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 Emergency Generators General Permit (Rev. Eg)

DATE: May 19, 2010

INTRODUCTION

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

Start: 1:30 p.m.
End: 3:15 p.m.

Subcommittee Members Present:

Liz Aikens
Michael W. Kendall, R.S.
Mary E. Major
Rebekah Remick
William Scarpinato
Susan Stewart

Subcommittee Members Absent:
Joe Suchecki
Walid M. Daniel, PE, CEM
Jerome A. Brooks

Public Attendees:
Mr. Andrew Gayne

SUMMARY OF DISCUSSION

Ms. Becky Remick reviewed the contents of the document titled the Emergency Generator General Permit - Draft 2. The TAC had discussion on the following provisions:

Definitions:

Emergency: Ms Major indicated that, after discussions with management it was suggested that perhaps the TAC could develop two parts to the GP; one for ISO emergencies and another for other emergencies as defined according to regulations of the Air Pollution Control Board. TAC members indicated that they could not determine how such a permit could be drafted and that a GP just for ISO emergencies would not be helpful as no one would use it, i.e. no one would install a generator just for such an emergency. Further discussion on this issue is necessary.

It was also discussed that there might be a conflict with NSPS regarding the federal definition of "Emergency stationary internal combustion engine" as defined in FR July 11, 2006, pg 39179. The definition of "emergency" stipulates that "a stationary CI ICE used to supply power to an electric grid or that supply power as part of a *financial arrangement with another entity are not considered to be emergency engines*." The problem arises with the "financial arrangement" part of the definition since the Emergency Load Response Program (ELRP) is a financial arrangement. Therefore, the question is; would an emergency generator that is participating in the ISO emergency (i.e. ELRP) NOT be considered an emergency generator in accordance with the NSPS? Does "financial arrangement" mean only peak shaving, demand response, etc. this is a very critical question for the TAC.

Emission Limits:

TAC still needs information to determine if engines over 30 liters/cylinder displacement can meet the 0.0015% maximum sulfur content. The committee is working to obtain this information.

TAC discussed the need to limit facility-wide annual emissions limits to less than the significant thresholds in the event that permit exempt sources are operating at the facility. The current draft only established annual limits on the generators, not the entire facility.

NEXT MEETING DATE

The next meeting is scheduled for Tuesday, June 15, 2010, 2nd 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. Emergency Generator General Permit –Draft 2

TEMPLATES\GEN-PERMIT\GP08
REG\GEN-DEV\Eg-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 Remick	Rebekah Remick
Andrew Guyre	Andrew Guyre
Jerome Brooks	Jerome Brooks
Allan Sharrett	Allan Sharrett
Susan Stewart	Susan Stewart
Mike Kendall	Mike Kendall

Emergency Generator General Permit

Applicability:

A. The affected units to which this chapter applies is each emergency generation source that operates 500 hours or less for which construction, installation, reconstruction, modification, or operation is commenced after the date of this general permit and that meets the requirements stated below:

   a. For distillate oil and or bio-diesel fired engines: Engines with an aggregate rated electrical power output greater than or equal to 1125 kW (1,675 hp) and less than ## kW (## hp).

   b. For natural gas and/or liquid propane gas fired engines: Engines with an aggregate rated electrical power output greater than or equal to ## kW (## hp) and less than ## kW (## hp).

B. Any emergency generation source that is a major source, as defined in 9 VAC 5-80-1615, is not eligible for this general permit.

C. Any emergency generation source that is located at a major source, as defined in 9 VAC 5-80-1615, is not eligible for this general permit.

D. Any emergency generation source that operates voluntarily for the purpose of peak-shaving, demand response, or as part of any other interruptible power supply arrangement with a power provider, other market participant, or system operator is not eligible for this general permit.

Definitions:

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.

Emergency means a condition that arises from sudden and reasonably unforeseeable events where the primary energy or power source is disrupted or disconnected due to conditions beyond the control of an owner or operator of a facility including:

a. A failure of the electrical grid,

b. On-site disaster or equipment failure,

c. Public service emergencies such as flood, fire, natural disaster, or severe weather conditions,

d. An ISO-declared emergency, where an ISO emergency is:

   - An abnormal system condition requiring manual or automatic action to maintain system frequency, to prevent loss of firm load, equipment damage,

or tripping of system elements that could adversely affect the reliability of an electric system or the safety of persons or property.

- Capacity deficiency or capacity excess conditions.
- A fuel shortage requiring departure from normal operating procedures in order to minimize the use of such scarce fuel.
- Abnormal natural events or man-made threats that would require conservative operations to posture the system in a more reliable state.
- An abnormal event external to the ISO service territory that may require ISO action.

Emergency generation source means a stationary internal combustion engine that operates according to the procedures in the ISO's emergency operations manual during an ISO-declared emergency.

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.

ISO-declared emergency means a condition that exists when the independent system operator (ISO) notifies electric utilities that an emergency exists or may occur and that complies with the definition of "emergency" adopted by the Board pursuant to 10.1-1307.02 B.

Tier 1 means an emergency generator source that meets Tier 1 standards. Tier 1 standards were published as a final rule on June 17, 1994.

Tier 2 means an emergency generator source that meets Tier 2 standards. Tier 2 standards were published as a final rule on October 23, 1998.

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 emergency generator source, 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.

Operating Limitations:

2. **Operating Hours** - Each emergency generator source shall not operate more than 500 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.

3. **Fuel** - The approved fuels for each emergency generator source are distillate oil, natural gas, liquid propane gas, and/or bio-diesel.

4. **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: 0.05%

   NATURAL GAS:
   Minimum heat content: 1000 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: 0.05%

5. **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:

6. **Process Emission Limits** - Emissions from the operation of each emergency generation source when burning distillate oil and/or biodiesel shall not exceed the limits specified below:

Stationary Compression Ignition Internal Combustion Engines (CI ICE)											
Engine Year	Displacement (liters/cylinder)	Generator Size (kW)	Tier	Emission Limits (g/kW-hr) PM	PM-10	PM 2.5	SO_2	CO	VOC	NO_X
Pre 2007	Less than 10	1,125 ≤ x < high	N/A	0.43	0.43	0.43	0.25	3.34	0.43	9.2
2007 and later	Less than 10	1,125 ≤ x ≤ 2,237	Tier 1	0.43	0.43	0.43	0.25	3.34	0.43	9.2
			Tier 2	0.2	0.2	0.2	0.25	3.34	6.4*	
2007 - 2010	Less than 10	2,237 < x ≤ high	N/A	0.43	0.43	0.43	0.25	3.34	0.43	9.2
2011 and later	Less than 10	2,237 < x ≤ high	Tier 1	0.43	0.43	0.43	0.25	3.34	0.43	9.2
			Tier 2	0.2	0.2	0.2	0.25	3.34	6.4*	
2007 and later	10 ≤ x < 30	2,237 < x ≤ high	Tier 1	0.43	0.43	0.43	0.25	3.34	0.43	17.0** 45.0 x $N^{-0.20}$ 9.8
2007 and later	15.0 ≤ x < 20.0	1,125 ≤ x < 3,300	Tier 2	0.43	0.43	0.43	0.25	3.34	8.7*	
2007 and later	15.0 ≤ x < 20.0	3,300 ≤ x ≤ high	Tier 2	0.43	0.43	0.43	0.25	3.34	9.8*	
2007 and later	20.0 ≤ x < 25.0	1,125 ≤ x < high	Tier 2	0.43	0.43	0.43	0.25	3.34	9.8*	
2007 and later	25.0 ≤ x < 30.0	1,125 ≤ x < high	Tier 2	0.43	0.43	0.43	0.25	3.34	11*	
2007 and later	x ≥ 30	1,125 ≤ x < high	N/A	0.15	0.15	0.15	0.25	3.34	0.43	1.6

*Combined limit for VOC and NO_X

** 17.0 g/kW-hr when maximum test speed is less than 130 rpm
45.0 x $N^{-0.20}$ when maximum test speed is 130 rpm ≤ x < 2000 rpm, where N is the maximum speed test of the engine in revolutions per minute
9.8 g/kW-hr when the maximum test speed is 2000 rpm or more

Stationary Spark Ignition Internal Combustion Engines (SI ICE)									
Engine Year	Generator Size (kW)	Emission Limits (g/kW-hr) PM	PM-10	PM 2.5	SO_2	CO	VOC	NO_X
Pre 1/1/2009	1,125 ≤ x < high	0.43	0.43	0.43	0.25	3.34	0.43	14.60
1/1/2009 and later	1,125 ≤ x < high	0.43	0.43	0.43	0.25	2.98	0.43	1.49

7. **Process Emission Limits** - Emissions from the operation of each emergency generation source when burning natural gas and/or propane shall not exceed the limits specified below:

Stationary Compression Ignition Internal Combustion Engines (CI ICE)										
Engine Year	**Displacement (liters/cylinder)**	**Generator Size (kW)**	**Tier**	**Emission Limits (g/kW-hr) PM**	**PM-10**	**PM 2.5**	**SO_2**	**CO**	**VOC**	**NO_X**
Pre 2007	Less than 10	low ≤ x < high	N/A	0.54	0.54	0.54	0.001	11.4	1.3	9.2
2007 and later	Less than 10	low ≤ x ≤ 2,237	Tier 1	0.54	0.54	0.54	0.001	11.4	1.3	9.2
			Tier 2	0.2	0.2	0.2	0.001	3.5	6.4*	
2007 - 2010	Less than 10	2,237 < x ≤ high	N/A	0.54	0.54	0.54	0.001	11.4	1.3	9.2
2011 and later	Less than 10	2,237 < x ≤ high	Tier 1	0.54	0.54	0.54	0.001	11.4	1.3	9.2
			Tier 2	0.2	0.2	0.2	0.001	3.5	6.4*	
2007 and later	10 ≤ x < 30	2,237 < x ≤ high	Tier 1	0.015	0.015	0.015	0.001	5.75	0.19	17.0** 45.0 x $N^{-0.20}$ 9.8
2007 and later	15.0 ≤ x < 20.0	low ≤ x < 3,300	Tier 2	0.5	0.5	0.5	0.001	5.0	8.7*	
2007 and later	15.0 ≤ x < 20.0	3,300 ≤ x ≤ high	Tier 2	0.5	0.5	0.5	0.001	5.0	9.8*	
2007 and later	20.0 ≤ x < 25.0	low ≤ x < high	Tier 2	0.5	0.5	0.5	0.001	5.0	9.8*	
2007 and later	25.0 ≤ x < 30.0	low ≤ x < high	Tier 2	0.5	0.5	0.5	0.001	5.0	11*	
2007 and later	x ≥ 30	low ≤ x < high	N/A	0.15	0.15	0.15	0.001	11.4	1.3	1.6

*Combined limit for VOC and NO_X

** 17.0 g/kW-hr when maximum test speed is less than 130 rpm
45.0 x $N^{-0.20}$ when maximum test speed is 130 rpm ≤ x < 2000 rpm, where N is the maximum speed test of the engine in revolutions per minute
9.8 g/kW-hr when the maximum test speed is 2000 rpm or more

Stationary Spark Ignition Internal Combustion Engines (SI ICE)										
Engine Year	**Generator Size (kW)**	**Type of Engine****	**Emission Limits (g/kW-hr) PM**	**PM-10**	**PM 2.5**	**SO_2**	**CO**	**VOC**	**NO_X**
2004-2006	low ≤ x < high	Rich-Burn that use LPG							
		SS Cert. and production-line testing	0.015	0.015	0.015	0.001	50.0	4.0*	
		SS In-use testing	0.015	0.015	0.015	0.001	50.0	5.4*	
2007 and later	low ≤ x < high	Rich-Burn that use LPG							
		SS Testing	0.015	0.015	0.015	0.001	4.4	2.7*	

2007 and later	low ≤ x < high	Rich-Burn that use LPG Field Testing	0.015	0.015	0.015	0.001	6.5	3.8*	
Pre 1/1/2009	low ≤ x < high	2-Stroke Lean-Burn	0.015	0.059	0.059	0.001	0.60	0.19	4.9
		4-Stroke Lean-Burn	0.015	0.0001	0.0001	0.001	0.49	0.18	6.3
		4-Stroke Rich-Burn	0.015	0.015	0.015	0.001	5.75	0.05	3.4
1/1/2009 and later	low ≤ x < high	N/A	0.015	0.015	0.015	0.001	5.36	1.34	2.68

*Combined limit for VOC and NO_X
**SS = Steady State

8. **Process Emission Limits** – Combined facility wide emissions from the operation of the emergency generation sources shall not exceed the limits specified below:

Pollutant	Emissions (tons/yr)
PM	24.5
PM-10	14.5
PM 2.5	9.5
NO_X	39.5
SO_2	39.5
CO	99.5
VOC	39.5

9. **Visible Emission Limit** - Visible emissions from each emergency generator source shall not exceed 10 percent opacity except during one six-minute period in any one hour in which visible emissions shall not exceed 20 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.

Records:

10. **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 annual hours of operation for each emergency generator source, 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. Records when each emergency generator source is used for an ISO-declared emergency, including, but not limited to, the date, cause of the emergency, the ISO-declared emergency notification, and the hours of operation.

c. Records when each emergency generator source is used for an emergency that is not an ISO-declared emergency, including, but not limited to, the date, cause of the emergency, and the hours of operation.

d. All fuel supplier certifications.

e. Engine information including make, model, serial number, model year, maximum engine power, and engine displacement for each emergency generator source.

f. Written manufacturer specifications or written standard operating procedures prepared by the permittee for each emergency generator source.

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.

Testing Requirements:

11. **Emissions Testing** - Each emergency generator source shall be constructed/modified/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.

Notifications:

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

    a. The actual date on which construction/modification/reconstruction of each emergency generator source 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 emergency generator source within 15 days after such date.

General Requirements:

13. **Permit Invalidation** – This general permit to construct, install, reconstruct, modify, or operate each emergency generation source shall become invalid, unless an extension is granted by the DEQ, if:

    a. A program of continuous construction, reconstruction, or modification 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, reconstruction, or modification 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.

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

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

d. Fails to comply with the conditions of this general permit;

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

f. 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

g. 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.

15. **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.

16. **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.

17. **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.

18. **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.

19. **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.

20. **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.

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

Draft 2 5-19-10