

**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: July 6, 2010

INTRODUCTION

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

Start: 9:30 a.m.
End: 12:20 p.m.

Subcommittee Members Present:

Elizabeth Aiken
Jerome A. Brooks
Terry Darton
Michael W. Kendall, R.S.
Mary E. Major
Rebekah Remick
William Scarpinato
Joe Suchecki

Subcommittee Members Absent:

Walid M. Daniel, PE, CEM
Susan Stewart

Public Attendees:

Mr. Andrew Gayne

Ms. Jennifer Taber

SUMMARY OF DISCUSSION

Mr. Darton reviewed issues identified in both email and draft GP (copy attached.)

1. Horsepower vs. Kw.
2. Definition of "Integrated Operational Period",
3. Definition of operation,
4. Use of term "affected unit" as opposed to "facility",
5. Authorized fuels, and
6. Stack testing.

Group consensus was achieved for the following:

1. Will use both horsepower and Kw.
2. Will use the definition as suggested by Terry; will change the definition of start up to reflect new definition of integrated operation period.
3. Will provide a definition of "operation" to reflect the position that operation means the burning of fuel regardless of whether any electricity is generated.
4. Will use the term "affected unit" to reference any unit covered by this general permit to ensure there is no confusion as to which units are covered at a source.
5. Will revamp the fuels conditions on authorized fuels by "combining and cleaning-up" which fuels can be used and what the limitations are, i.e. combining 3 conditions into 2.
6. Will revamp the section on stack testing to require the testing of 50% of all compression ignition units regardless of Tier 4 certification addition performance testing for 20% every three years; will require testing for 100% spark ignition engines.

Ms. Major distributed a draft of the Peak Shaver GP in regulatory format which includes Part IV (Using Fuel Throughput for Compliance) and Part V (Using Hours of Operation for Compliance) depending upon the method chosen by the permittee. This will be updated and redistributed to reflect the changes as a result of the meeting discussions. This draft will be reviewed at the next meeting.

NEXT MEETING DATE

The next meeting is scheduled for Monday, July 19, 2010, 2nd Floor Conference Room C, Department of Environmental Quality, 629 E. Main Street, Richmond, Virginia. The committee also agreed to additional meeting dates:

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 additional meeting dates 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. Copy Email from Terry Darton to Mary Major dated June 30, 2010
3. Peak Shaving Generator General Permit including comments from Mr. Darton
4. Peak Shaving Generator General Permit in regulatory format.

TEMPLATES\GEN-PERMIT\GP08
REG\GEN-DEV\Dg-GP08-4

Attachments

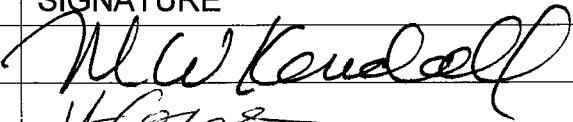
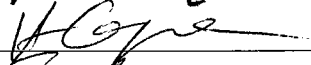

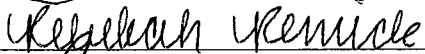


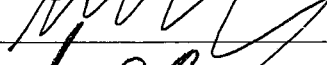

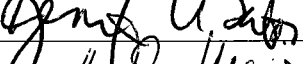
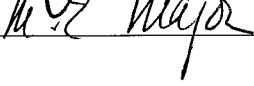
COMMONWEALTH OF VIRGINIA
STATE AIR POLLUTION CONTROL BOARD

TECHNICAL ADVISORY COMMITTEE MEETING
ATTENDANCE RECORD

July 6, 2010

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

LOCATION: 11th Floor Conference Room, Department of Environmental Quality, 629
East Main Street, Richmond, Virginia

PRINTED NAME	SIGNATURE
Mike Kendall	
Andy Gayne	
Elizabeth Aiken	
Rebekah Remick	
Joe Suchecki	
Terry Dawson	
Bill Sargent	
Jerome Brooks	
Jennifer Tabor	
Mary Major	

Major, Mary (DEQ)

From: Darton, Terry (DEQ)
Sent: Wednesday, June 30, 2010 5:45 PM
To: Major, Mary (DEQ)
Cc: Aiken, Elizabeth (DEQ)
Subject: Comments on Peak Shaving GP

Beth,

My comments are as follows:

1. In the applicability section under A.a. the definition uses aggregate rated electrical power output rather than aggregate rated mechanical output. The definition should be changed to mechanical or use engine horsepower rather than electrical. My reason for this suggestion is two fold, first electrical power output is not defined. This term could apply to the engine or the generator and I know from experience that different generators can be coupled to the same size engine and vice versa. We have seen where an engine can be coupled to a 2,000 kW or 2250 kW generator or 1750 kW generator. While the actual engine horsepower would be 2682 hp the conversion of 1750 kW would imply that the engine horsepower is 2346 or it could be as high as 3017. Secondly there are two rules of thumb when converting electrical kW output to hp. The first is to use 1 divided by 1.34 or multiplying horsepower by 0.7463 to convert hp output to kW output and the second is to use 0.9 to reduce the engine kW to generator output. The 0.9 implies that the generator is 90% efficient in converting "mechanical" kW to generator electrical output. These two conversion factors are rule of thumb conversions and each engine and generator manufacturer may have better or worse conversion factors depending on design. Also we are permitting the emissions from the engine and not the generator therefore engine horsepower as derived from a dyno test is a better point to start when determining emissions.
2. The same issue comes into play in section A.b.
3. The definition of Integration Operational Period should read as follows; that period of time beginning with the first time that the stationary internal combustion engine generator set is started on site and ending when the internal combustion generator set is fully integrated with the facilities electrical system. In no case shall this period extend past 30 days.
4. The definition of Operation should read: is defined
5. I suggest that the language in Condition 1 to read ' . . . operating hours for each affect unit, calculated monthly . . . ' This change is necessary because the condition as written implies that any unit that doesn't meet the definition of electric generating unit does not require a non-resettable hour meter and this could lead the source down the non-compliance road for the NSPS. I know that we are not enforcing the NSPS but we don't want to imply that the NSPS is not effective to their source.
6. Condition 2 should have affected unit substituted for electric generating unit in line 3.
7. I would suggest changing the Operating Limitations as follows:
 - a. 3. Fuel – The approved fuel for each CI affected unit is diesel fuel oil and shall meet the specification below:
 - i. Diesel fuel oil which meets the ASTM D975 specification for DFO numbers
1 OR 2:
 1. Maximum sulfur content per shipment 0.0015%

4. Fuel – The approved fuel for each affected unit is bio-diesel fuel oil and shall meet the specification below:

Bio-diesel fuel oil which meets the ASTM D6751 specification for BDFO
Maximum sulfur content per shipment 0.0015%

5. Fuel – The approved fuel for each SI affected unit is Natural or Liquid Propane Gas and shall meet the specification below:

Natural Gas which meets the ASTM D1826, D2382 or a DEQ approved equivalent method with a minimum heat content of 1,000 Btu/cf HHV

Liquid Propane Gas including butane and propane with meets ASTM D1835 specification.

8. Condition 8 substitute affected unit for electric generating unit.

9. Condition 9 should have emission in g/bhp-hr.

Can you send me an electronic copy the draft Peak Shaving Gen Permit so I can mark it up with my other changes as doing it the way I have above is taking to long. I appreciate it and I am sure that you are frustrated with me. My apology.

Terry H Darton

Air Permit Manager

NRO

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DEQ Home Page: www.deq.virginia.gov

Peak Shaving Generator General Permit (Fuel)

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 2,959 kW and less than 73,610 kW.
 - b. For spark ignition engines:
 - i. Units located in an Attainment Area: Engines with an aggregate rated electrical power output greater than or equal to 3,091 kW and less than 76,200 kW.
 - ii. Units located in a Nonattainment Area: Engines with an aggregate rated electrical power output greater than or equal to 3,091 kW and less than 47,200 kW.
- B. Any electric generating unit that is a major source or is located at a major source, as defined in Articles 1, 7, 8, or 9 of Part II of 9 VAC 5-80 (Permits for Stationary Sources) shall not be eligible for this general permit.
- C. 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.

Biodiesel fuel means a fuel comprised of mono-alkyl esters of long chain fatty acids derived from vegetable or animal fats, designated as B100, and meeting the requirements of ASTM D6751.

Biodiesel Blends means a blend of biodiesel and petroleum diesel fuel meeting either the requirements of ASTM D975 (blends up to 5%) or ASTM D7467 (blends between 6 and 20% biodiesel) and designated Bxx where xx represents the biodiesel content of the blend, e.g., B20 for a blend of 20% biodiesel and 80% petroleum diesel fuel.

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

Demand response means measures aimed at shifting time of use of electricity from peak-use periods to times of lower demand by inducing retail customers to curtail electricity usage during periods of congestion and higher prices in the electrical grid.

Demand response actions are typically undertaken by the source owner in response to a request from a utility or electrical grid system operator or in response to market prices.

Diesel fuel means any liquid obtained from the distillation of petroleum with a boiling point of approximately 150 to 360 degrees Celsius and that complies with the specifications for diesel fuel oil numbers 1 or 2, as defined by the American Society for Testing and Materials in ASTM D975. (combination of NSPS and BP)

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).

Identical electric generating units mean electric generating units that have the same make, manufacturer, model, year, size, and fuel specifications.

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 (Terry, do we need this?)

Load curtailment means similar to demand response, but referring specifically to removal or reduction of electrical loads for a limited period of time from a utility grid system in response to a request from the utility or electrical grid system operator.

Nonattainment area means as defined in 9 VAC 5-20-204.

Operation

Peak shaving means measures aimed solely at shifting time of use of electricity from peak-use periods to times of lower demand by inducing retail customers to curtail electricity usage during periods of congestion and higher prices in the electrical grid. Peak shaving is typically undertaken at a source owner's discretion in order to reduce maximum electrical usage and, therefore, cost of electrical service to the source owner.

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 the date on which each electric generating unit completes manufacturer's trials, but shall be no later than thirty days after start-up for manufacturer's trials, unless otherwise approved by the DEQ. (Andy and Sue will expand on definition)

Comment [thd1]: Recommend inserting integration operational period.

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. ~~(Joe will provide a definition. . .needs expansion)~~

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.

Comment [thd2]: Recommend using affected in place of electric generating through out the document.

Comment [thd3]: Recommend deleting this phrase and end the sentence after unit. The next sentence would read See condition 18 for record keeping requirements.

Operating Limitations:

3. **Fuel** - The approved fuels for each compression ignition electric generating unit are diesel fuel, biodiesel fuel, ~~and/or biodiesel blends.~~ These fuels shall meet the following specifications:

DIESEL FUEL which meets the ASTM D975 specification for numbers 1 or 2 fuel oil:
Maximum sulfur content per shipment: 0.0015%

BIODIESEL FUEL which meets ASTM specification D6751
Maximum sulfur content per shipment: 0.0015%

4. **Fuel** - The approved fuels for each spark ignition electric generating unit are natural gas and/or liquid propane gas.

NATURAL GAS:
Minimum heat content: 1,000 Btu/scf 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

5. ~~**Fuel** – The approved fuels shall meet the specifications below:~~

~~DIESEL FUEL which meets the ASTM D975 specification for numbers 1 or 2 fuel oil:
Maximum sulfur content per shipment: 0.0015%~~

~~(Jerome will ask EPA about JP8 kerosene)~~

NATURAL GAS:

Minimum heat content: ~~1,000 Btu/scf 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

BIODIESEL FUEL which meets ASTM specification D6751

Maximum sulfur content per shipment: ~~0.0015%~~

Comment [thd4]: Delete whole condition.

6. **Fuel Throughput** - The compression ignition electric generating unit(s) combined shall consume no more than 628,478 gallons of diesel fuel or 692,811 gallons of biodiesel fuel 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 diesel fuel and biodiesel fuel, calculated monthly as the sum of each consecutive 12 month period, shall not exceed values that will allow the following equation to hold true:

Comment [thd5]: Insert see condition 18 for record keeping requirements. This is redundant as Cond 18 calls for this record.

$$(A) * (140,000 \text{ Btu/gal}) + (B) * (127,000 \text{ Btu/gal}) \leq 87,987 \times 10^6 \text{ Btu/yr}$$

where: A = Number of gallons of diesel fuel burned during any 12 consecutive month period

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

7. **Attainment Area Fuel Throughput** - The spark ignition electric generating unit(s) combined located in an Attainment Area shall consume no more than 968,966 gallons of LPG or 91.08×10^6 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:

Comment [thd6]: This is covered in Cond 18. Replace with See condition 18 for record keeping requirements.

$$(A) * (1,000 \text{ Btu/ft}^3) + (B) * (94,000 \text{ Btu/gal}) \leq 91,083 \times 10^6 \text{ Btu/yr}$$

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

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

8. **Nonattainment Area Fuel Throughput** - The spark ignition electric generating unit(s) combined located in a Nonattainment Area shall consume no more than 600,200 gallons of LPG or 56.42×10^6 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:

Comment [thd7]: Same comment as above.

$$(A) * (1,000 \text{ Btu/ft}^3) + (B) * (94,000 \text{ Btu/gal}) \leq 56,419 \times 10^6 \text{ Btu/yr}$$

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

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

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

Emission Limits:

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

Stationary Compression Ignition Internal Combustion Engines (CI ICE)						
Engine Year	Emission Limits (g/kW-hr)					
	PM	PM-10	PM 2.5	CO	VOC	NO _x
2011-2014	0.10	0.10	0.10	3.5	0.40	0.67
2015+	0.03	0.03	0.03	3.5	0.19	0.67

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

Stationary Spark Ignition Internal Combustion Engines (SI ICE)						
Engine Year	Emission Limits (g/kW-hr)					
	PM	PM-10	PM 2.5	CO	VOC	NO _x
2011+	0.015	0.015	0.015	2.68	0.94	1.34

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

Pollutant	Nonattainment Areas Emissions (tons/yr)	Attainment Areas Emissions (tons/yr)
PM	24.4	24.4
PM-10	14.4	14.4
PM 2.5	9.4	9.4
NO _x	24.4	39.4
SO ₂	39.4	39.4
CO	99.4	99.4
VOC	24.4	39.4

13. **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:

14. **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.

15. **Preventative Maintenance** - No electric generating unit shall be used for the purposes of preventative maintenance purposes before 5 pm any day during the ozone season of May 1 – September 30.

16. **Initial Stack Test** - Initial performance tests shall be conducted for NO_x, CO, PM-10, and PM 2.5 from the electric generating unit (Jerome) using reference methods [] to determine compliance with the emission limits contained in Conditions 10 and 11.

Comment [thd8]: The test methods will be covered in subsection b. I suggest deleting this phrase.

- a. 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.
- b. Test shall be conducted in accordance with EPA methods (Jerome) for an alternative method approved by DEQ.
- c. The details of the tests are to be arranged with the Regional Office and the permittee shall submit a test protocol at least 30 days prior to testing.
- d. One copy of the test results shall be submitted to the DEQ Regional Office within 45 days after test completion and shall conform to the test report format in subsection # of this section.
- e. If multiple identical electric generating units are located on site, only one electric generating unit needs to be tested.
- f. If a compression ignition electric generating unit has been certified to meet Tier 4 standards, an initial stack test is not required. The permittee shall submit the manufacturer's certified Tier 4 testing specifications to the Regional Office in lieu of the initial stack test requirement.
- g. If stack testing was initially required, the permittee shall conduct additional performance tests every 8,760 operating hours or 3 years, whichever comes first, for NO_x, CO, PM-10, and PM 2.5 from the electric generating unit to demonstrate compliance with the emission limits contained in this general permit. The details of the tests shall be arranged with the Regional Office.

Comment [thd9]: Insert paper before copy and add one copy via removable electronic storage device. The addition of requirement for electronic storage device minimizes insertion into ECM.

Comment [thd10]: I disagree and this should be 50% of installed units.

Comment [thd11]: I disagree with this statement as we have seen significant variability in installed Tier 4 units.

Comment [thd12]: Is this total run time for all affected units or just one unit?

17. Initial Visible Emissions Evaluation – Visible Emission Evaluations (VEE) in accordance with 40 CFR Part 60, Appendix A, Method 9, shall be conducted on each electric generating unit.

- a. 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.
- b. Each test shall consist of 30 sets of 24 consecutive observations (at 15 second intervals) to yield a six minute average.
- c. The details of the tests are to be arranged with the Regional Office and the permittee shall submit a test protocol at least 30 days prior to testing.
- d. One copy of the test results shall be submitted to the DEQ Regional Office within 45 days after test completion and shall conform to the test report format in subsection # of this section.

- e. If multiple identical electric generating units are located on site, only one electric generating unit needs to be tested.
- f. If a compression ignition electric generating unit has been certified to meet Tier 4 standards, an initial visible emissions evaluation is not required. The permittee shall submit the manufacturer's certified Tier 4 testing specifications to the Regional Office in lieu of the initial visible emission evaluation requirement.
- g. If a visible emission evaluation was initially required, the permittee shall conduct additional visible emission evaluations every 8,760 operating hours or 3 years, whichever comes first, from the electric generating unit to demonstrate compliance with the visible emission limits contained in this general permit. The details of the tests shall be arranged with the Regional Office.

Comment [thd13]: This is not based on significant valid data.

Comment [thd14]: Same question as above.

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 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 6, 7, and 8.
- 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. The written standard operating procedures prepared by the permittee cannot be less stringent than the written manufacturer specifications.
- 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.

Comment [thd15]: Consumed to demonstrate compliance with conditions 6, 7 and 8.

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 date on which manufacturer integration began, no less than 15 days after such date.
- c. 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.
- d. The actual start-up date of each electric generating facility within 15 days after such date.
- e. The anticipated date of performance tests of each electric generating facility postmarked at least 30 days prior to such date.

Comment [thd16]: New language.

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.

Comment [thd17]: Substitute affected unit for facility.

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.

Comment [thd18]: Substitute affected unit for facility.

Comment [thd19]: Ibid

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.

9VAC5 CHAPTER 530.
NONEMERGENCY PEAKE SHAVING GENERAL PERMIT

Part I Definitions.

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- 9VAC5-530-20. Terms defined.

Part II General Provisions.

- 9VAC5-530-30. Purpose and basis.
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- 9VAC5-530-90. Requirements for granting an authorization to operate under the general permit.
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- 9VAC5-530-140. General permit.
- 9VAC5-530-150. General terms and conditions.
- 9VAC5-530-160. Process requirements.
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- 9VAC5-530-190. Compliance determination and verification by emission testing.
- 9VAC5-530-200. Recordkeeping requirements.
- 9VAC5-530-210. Reporting requirements.

PART I.
Definitions.

9VAC5-530-10. General.

A. Unless specifically defined in the Virginia Air Pollution Control Law or in this chapter, terms used shall have the meaning given them by 9VAC5-10-20 (general definitions, Regulations for the Control and Abatement of Air Pollution), 9VAC5-170-20 (definitions, Regulation for General Administration), or commonly ascribed to them by recognized authorities, in that order of priority.

9VAC5-530-20. Terms defined.

"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 fuel" 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 Blends" means a blend of biodiesel and petroleum diesel fuel meeting either the requirements of ASTM D975 (blends up to 5%) or ASTM D7467 (blends between 6 and 20% biodiesel) and designated Bxx where xx represents the biodiesel content of the blend, e.g., B20 for a blend of 20% biodiesel and 80% petroleum diesel fuel.

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

"Demand response" means measures aimed at shifting time of use of electricity from peak-use periods to times of lower demand by inducing retail customers to curtail electricity usage during periods of congestion and higher prices in the electrical grid. Demand response actions are typically undertaken by the source owner in response to a request from a utility or electrical grid system operator or in response to market prices.

"Diesel fuel" means any liquid obtained from the distillation of petroleum with a boiling point of approximately 150 to 360 degrees Celsius and that complies with the specifications for diesel fuel oil numbers 1 or 2, as defined by the American Society for Testing and Materials in ASTM D975. (combination of NSPS and BP)

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

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

"Identical electric generating units" mean electric generating units that have the same make, manufacturer, model, year, size, and fuel specifications.

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 (Terry, do we need this?)

"Load curtailment" means similar to demand response, but referring specifically to removal or reduction of electrical loads for a limited period of time from a utility grid system in response to a request from the utility or electrical grid system operator.

"Nonattainment area" means as defined in 9 VAC 5-20-204.

"Operation" means

"Peak shaving" means measures aimed solely at shifting time of use of electricity from peak-use periods to times of lower demand by inducing retail customers to curtail electricity usage during periods of congestion and higher prices in the electrical grid. Peak shaving is typically undertaken at a source owner's discretion in order to reduce maximum electrical usage and, therefore, cost of electrical service to the source owner.

"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 the date on which each electric generating unit completes manufacturer's trials, but shall be no later than thirty days after start-up for manufacturer's trials, unless otherwise approved by the DEQ. Andy and Sue will expand on definition.

"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. (Joe will provide a definition... needs expansion)

PART II. GENERAL PROVISIONS.

9VAC5-530-30. Purpose and basis.

This general permit is being issued under the authority of 9VAC5-80-1250.

9VAC5-530-40. 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:

1. For compression ignition engines: Tier 4 engines (or equivalent) with an aggregate rated electrical power output greater than or equal to 2,959 kW and less than 73,610 kW.

2. For spark ignition engines located in an attainment area and have an aggregate rated electrical power output greater than or equal to 3,091 kW and less than 76,200 kW.

3. For spark ignition engines located in a nonattainment area and have an aggregate rated electrical power output greater than or equal to 3,091 kW and less than 47,200 kW. Should this also apply for the hourly compliance permit?

B. This chapter applies throughout the Commonwealth of Virginia.

C. Any electric generating unit that is a major source or is located at a major source, as defined in Articles 1, 7, 8, or 9 of Part II of 9 VAC 5-80 (Permits for Stationary Sources) shall not be 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.

9VAC5-530-50. General.

A. Any owner requesting authority to operate an electric generating unit

shall comply with the requirements of 9VAC5-80 (Permits for Stationary Sources) and register with the department as required under 9VAC5-20-160. Not all parts of the general permit will apply to every permittee. The determination of which parts apply will be based on where the unit is located and method of compliance determination. Parts I, II and III apply to all permittees. Part IV will apply to units using fuel flow for compliance determination. Part V will apply to units using hours of operation for compliance determination.

B. The existence of a permit under this chapter shall not constitute a defense of a violation of the Virginia Air Pollution Control Law or the regulations of the board and shall not relieve any owner of the responsibility to comply with any applicable regulations, laws, ordinances and orders of the governmental entities having jurisdiction.

C. The permittee shall, upon request of the DEQ, reduce the level of operation or shut down a unit, 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.

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

1. A program of continuous construction is not commenced within the latest of the following:

a. Eighteen months from the date that this general permit is issued to the permittee;

b. Nine months from the date that the last permit or other authorization was issued from any other governmental entity;

c. Nine months from the date of the last resolution of any litigation concerning any such permits or authorization; or

2. 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.

E. 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.

F. 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:

1.. Develop a maintenance schedule and maintain records of all scheduled and non-scheduled maintenance.

2. Maintain an inventory of spare parts.

G. Have available written operating procedures for equipment. These procedures shall be based on the manufacturer's recommendations, at a minimum.

1. 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.

2. 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.

H. The permittee shall keep a copy of this permit on the premises of the facility to which it applies.

9VAC5-530-60. Circumvention, Suspension or Revocation.

A. No permittee shall cause or permit the installation or use of any device or any means which, without resulting in reduction in the total amount of air pollutants emitted, conceals or dilutes an emission of air pollutants which would otherwise violate this chapter.

B. This general permit may be suspended or revoked if the permittee:

1. Knowingly makes material misstatements in the permit application or any amendments to it.

2. Fails to comply with the conditions of this general permit.

3. Fails to comply with any emission standards applicable to a permitted emissions unit.

4. Causes emissions from the stationary source which result in violations of, or interfere with the attainment and maintenance of, any ambient air quality standard.

5. 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

9VAC5-530-70. Compliance.

A. Whenever it is necessary for the purpose of the regulations of the board, the board or an agent authorized by the board may at reasonable times enter an establishment or upon property, public or private, for the purpose of obtaining information or conducting surveys or investigations as authorized by §10.1-1315 or § 46.2-1187.1 of the Code of Virginia.

B. 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.

C. Upon presentation of credentials and other documents as may be required by law, the permittee shall allow the department to perform the following:

1. Enter upon the premises where the source is located or emissions-related activity is conducted, or where records must be kept under the terms and conditions of this permit.

2. Have access to and copy, at reasonable times, any records that must be kept under the terms and conditions of this permit.

3. Inspect at reasonable times any facilities, equipment (including monitoring equipment), practices, or operations regulated or required under this permit.

4. Sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with this permit or applicable requirements.

9VAC5-530-80. Enforcement of a general permit.

A. The following general requirements apply:

1. Pursuant to § 10.1-1322, failure to comply with any term or condition of the general permit shall be considered a violation of the Virginia Air Pollution Control Law.

2. A permittee who violates or fails, neglects or refuses to obey any provision of this chapter or the Virginia Air Pollution Control Law, any applicable requirement, or any permit term or condition, knowingly makes any false

statement, representation or certification in any form, in any notice or report required by a permit, or who knowingly renders inaccurate any required monitoring device or method shall be subject to the provisions of §§ 10.1-1307, 10.1-1309, 10.1-1316, 10.1-1318 and § 10.1-1320 of the Virginia Air Pollution Control Law.

B. Violation of this permit is subject to the enforcement provisions including, but not limited to, those contained in 9VAC5-170 (Regulation for General Administration) and §§ 10.1-1309, 10.1-1309.1, 10.1-1311 and 10.1-1316 of the Virginia Air Pollution Control Law.

C. If any condition, requirement or portion of this permit is held invalid or inapplicable under any circumstance, such invalidity or inapplicability shall not affect or impair the remaining conditions, requirements, or portions of this permit.

D. The permittee shall comply with all conditions of this permit. Any noncompliance with this permit constitutes a violation of the Virginia Air Pollution Control Law and is grounds (i) for enforcement action, or (ii) for suspension or revocation of the authorization to operate under this permit.

E. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

F. The authorization to operate under this permit may be suspended or revoked for cause as specified in 9VAC5-530-80. The filing by a permittee of a (i) request for reauthorization to operate under this permit, or (ii) notification of termination, planned changes or anticipated noncompliance does not stay any condition of this permit.

H. This permit does not convey any property rights of any sort, or any exclusive privilege.

I. The permittee shall furnish to the department, within 30 days of notification, any information that the department may request in writing to determine whether cause exists for suspending or revoking the authorization to operate under this permit or to determine compliance with this permit. Upon request, the permittee shall also furnish to the department copies of records required to be kept by this permit and, for information claimed to be confidential, the permittee shall furnish such records to the department along with a claim of confidentiality meeting the requirements of 9VAC5-170-60.

PART III. GENERAL PERMIT ADMINISTRATIVE PROCEDURES.

9VAC5-530-90. Requirements for granting an authorization to operate under the

general permit.

A. The department may grant an authorization to operate under the general permit for an electric generating unit that meets the applicability criteria in 9VAC5-530-40 and the operating limitations in 9VAC5-530-170 Or 9VAC5-530-250.

B. The general permit will be issued in accordance with § 2.2-4006 A 9 of the Administrative Process Act.

9VAC5-530-100. Applications for coverage under the general permit.

A. The application for an electric generating unit shall meet the requirements of this chapter and include all information necessary to determine qualification for and to assure compliance with the general permit.

B. Any application form, report, compliance certification, or other document required to be submitted to the department under this chapter shall meet the requirements of 9VAC5-30-230.

C. Any applicant who fails to submit any relevant facts or who has submitted incorrect information in an application shall, upon becoming aware of such failure or incorrect submittal, promptly submit such supplementary facts or corrected information.

9VAC5-530-110. Required information for initial applications.

A. The department will make application forms available to applicants. The information required by this section shall be determined and submitted according to procedures and methods acceptable to the department.

B. Each initial application for coverage under the general permit shall include, but not be limited to, the following:

1. Information specified in the appropriate air permit application form for an electric generating unit as determined by the regional office

2. A document certification with all applicable requirements completed by a responsible official.

9VAC5-530-120. Granting an authorization to operate under the general permit.

A. The department may grant authorization to operate under the conditions and terms of the general permit to sources that meet the applicability criteria set forth in 9VAC5-530-40.

B. Granting an authorization to operate under the general permit to a unit covered by the general permit is not subject to the public participation procedures.

9VAC5-530-130. Transfer of authorizations to operate under the general permit.

A. No person shall transfer an authorization to operate under the general permit from one electric generating unit to another or from one piece of equipment to another.

B. In the case of a transfer of ownership of an electric generating unit, the new owner shall comply with any permit issued or authorization to operate under the general permit granted to the previous owner. The new owner shall notify the department of the change in ownership within 30 days of the transfer.

C. In the case of a name change of an electric generating unit, the owner shall comply with any permit issued or authorization to operate under the general permit granted under the previous source name. The owner shall notify the department of the change in source name within 30 days of the name change.

PART IV.

GENERAL PERMIT TERMS AND CONDITIONS FOR ELECTRIC GENERATING UNITS USING FUEL THROUGHPUT FOR COMPLIANCE DEMONSTRATION.

9VAC5-530-140. General permit.

A. Any owner whose application is approved by the director shall receive the following permit and shall comply with the requirements in it and be subject to all requirements of this chapter and the regulations of the board.

B. In compliance with the provisions of the Virginia Air Pollution Control Law and regulations adopted pursuant to it, owners of electric generating units are authorized to operate under the authority of this permit, except those where board regulations or policies prohibit such operation.

C. The authorization to operate under this permit shall be in accordance with the cover letter to this permit, 9VAC5-530-150 (General terms and conditions), 9VAC5-530-160 (Monitoring requirements) 9VAC5-530-170 (Operating Limits), 9VAC5-530-180 (Emissions Limits), 9VAC5-530-190 (Testing Requirements), 9VAC5-530-200 (Recordkeeping requirements), 9VAC5-530-210 and (Reporting requirements), 9VAC5-530-220.

9VAC5-530-150. General terms and conditions.

A. The permittee is authorized to operate an electric generating unit

located within the boundaries of the Commonwealth of Virginia, in accordance with the approved permit application and conditions of this permit except where board regulations or policies prohibit such activities.

B. The permittee shall comply with the terms and conditions of this permit prior to commencing any physical or operational change or activity that will result in making the facility subject to the new source review program.

9VAC5-530-160. Monitoring Requirements

A. 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.

B. 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 to ensure good performance. The permittee shall keep a log of the observations from the fuel flow meter.

C. Each electric generating unit shall comply with visible emissions and fugitive dust/emissions standards of Article 1 of Part II of 9VAC5-50 (New and Modified Stationary Sources). No owner or other person shall cause or permit any materials or property to be handled, transported, stored, used, constructed, altered, repaired, or demolished without taking reasonable precautions to prevent particulate matter from becoming airborne.

D. Each electric generating unit shall comply with the odor standards Article 2 of Part II of 9VAC5-50 (New and Modified Stationary Sources). Under no circumstances shall the unit operate in such a manner as to cause an odor objectionable to individuals of ordinary sensibility.

9VAC5-530-170. Operating Limits.

A. The approved fuels for each compression ignition electric generating unit are distillate oil and/or bio-diesel and/or biodiesel blends.

B. The approved fuels for each spark ignition electric generating unit are natural gas and/or liquid propane gas.

C. The approved fuels shall meet the specifications below:

1. Distillate oil which meets the ASTM D975 specification for

numbers 1 or 2 fuel oil; maximum sulfur content per shipment, 0.0015%.

(Jerome will ask EPA about JP8 kerosene)

2. Natural gas with a minimum heat content of 1,000 Btu/scf HHV as determined by ASTM D1826, D2382, or a DEQ-approved equivalent method.

3. Liquid propane gas, including butane and propane, which meets ASTM specification D1835.

4. Bio-diesel which meets ASTM specification D6751; maximum sulfur content per shipment, 0.0015%.

D. The compression ignition electric generating unit(s) combined shall consume no more than 628,478 gallons of distillate oil or 692,811 gallons of bio-diesel per year, calculated monthly as the sum of each consecutive 12-month period.

1. 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.

2. For units using any combination of the two fuels, 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:

$$(A) * (140,000 \text{ Btu/gal}) + (B) * (127,000 \text{ Btu/gal}) \leq 87,987 \times 10^6 \text{ Btu/yr}$$

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.

E. The spark ignition electric generating unit(s) combined located in an Attainment Area shall consume no more than 968,966 gallons of LPG or 91.08×10^6 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:

$$(A) * (1,000 \text{ Btu/ft}^3) + (B) * (94,000 \text{ Btu/gal}) \leq 91,083 \times 10^6 \text{ Btu/yr}$$

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.

F. The spark ignition electric generating unit(s) combined located in a Nonattainment Area shall consume no more than 60,200 gallons of LPG or 56.42×10^6 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:

$$(A) * (1,000 \text{ Btu/ft}^3) + (B) * (94,000 \text{ Btu/gal}) \leq 56,419 \times 10^6 \text{ Btu/yr}$$

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.

G. For units using distillate oil or bio-diesel 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:

1. The name of the fuel supplier.
2. The date on which the distillate oil or bio-diesel was received.
3. The quantity of distillate oil or bio-diesel delivered in the shipment.
4. 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.
5. A statement that the bio-diesel complies with the American Society for Testing and Materials specifications (ASTM D6751), and

6. The sulfur content of the distillate oil or bio-diesel.

9VAC5-530-180. Emission Limits.

A. Emissions from the operation of each compression ignition electric generating unit shall not exceed the limits specified below:

Stationary Compression Ignition Internal Combustion Engines (CI ICE)							
Generator Size (kW)	Engine Year	Emission Limits (g/kW-hr)					
		PM	PM-10	PM 2.5	CO	VO C	NO _x
x ≥ 1,535	2011-2014	0.10	0.10	0.10	3.5	0.40	0.67
	2015+	0.03	0.03	0.03	3.5	0.19	0.67

B. Emissions from the operation of each spark ignition electric generating unit shall not exceed the limits specified below:

Stationary Spark Ignition Internal Combustion Engines (SI ICE)							
Generator Size (kW)	Engine Year	Emission Limits (g/kW-hr)					
		PM	PM-10	PM 2.5	CO	V O C	NO _x
x ≥ 1,535	2011+	0.015	0.015	0.015	2.68	0.94	1.34

C. Combined facility wide emissions from the operation of the electric generating unit(s) shall not exceed the limits specified below:

Pollutant	<u>Nonattainment Areas Emissions (tons/yr)</u>	<u>All Other Areas Emissions (tons/yr)</u>
PM	24.4	24.4
PM-10	14.4	14.4
PM 2.5	9.4	9.4
NO _x	24.4	39.4
SO ₂	39.4	39.4
CO	99.4	99.4
VOC	24.4	39.4

D. 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

9VAC5-530-190. Testing requirements.

A. Each electric generating unit shall be constructed and 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.

B. No electric generating unit shall be used for the purposes of preventative maintenance purposes before 5 pm any day during the ozone season of May 1 – September 30.

C. Initial performance tests shall be conducted for NOX, CO, PM-10, and PM 2.5 from the electric generating unit (Jerome) using reference methods [?] to determine compliance with the emission limits contained in 9VAC5-530-180.

1. 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.

2. Test shall be conducted in accordance with EPA methods or an alternative method approved by DEQ. (Jerome) [or an alternative method approved by DEQ].

3. The details of the tests are to be arranged with the Regional Office and the permittee shall submit a test protocol at least 30 days prior to testing.

4. One copy of the test results shall be submitted to the DEQ Regional Office within 45 days after test completion and shall conform to the test report format in 9VAC5-530-210.

5. If multiple identical electric generating units are located on site, only one electric generating unit needs to be tested.

D.. If a compression ignition electric generating unit has been certified to meet Tier 4 standards, an initial stack test is not required. The permittee shall submit the manufacturer's certified Tier 4 testing specifications to the Regional Office in lieu of the initial stack test requirement.

E. If stack testing was initially required, by the DEQ, the permittee shall

conduct additional performance every 8,760 operating hours or 3 years, whichever comes first for NOX, CO, PM-10, and PM 2.5 from the electric generating unit to demonstrate compliance with the emission limits contained in this general permit. The details of the tests shall be arranged with the Regional Office.

F. Visible Emission Evaluations (VEE) in accordance with 40 CFR Part 60, Appendix A, Method 9, shall be conducted on each electric generating unit.

1. 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.

2. 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.

3. Rescheduled testing shall be conducted under the same conditions (as possible) as the initial performance tests.

4. Each test shall consist of 30 sets of 24 consecutive observations (at 15 second intervals) to yield a six minute average.

5. The details of the tests are to be arranged with the Regional Office and the permittee shall submit a test protocol at least 30 days prior to testing.

6. One copy of the test results shall be submitted to the DEQ Regional Office within 45 days after test completion and shall conform to the test report format in 9VAC5-530-210.

7. If multiple identical electric generating units are located on site, only one electric generating unit needs to be tested.

8. If a compression ignition electric generating unit has been certified to meet Tier 4 standards, an initial visible emissions evaluation is not required. The permittee shall submit the manufacturer's certified Tier 4 testing specifications to the Regional Office in lieu of the initial visible emission evaluation requirement.

G. If a visible emission evaluation was initially required, the permittee shall conduct additional visible emission evaluations every 8,760 operating hours or 3 years, whichever comes first from the electric generating unit to demonstrate compliance with the visible emission limits contained in this general permit. The details of the tests shall be arranged with the Regional Office.

9VAC5-530-200. Recordkeeping.

A. The permittee shall maintain records of emission data and operating parameters as necessary to demonstrate compliance with this general permit.

B. 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.

C. The content and format of such records shall be arranged with the Regional Office. These records shall include, but are not limited to:

1. 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.

2. Total annual heat input values to show compliance with 9VAC5-260 and 9VAC5-270. (Question about the reference was conditions 8 and 9 in straw-man.....)

3. All fuel supplier certifications.

4. Engine information including make, model, serial number, model year, maximum engine power, and engine displacement for each electric generating facility.

5. Written manufacturer specifications or written standard operating procedures prepared by the permittee for each electric generating facility. The written standard operating procedures prepared by the permittee cannot be less stringent than the written manufacturer specifications.

6. Results of all stack tests, visible emission evaluations and performance evaluations.

7. Operation and control device monitoring records for the fuel flow meter.

8. Scheduled and unscheduled maintenance/testing and operator training.

D. These records shall be available for inspection by the DEQ and shall be

current for the most recent five years.

9VAC5-530-210. Reporting Requirements.

A. The permittee shall furnish written notification to the Regional Office of the following:

1. The actual date on which construction of each electric generating facility commenced within 30 days after such date.

2. 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.

3. The actual start-up date of each electric generating facility within 15 days after such date.

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

B. 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.

1. Such notification shall be made as soon as practicable but no later than four daytime business hours after the malfunction is discovered.

2. 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.

3. 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.

PART V.

GENERAL PERMIT TERMS AND CONDITIONS FOR ELECTRIC
GENERATING UNITS USING HOURS OF OPERATION FOR COMPLIANCE
DEMONSTRATION.

9VAC5-530-220. General permit.

A. Any owner whose application is approved by the director shall receive the following permit and shall comply with the requirements in it and be subject to all requirements of this chapter and the regulations of the board.

A. Any owner whose application is approved by the director shall receive the following permit and shall comply with the requirements in it and be subject to all requirements of this chapter and the regulations of the board.

B. In compliance with the provisions of the Virginia Air Pollution Control Law and regulations adopted pursuant to it, owners of electric generating units are authorized to operate under the authority of this permit, except those where board regulations or policies prohibit such operation.

C. The authorization to operate under this permit shall be in accordance with the cover letter to this permit, 9VAC5-530-2300 (General terms and conditions), 9VAC5-530-240 (Monitoring requirements) 9VAC5-530-250 (Operating Limits), 9VAC5-530-260 (Emissions Limits), 9VAC5-530-270 (Testing Requirements), 9VAC5-530-280 (Recordkeeping requirements), and 9VAC5-530-290 (Reporting requirements)

9VAC5-530-230. General terms and conditions.

A. The permittee is authorized to operate an electric generating unit located within the boundaries of the Commonwealth of Virginia, in accordance with the approved permit application and conditions of this permit except where board regulations or policies prohibit such activities.

B. The permittee shall comply with the terms and conditions of this permit prior to commencing any physical or operational change or activity that will result in making the facility subject to the new source review program.

9VAC5-530-240. Monitoring Requirements

A. 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 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.

B. The hour 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 to ensure good performance. The permittee shall keep a log of the observations from the hour meter.

C. Each electric generating unit shall comply with visible emissions and fugitive dust/emissions standards of Article 1 of Part II of 9VAC5-50 (New and Modified Stationary Sources). No owner or other person shall cause or permit any materials or property to be handled, transported, stored, used, constructed,

altered, repaired, or demolished without taking reasonable precautions to prevent particulate matter from becoming airborne.

D. Each electric generating unit shall comply with the odor standards Article 2 of Part II of 9VAC5-50 (New and Modified Stationary Sources). Under no circumstances shall the unit operate in such a manner as to cause an odor objectionable to individuals of ordinary sensibility.

9VAC5-530-250. Operating Limits.

1. A. The approved fuels for each compression ignition electric generating unit are distillate oil and/or bio-diesel and/or biodiesel blends.

B. The approved fuels for each spark ignition electric generating unit are natural gas and/or liquid propane gas.

C. The approved fuels shall meet the specifications below:

1. Distillate oil which meets the ASTM D975 specification for numbers 1 or 2 fuel oil; maximum sulfur content per shipment, 0.0015%.

(Jerome will ask EPA about JP8 kerosene)

2. Natural gas with a minimum heat content of 1,000 Btu/scf HHV as determined by ASTM D1826, D2382, or a DEQ-approved equivalent method.

3. Liquid propane gas, including butane and propane, which meets ASTM specification D1835.

4. Bio-diesel which meets ASTM specification D6751; maximum sulfur content per shipment, 0.0015%.

D. Each electric generating unit shall not operate more than 350 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. Total emissions for any twelve month period, calculated as the sum of all emissions from operations under this condition, shall not exceed the limits stated in 9VAC5-260 and 9VAC5-2070.

G. For units using distillate oil or bio-diesel 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:

1. The name of the fuel supplier.

2. The date on which the distillate oil or bio-diesel was received.
3. The quantity of distillate oil or bio-diesel delivered in the shipment.
4. 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.
5. A statement that the bio-diesel complies with the American Society for Testing and Materials specifications (ASTM D6751), and
6. The sulfur content of the distillate oil or bio-diesel.

9VAC5-530-260. Emission Limits.

A. Emissions from the operation of each compression ignition electric generating unit shall not exceed the limits specified below:

Stationary Compression Ignition Internal Combustion Engines (CI ICE)							
Generator Size (kW)	Engine Year	Emission Limits (g/kW-hr)					
		PM	PM-10	PM 2.5	CO	VO C	NO _x
x ≥ 1,535	2011-2014	0.10	0.10	0.10	3.5	0.40	0.67
	2015+	0.03	0.03	0.03	3.5	0.19	0.67

B. Emissions from the operation of each spark ignition electric generating unit shall not exceed the limits specified below:

Stationary Spark Ignition Internal Combustion Engines (SI ICE)							
Generator Size (kW)	Engine Year	Emission Limits (g/kW-hr)					
		PM	PM-10	PM 2.5	CO	V O C	NO _x
x ≥ 1,535	2011+	0.015	0.015	0.015	2.68	0.94	1.34

C. Combined facility wide emissions from the operation of the electric generating unit(s) shall not exceed the limits specified below:

Pollutant	<u>Nonattainment Areas Emissions (tons/yr)</u>	All Other Areas Emissions (tons/yr)
PM	24.4	24.4
PM-10	14.4	14.4
PM 2.5	9.4	9.4
NO _x	24.4	39.4
SO ₂	39.4	39.4
CO	99.4	99.4
VOC	24.4	39.4

D. 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

9VAC5-530-270. Testing requirements.

A. Each electric generating unit shall be constructed and 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.

B. No electric generating unit shall be used for the purposes of preventative maintenance purposes before 5 pm any day during the ozone season of May 1 – September 30.

C. Initial performance tests shall be conducted for NO_x, CO, PM-10, and PM 2.5 from the electric generating unit (Jerome) using reference methods [?] to determine compliance with the emission limits contained in 9VAC5-530-260 and 9 VAC5-530-270.

1. 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.

2. Test shall be conducted in accordance with EPA methods or an alternative method approved by DEQ. (Jerome) [or an alternative method approved by DEQ].

3. The details of the tests are to be arranged with the Regional Office and the permittee shall submit a test protocol at least 30 days prior to testing.

4. One copy of the test results shall be submitted to the DEQ

Regional Office within 45 days after test completion and shall conform to the test report format in 9VAC5-530-210.

5. If multiple identical electric generating units are located on site, only one electric generating unit needs to be tested.

D.. If a compression ignition electric generating unit has been certified to meet Tier 4 standards, an initial stack test is not required. The permittee shall submit the manufacturer's certified Tier 4 testing specifications to the Regional Office in lieu of the initial stack test requirement.

E. If stack testing was initially required, the permittee shall conduct additional performance tests every 8,760 operating hours or 3 years, whichever comes first, for NOX, CO, PM-10, and PM 2.5 from the electric generating unit to demonstrate compliance with the emission limits contained in this general permit. The details of the tests shall be arranged with the Regional Office.

F. Visible Emission Evaluations (VEE) in accordance with 40 CFR Part 60, Appendix A, Method 9, shall be conducted on each electric generating unit.

1. 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.

2. 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.

3. Rescheduled testing shall be conducted under the same conditions (as possible) as the initial performance tests.

4. Each test shall consist of 30 sets of 24 consecutive observations (at 15 second intervals) to yield a six minute average.

5. The details of the tests are to be arranged with the Regional Office and the permittee shall submit a test protocol at least 30 days prior to testing.

6. One copy of the test results shall be submitted to the DEQ Regional Office within 45 days after test completion and shall conform to the test report format in 9VAC5-530-210.

7. If multiple identical electric generating units are located on site, only one electric generating unit needs to be tested.

8. If a compression ignition electric generating unit has been certified to meet Tier 4 standards, an initial visible emissions evaluation is not required. The permittee shall submit the manufacturer's certified Tier 4 testing specifications to the Regional Office in lieu of the initial visible emission evaluation requirement.

G. If a visible emission evaluation was initially required, every 8,760 operating hours or 3 years, whichever comes first, the permittee shall conduct additional visible emission evaluations from the electric generating unit to demonstrate compliance with the visible emission limits contained in this general permit. The details of the tests shall be arranged with the Regional Office.

9VAC5-530-280. Recordkeeping.

A. The permittee shall maintain records of emission data and operating parameters as necessary to demonstrate compliance with this general permit.

B. 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.

C. The content and format of such records shall be arranged with the Regional Office. These records shall include, but are not limited to:

1. 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.

2. All fuel supplier certifications.

3. Engine information including make, model, serial number, model year, maximum engine power, and engine displacement for each electric generating facility.

5. Written manufacturer specifications or written standard operating procedures prepared by the permittee for each electric generating facility. The written standard operating procedures prepared by the permittee cannot be less stringent than the written manufacturer specifications.

6. Results of all stack tests, visible emission evaluations and performance evaluations.

7. Operation and control device monitoring records for the fuel flow meter.

8. Scheduled and unscheduled maintenance/testing and operator training.

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

9VAC5-530-290. Reporting Requirements.

A. The permittee shall furnish written notification to the Regional Office of the following:

1. The actual date on which construction of each electric generating facility commenced within 30 days after such date.

2. 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.

3. The actual start-up date of each electric generating facility within 15 days after such date.

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

B. 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.

1. Such notification shall be made as soon as practicable but no later than four daytime business hours after the malfunction is discovered.

2. 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.

3. 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.