blend with diesel oil; for example B20 (20% bio-diesel mixed with 80% petroleum diesel). Only glycerol-free bio-diesel can be burned.

*Compression ignition engine* means relating to a type of stationary internal combustion engine that is not a spark ignition engine.

*Demand response* means when end-use customers reduce their use of electricity in response to power grid needs, economic signals from a competitive wholesale market, or special retail rates.

*Distillate oil* means fuel oil that complies with the specifications for fuel oil numbers 1 or 2, as defined by the American Society for Testing and Materials in ASTM D396 or diesel fuel oil numbers 1 or 2, as defined by the American Society for Testing and Materials in ASTM D975. (NSPS Definition)

*Electric generating unit* means a stationary internal combustion engine that participates in a voluntary demand response program (i.e. load curtailment, demand response, peak shaving or like program).

*Independent system operator (ISO)* means a person that may receive or has received, by transfer pursuant to §56-576, any ownership or control of, or any responsibility to operate, all or part of the transmission systems in the Commonwealth.

*Integration operational period*

*Load curtailment means*

- Voluntary reduction of load of preselected customers.

*Operation*

*Peak shaving*

*Routine testing and maintenance means*

*Spark ignition engine* means a natural gas or liquefied petroleum gas fueled engine or any other type of engine with a spark plug (or other sparking device) and with operating characteristics significantly similar to the theoretical Otto combustion cycle. Spark ignition engines usually use a throttle to regulate intake air flow to control power during normal operation. Dual-fuel engines in which a liquid fuel (typically diesel fuel) is used for compression ignition and gaseous fuel (typically natural gas) is used as the primary fuel at an annual average ratio of less than 2 parts diesel fuel to 100 parts total fuel on an energy equivalent basis are spark ignition engines.

*Startup means*

*Tier 4 engine or equivalent* means a compression ignition electric generating unit that meets Tier 4 standards, whether by Tier 4 certification or by adding air pollution controls. Tier 4 standards were published as a final rule on June 29, 2004.

### **Monitoring Requirements:**

1. **Fuel Flow Meter Device** – The permittee shall install and use a fuel flow meter to monitor the monthly and yearly fuel throughput for each electric generating unit, calculated monthly as the sum of each consecutive 12-month period. Each fuel flow meter shall be installed, maintained, calibrated and operated in accordance with approved procedures which shall include, as a minimum, the manufacturer's written requirements or recommendations.
2. **Fuel Flow Meter Device Observation** – To ensure good performance, the fuel flow meter used to continuously measure the monthly and yearly fuel throughput for each electric generating unit shall be observed by the permittee with a frequency of not less than once per month. The permittee shall keep a log of the observations from the fuel flow meter.

**Operating Limitations:**

3. **Fuel** - The approved fuels for each compression ignition electric generating unit are distillate oil and/or bio-diesel.
4. **Fuel** - The approved fuels for each spark ignition electric generating unit are natural gas and/or liquid propane gas.
5. **Fuel** - The approved fuels shall meet the specifications below:

DISTILLATE OIL which meets the ASTM D975 specification for numbers 1 or 2 fuel oil:

Maximum sulfur content per shipment: 0.0015%

NATURAL GAS:

Minimum heat content: 1,000 Btu/cf HHV  
as determined by ASTM D1826, D2382, or a DEQ-approved equivalent method.

LIQUID PROPANE GAS, including butane and propane, which meets ASTM specification D1835

BIO-DIESEL which meets ASTM specification D6751

Maximum sulfur content per shipment: 0.0015%

6. **Fuel Throughput** - The compression ignition electric generating unit(s) combined shall consume no more than 628,637 gallons of distillate oil or ### gallons of bio-diesel per year, calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months. If any combination of the two fuels is used, then the quantities of distillate oil and bio-diesel, calculated monthly as the sum of each consecutive 12 month period, shall not exceed values that will allow the following equation to hold true:

$$(A) * (140,000 \text{ Btu/gal}) + (B) * (C) \leq 88,009 \times 10^6 \text{ Btu/yr}$$

where: A = Number of gallons of distillate oil burned during any 12 consecutive month period

B = Number of gallons of bio-diesel burned during any 12 consecutive month period.

C = Heating value of bio-diesel used (Btu/gal)

7. **Fuel Throughput** - The spark ignition electric generating unit(s) combined shall consume no more than 971,146 gallons of LPG or  $91.3 \times 10^6$  cubic feet of natural gas per year, calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months. If any combination of the two fuels is used, then the quantities of natural gas and propane, calculated monthly as the sum



of each consecutive 12 month period, shall not exceed values that will allow the following equation to hold true:

$$(A) * (1,000 \text{ Btu/ft}^3) + (B) * (94,000 \text{ Btu/gal}) \leq 91,300 \times 10^6 \text{ Btu/yr}$$

where: A = Number of cubic feet of natural gas burned during any 12 consecutive month period

B = Number of gallons of propane burned during any 12 consecutive month period.

8. **Fuel Certification** – If distillate oil or bio-diesel is used, the permittee shall obtain a certification from the fuel supplier with each shipment of distillate oil or bio-diesel. Each fuel supplier certification shall include the following:
- The name of the fuel supplier;
  - The date on which the distillate oil or bio-diesel was received;
  - The quantity of distillate oil or bio-diesel delivered in the shipment;
  - A statement that the distillate oil complies with the American Society for Testing and Materials specifications (ASTM D975) for numbers 1 or 2 fuel oil;
  - A statement that the bio-diesel complies with the American Society for Testing and Materials specifications (ASTM D6751); and
  - The sulfur content of the distillate oil or bio-diesel.

**Emission Limits:**

9. **Process Emission Limits** - Emissions from the operation of each compression ignition electric generating unit shall not exceed the limits specified below:

Pollutant	Emissions g/kW-hr (g/hp-hr)
PM	0.03 (0.022)
PM-10	0.03 (0.022)
PM 2.5	0.03 (0.022)
NO <sub>x</sub>	0.67 (0.50)
CO	3.5 (2.6)
VOC	0.19 (0.14)

10. **Process Emission Limits** - Emissions from the operation of each spark ignition electric generating unit shall not exceed the limits specified below:

Pollutant	Emissions g/kW-hr (g/hp-hr)
PM	0.015 (0.011)
PM-10	0.015 (0.011)

PM 2.5	0.015 (0.011)
NO <sub>x</sub>	1.34 (1.0)
CO	2.68 (2.0)
VOC	0.94 (0.7)

11. **Process Emission Limits** – Combined facility wide emissions from the operation of the electric generating unit(s) shall not exceed the limits specified below:

Pollutant	Emissions (tons/yr)
PM	24.5
PM-10	14.5
PM 2.5	9.5
NO <sub>x</sub>	39.5
SO <sub>2</sub>	39.5
CO	99.5
VOC	39.5

12. **Visible Emission Limit** - Visible emissions from each electric generating unit shall not exceed 5 percent opacity as determined by the EPA Method 9 (reference 40 CFR 60, Appendix A). This condition applies at all times except during startup, shutdown, and malfunction.

**Testing Requirements:**

13. **Emissions Testing** - Each electric generating unit shall be constructed/installed so as to allow for emissions testing upon reasonable notice at any time, using appropriate methods. Sampling ports shall be provided when requested at the appropriate locations and safe sampling platforms and access shall be provided.
14. **Testing and Maintenance** - No electric generating unit shall be used for the purposes of testing or for maintenance purposes before 5 pm any day during the ozone season of May 1 – September 30.
15. **Initial Stack Test** – Initial performance tests shall be conducted for NO<sub>x</sub>, CO, PM-10, and PM 2.5 from the electric generating unit using reference methods [ ] to determine compliance with the emission limits contained in Conditions 12 and 13. If multiple electric generating units are located on site, only one electric generating unit needs to be tested. The tests shall be performed and demonstrate compliance within 60 days after achieving the maximum production rate at which the facility will be operated but in no event later than 180 days after start-up of the permitted facility. Tests shall be conducted and reported and data reduced as set forth in 9 VAC 5-50-30, and the test methods and procedures contained in each applicable section or subpart listed in 9 VAC 5-50-410. The details of the tests are to be arranged with the Regional Office. The permittee shall submit a test protocol at least 30 days prior to testing. One copy of the test results shall be submitted to the Regional Office within 60 days after test completion [and shall conform to the test report format enclosed with this general permit].

16. **Initial Visible Emissions Evaluation** – Concurrently with the initial performance tests, Visible Emission Evaluations (VEE) in accordance with 40 CFR Part 60, Appendix A, Method 9, shall also be conducted on the electric generating unit. If multiple electric generating units are located on site, only one electric generating unit needs to be tested. Each test shall consist of 30 sets of 24 consecutive observations (at 15 second intervals) to yield a six minute average. The details of the tests are to be arranged with the Regional Office. The permittee shall submit a test protocol at least 30 days prior to testing. The evaluation shall be performed and demonstrate compliance within 60 days after achieving the maximum production rate at which the facility will be operated but in no event later than 180 days after start-up of the permitted facility. Should conditions prevent concurrent opacity observations, the Regional Office shall be notified in writing, within seven days, and visible emissions testing shall be rescheduled within 30 days. Rescheduled testing shall be conducted under the same conditions (as possible) as the initial performance tests. One copy of the test result shall be submitted to the Regional Office within 60 days after test completion [and shall conform to the test report format enclosed with this general permit].
17. **Stack Tests** – Every five years and upon request by the DEQ, the permittee shall conduct additional performance tests for NO<sub>x</sub>, CO, PM-10, and PM 2.5 from the electric generating unit to demonstrate compliance with the emission limits contained in this general permit. If multiple electric generating units are located on site, only one electric generating unit needs to be tested. The details of the tests shall be arranged with the Regional Office.
18. **Visible Emissions Evaluation** – Every five years and upon request by the DEQ, the permittee shall conduct additional visible emission evaluations from the electric generating unit to demonstrate compliance with the visible emission limits contained in this permit. If multiple electric generating units are located on site, only one electric generating unit needs to be tested. The details of the tests shall be arranged with the Regional Office.

**Records:**

19. **On Site Records** - The permittee shall maintain records of emission data and operating parameters as necessary to demonstrate compliance with this general permit. The content and format of such records shall be arranged with the Regional Office. These records shall include, but are not limited to:
- a. Total combined annual throughput of fuel for the electric generating units, calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.
  - b. Total annual heat input values to show compliance with Conditions 8 and 9.
  - c. All fuel supplier certifications.

- d. Engine information including make, model, serial number, model year, maximum engine power, and engine displacement for each electric generating facility.
- e. Written manufacturer specifications or written standard operating procedures prepared by the permittee for each electric generating facility.
- f. Results of all stack tests, visible emission evaluations and performance evaluations.
- g. Operation and control device monitoring records for the fuel flow meter.
- h. Scheduled and unscheduled maintenance/testing and operator training.

These records shall be available for inspection by the DEQ and shall be current for the most recent five years.

**Notifications:**

20. **Initial Notifications** - The permittee shall furnish written notification to the Regional Office of:

- a. The actual date on which construction of each electric generating facility commenced within 30 days after such date.
- b. The anticipated start-up date of each electric generating facility postmarked not more than 60 days nor less than 30 days prior to such date.
- c. The actual start-up date of each electric generating facility within 15 days after such date.
- d. The anticipated date of performance tests of each electric generating facility postmarked at least 30 days prior to such date.

**General Requirements:**

21. **Permit Invalidation** – This general permit to construct, install, or operate each electric generating facility shall become invalid, unless an extension is granted by the DEQ, if:

- a. A program of continuous construction is not commenced within the latest of the following:
  - i. 18 months from the date that this general permit is issued to the permittee;
  - ii. Nine months from the date that the last permit or other authorization was issued from any other governmental entity;
  - iii. Nine months from the date of the last resolution of any litigation concerning any such permits or authorization; or

- b. A program of construction is discontinued for a period of 18 months or more, or is not completed within a reasonable time, except for a DEQ approved period between phases of a phased construction project.

**22. Permit Suspension/Revocation** - This general permit may be suspended or revoked if the permittee:

- a. Knowingly makes material misstatements in the permit application or any amendments to it;
- b. Fails to comply with the conditions of this general permit;
- c. Fails to comply with any emission standards applicable to a permitted emissions unit;
- d. Causes emissions from the stationary source which result in violations of, or interfere with the attainment and maintenance of, any ambient air quality standard; or
- e. Fails to operate in conformance with any applicable control strategy, including any emission standards or emission limitations, in the State Implementation Plan in effect at the time an application for this permit is submitted.

**23. Right of Entry** - The permittee shall allow authorized local, state, and federal representatives, upon the presentation of credentials:

- a. To enter upon the permittee's premises on which the facility is located or in which any records are required to be kept under the terms and conditions of this permit;
- b. To have access to and copy at reasonable times any records required to be kept under the terms and conditions of this permit or the State Air Pollution Control Board Regulations;
- c. To inspect at reasonable times any facility, equipment, or process subject to the terms and conditions of this permit or the State Air Pollution Control Board Regulations; and
- d. To sample or test at reasonable times.

For purposes of this condition, the time for inspection shall be deemed reasonable during regular business hours or whenever the facility is in operation. Nothing contained herein shall make an inspection time unreasonable during an emergency.

**24. Maintenance/Operating Procedures** – At all times, including periods of start-up, shutdown, and malfunction, the permittee shall, to the extent practicable, maintain and operate the affected source, including associated air pollution control equipment, in a manner consistent with good air pollution control practices for minimizing emissions.

The permittee shall take the following measures in order to minimize the duration and frequency of excess emissions, with respect to process equipment which affect such emissions:

- a. Develop a maintenance schedule and maintain records of all scheduled and non-scheduled maintenance.
- b. Maintain an inventory of spare parts.
- c. Have available written operating procedures for equipment. These procedures shall be based on the manufacturer's recommendations, at a minimum.
- d. Train operators in the proper operation of all such equipment and familiarize the operators with the written operating procedures, prior to their first operation of such equipment. The permittee shall maintain records of the training provided including the names of trainees, the date of training and the nature of the training.

Records of maintenance and training shall be maintained on site for a period of five years and shall be made available to DEQ personnel upon request.

25. **Record of Malfunctions** – The permittee shall maintain records of the occurrence and duration of any bypass, malfunction, shutdown or failure of the facility or its associated air pollution control equipment that results in excess emissions for more than one hour. Records shall include the date, time, duration, description (emission unit, pollutant affected, cause), corrective action, preventive measures taken and name of person generating the record.
26. **Notification for Facility or Control Equipment Malfunction** - The permittee shall furnish notification to the Regional Office of malfunctions of the affected facility or related air pollution control equipment that may cause excess emissions for more than one hour, by facsimile transmission, telephone or telegraph. Such notification shall be made as soon as practicable but no later than four daytime business hours after the malfunction is discovered. The permittee shall provide a written statement giving all pertinent facts, including the estimated duration of the breakdown, within two weeks of discovery of the malfunction. When the condition causing the failure or malfunction has been corrected and the equipment is again in operation, the permittee shall notify the Regional Office.
27. **Violation of Ambient Air Quality Standard** - The permittee shall, upon request of the DEQ, reduce the level of operation or shut down a facility, as necessary to avoid violating any primary ambient air quality standard and shall not return to normal operation until such time as the ambient air quality standard will not be violated.
28. **Change of Ownership** - In the case of a transfer of ownership of a stationary source, the new owner shall abide by any current permit issued to the previous owner. The new owner shall notify the Regional Office of the change of ownership within 30 days of the transfer.

29. **Permit Copy** - The permittee shall keep a copy of this permit on the premises of the facility to which it applies.