



DEPARTMENT ORDER

**Portland Water District
Cumberland County
Standish, Maine
A-559-71-H-A**

**Departmental
Findings of Fact and Order
Air Emission License
Amendment #1**

FINDINGS OF FACT

After review of the air emission license amendment application, staff investigation reports, and other documents in the applicant's file in the Bureau of Air Quality, pursuant to 38 Maine Revised Statutes (M.R.S.) § 344 and § 590, the Maine Department of Environmental Protection (Department) finds the following facts:

I. REGISTRATION

A. Introduction

Portland Water District (PWD) was issued Air Emission License A-559-71-G-R/M on April 14, 2014, for the operation of emission sources associated with their water treatment facility.

PWD has requested an amendment to their license in order to convert one of their emergency generators (Generator #1) to non-emergency use.

This amendment will also update the facility's visible emission requirements.

The equipment addressed in this license amendment is located at 2 White Rock Road in Standish, Maine.

B. Emission Equipment

The following equipment is addressed in this air emission license amendment:

Stationary Engines

| Equipment | Max. Input Capacity (MMBtu/hr) | Rated Output Capacity (HP) | Fuel Type, % sulfur | Firing Rate (gal/hr) | Date of Manuf. |
|------------------|---------------------------------------|-----------------------------------|----------------------------|-----------------------------|-----------------------|
| Generator #1 | 10.1 | 1,586 | distillate fuel, 0.0015% | 74 | 1992 |

C. Definitions

Distillate Fuel means the following:

- Fuel oil that complies with the specifications for fuel oil numbers 1 or 2, as defined by the American Society for Testing and Materials (ASTM) in ASTM D396;
- Diesel fuel oil numbers 1 or 2, as defined in ASTM D975;
- Kerosene, as defined in ASTM D3699;
- Biodiesel, as defined in ASTM D6751; or
- Biodiesel blends, as defined in ASTM D7467.

D. Application Classification

All rules, regulations, or statutes referenced in this air emission license refer to the amended version in effect as of the date this license was issued.

The modification of a minor source is considered a major or minor modification based on whether or not expected emission increases exceed the “Significant Emission” levels as defined in the Department’s *Definitions Regulation*, 06-096 Code of Maine Rules (C.M.R.) ch. 100. The emission increases are determined by subtracting the current licensed annual emissions preceding the modification from the maximum future licensed annual emissions, as follows:

| Pollutant | Current License (TPY) | Future License (TPY) | Net Change (TPY) | Significant Emission Levels |
|------------------|------------------------------|-----------------------------|-------------------------|------------------------------------|
| PM | 0.1 | 0.4 | +0.3 | 100 |
| PM ₁₀ | 0.1 | 0.4 | +0.3 | 100 |
| SO ₂ | – | – | – | 100 |
| NO _x | 3.2 | 9.7 | +6.5 | 100 |
| CO | 0.9 | 1.0 | +0.1 | 100 |
| VOC | 0.1 | 0.3 | +0.2 | 50 |

This modification is determined to be a minor modification and has been processed as such.

E. Facility Classification

With the operating hours restrictions on the generators, the facility is licensed as follows:

- As a synthetic minor source of air emissions, because PWD is subject to license restrictions that keep facility emissions below major source thresholds for criteria pollutants; and
- As an area source of hazardous air pollutants (HAP), because the licensed emissions are below the major source thresholds for HAP.

II. BEST PRACTICAL TREATMENT (BPT)

A. Introduction

In order to receive a license, the applicant must control emissions from each unit to a level considered by the Department to represent Best Practical Treatment (BPT), as defined in *Definitions Regulation*, 06-096 C.M.R. ch. 100. Separate control requirement categories exist for new and existing equipment.

BPT for new sources and modifications requires a demonstration that emissions are receiving Best Available Control Technology (BACT), as defined in *Definitions Regulation*, 06-096 C.M.R. ch. 100. BACT is a top-down approach to selecting air emission controls considering economic, environmental, and energy impacts.

B. Visible Emissions

Since PWD's previous license, *Visible Emissions Regulation*, 06-096 C.M.R. ch. 101, has been revised. This license amendment updates the visible emission requirements for the facility based on the current rule.

C. Generator #1

PWD operates two generators for emergency back-up power. The facility has proposed converting one of the generators (Generator #1) to a non-emergency unit.

Generator #1 is subject to *National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*, 40 C.F.R. Part 63, Subpart ZZZZ. PWD proposes to use this generator for demand response purposes. However, on May 1, 2015, the U.S. Court of Appeals issued a decision specifically vacating § 63.6640(f)(2), which had allowed for limited operation for emergency demand response purposes. To participate in a demand response program, Generator #1 must be reclassified as a non-emergency engine.

To comply with the non-emergency requirements of 40 C.F.R. Part 63, Subpart ZZZZ, PWD has proposed installing on the generator an oxidation catalyst designed to achieve a 70%+ reduction in carbon monoxide (CO) emissions. The system will be equipped with pre- and post-catalyst test ports for emissions testing as well as a continuous parameter monitoring system (CPMS).

PWD will also install either a closed crankcase ventilation system that prevents crankcase emissions to the atmosphere or an open crankcase filtration emission control system that reduces emissions from the crankcase by filtering the exhaust stream to remove oil mist, particulates, and metals.

PWD has proposed an operating hours restriction of 500 hours/year for Generator #1.

1. BACT Findings

a. Particulate Matter (PM and PM₁₀)

PM emissions from new distillate-fired engines of this size are generally controlled through engine design and the use of Diesel Particle Filters (DPF). As an existing generator that was manufactured in 1992, modifications to the engine design are not possible. Although this generator is being permitted as non-emergency, its main purpose will be for emergency backup and demand response. Both of these situations are expected to happen infrequently. The limited licensed operating hours makes the use of a DPF or any other add-on controls for PM economically infeasible.

BACT for PM/PM₁₀ is determined to be the emission limits in the table below and compliance with 40 C.F.R. Part 63, Subpart ZZZZ.

b. Sulfur Dioxide (SO₂)

Generator #1 is being licensed as a non-emergency generator with a licensed annual operating limit. This unit will fire ultra-low sulfur distillate fuel having a maximum sulfur content of 0.0015% by weight. The limited annual operating hours resulting from the licensed fuel limit reduce the generator's potential for generating SO₂ emissions, making the use of wet scrubbers or other additional SO₂ add-on control methods economically infeasible.

BACT for SO₂ is determined to be firing of distillate fuel with a sulfur content not to exceed 0.0015% by weight, the emission limits in the table below, and compliance with 40 C.F.R. Part 63, Subpart ZZZZ.

c. Nitrogen Oxides (NO_x)

Potentially available control options for reducing emissions of NO_x from distillate fuel-fired generators include selective catalytic reduction (SCR) and non-selective catalytic reduction (NSCR).

SCR and NSCR are both post-combustion NO_x reduction technologies. SCR uses ammonia to react with NO_x in the gas stream in the presence of a base metal catalyst to form nitrogen and water. The base metal catalyst material for SCR is selected to achieve optimal removal efficiency and is based on the expected temperature range of the exhaust gases emitted from the engine. SCR becomes significantly less effective if it is not operated within the designed temperature range and can result in higher ammonia usage and slip. NSCR uses a catalyst to convert CO, NO_x, and hydrocarbons into carbon dioxide, nitrogen, and water without the use of an additional reagent. NSCR catalyst efficiency is dependent on the oxygen (O₂) level

in the exhaust gas and requires precise air-to-fuel control to maintain high NO_x reduction effectiveness without increasing hydrocarbon emissions. The temperature of the exhaust gas also significantly affects the performance of NSCR systems and is influenced by ambient operating conditions, engine loading, and engine speed.

SCR and NSCR are best suited for applications where the engines are operated within tightly controlled parameters, such as base loading. The infrequent operation and low runtime of Generator #1 will result in inconsistent operating patterns involving multiple startup and cooldown cycles of the engine at varying speed and load conditions. The low annual runtime of Generator #1 will also limit its potential to generate NO_x emissions, thus minimizing the impact that SCR or NSCR would have on potential emissions from Generator #1. The inconsistent nature of the need for Generator #1 to run, coupled with the diminished effect that SCR or NSCR would have on the already limited emissions from Generator #1 renders these control options both technically and economically infeasible.

BACT for NO_x is determined to be the emission limits in the table below and compliance with 40 C.F.R. Part 63, Subpart ZZZZ.

d. Carbon Monoxide (CO)

PWD proposes to use an oxidation catalyst and associated ancillary equipment on Generator #1 to reduce CO emissions to 23 ppmvd at 15% O₂ or reduce CO emissions from the engine by a minimum of 70%, pursuant to 40 C.F.R. Part 63, Subpart ZZZZ, Table 2(d), Row 3.

BACT for CO is determined to be the emission limits in the table below and installation and operation of an oxidation catalyst in accordance with the requirements of 40 C.F.R. Part 63, Subpart ZZZZ.

e. Volatile Organic Compounds (VOC)

VOC emissions from distillate-fired engines are the result of incomplete combustion caused by conditions such as insufficient residence time or limited oxygen availability. VOC emissions from limited use, distillate fuel-fired engines are generally controlled through proper operation and maintenance. The proposed oxidation catalyst being installed for CO emissions control will also reduce VOC emissions from this engine.

BACT for VOC is determined to be the emission limits in the table below and installation and operation of an oxidation catalyst in accordance with the requirements of 40 C.F.R. Part 63, Subpart ZZZZ.

2. Emission Limits

The BACT emission limits for Generator #1 are based on the following:

- PM/PM₁₀ – 0.12 lb/MMBtu from 06-096 C.M.R. ch. 103
- SO₂ – combustion of distillate fuel with a maximum sulfur content not to exceed 15 ppm (0.0015% sulfur by weight)
- NO_x – 3.2 lb/MMBtu from AP-42 dated 10/96
- CO – 0.255 lb/MMBtu based on 70% control of uncontrolled emission rates from AP-42 dated 10/96
- VOC – 0.09 lb/MMBtu from AP-42 dated 10/96
- Visible Emissions – 06-096 C.M.R. ch. 101

The BACT emission limits for Generator #1 are the following:

| Unit | Pollutant | lb/MMBtu |
|--------------|-----------|----------|
| Generator #1 | PM | 0.12 |

| Unit | PM (lb/hr) | PM ₁₀ (lb/hr) | SO ₂ (lb/hr) | NO _x (lb/hr) | CO (lb/hr) | VOC (lb/hr) |
|--------------|------------|--------------------------|-------------------------|-------------------------|------------|-------------|
| Generator #1 | 1.21 | 1.21 | 0.02 | 32.32 | 2.58 | 0.91 |

Visible emissions from Generator #1 shall not exceed 20% opacity on a six-minute block average basis except for periods of startup during which time PWD may comply with the following work practice standards in lieu of the numerical visible emissions standard.

- a. PWD shall maintain a log (written or electronic) of the date, time, and duration of all generator startups.
- b. Generator #1 shall be operated in accordance with the manufacturer's emission-related operating instructions.
- c. PWD shall minimize the engine's time spent at idle during startup and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations shall apply.
- d. Generator #1, including any associated air pollution control equipment, shall be operated at all times in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Department that may include, but is not limited to, monitoring

results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the unit.

3. National Emission Standards for Hazardous Air Pollutants (NESHAP):
 40 C.F.R. Part 63, Subpart ZZZZ

National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines, 40 C.F.R. Part 63, Subpart ZZZZ is applicable to Generator #1. This unit is considered an existing, non-emergency stationary reciprocating internal combustion engines at an area HAP source and is not subject to New Source Performance Standards regulations. EPA’s August 9, 2010 memo (*Guidance Regarding Definition of Residential, Commercial, and Institutional Emergency Stationary RICE in the NESHAP for Stationary RICE*) specifically does not exempt these units from the federal requirements. [40 C.F.R. § 63.6585]

a. Operation Requirements

| | Operating Limitations |
|---|---|
| Non-Emergency, non-black start CI stationary RICE >500 HP | <ul style="list-style-type: none"> - Limit concentration of CO in the exhaust to 23 ppmvd at 15% O₂ or reduce CO emissions by 70% or more (Table 2d); - Minimize the engine’s time spent at idle and minimize the engine’s startup time at startup to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations apply (Table 2d); - Maintain the catalyst so that the pressure drop across the catalyst does not change by more than 2 inches of water from the pressure drop across the catalyst that was measured during the initial performance test (Table 2b); and - Maintain the temperature of the exhaust so that the catalyst inlet temperature is 450°F – 1350°F. (Table 2b) |

b. Crankcase Filtration

PWD shall operate on Generator #1 either a closed crankcase ventilation system that prevents crankcase emissions from being emitted to the atmosphere or an open crankcase filtration emission control system that reduces emissions from the crankcase by filtering the exhaust stream to remove oil mist, particulates, and metals. [40 C.F.R. § 63.6625(g)]

c. Continuous Parameter Monitoring System (CPMS)

- (1) PWD shall install, operate, and maintain a CPMS on Generator #1.
- (2) PWD shall monitor the catalyst inlet temperature and reduce this data to 4-hour rolling averages to demonstrate compliance with the limitations on the catalyst inlet temperature range.

- (3) For any month in which Generator #1 operated, PWD shall monitor the pressure drop across the catalyst once per month to demonstrate compliance with the operating limit established during the last performance test.
- (4) PWD shall prepare a site-specific monitoring plan that addresses the requirements outlined in 40 C.F.R. § 63.6625(b)(1).
- (5) The CPMS shall be continuously operated in accordance with the site-specific monitoring plan at all times that Generator #1 is operating except for monitor malfunctions, associated repairs, required performance evaluations, and required quality assurance or control activities.
- (6) The CPMS shall collect data at least once every 15 minutes.
- (7) The minimum tolerance for a CPMS measuring temperature is 5°F (2.8°C) or 1% of the measurement range, whichever is larger.
- (8) CPMS audit procedures shall be performed at least annually.
[40 C.F.R. § 63.6625(b), § 63.6635, and Table 6]

d. Performance Tests

- (1) PWD shall conduct an initial performance test on Generator #1 in accordance with 40 C.F.R. Part 63, Subpart ZZZZ, Table 4. [40 C.F.R. § 63.6612(a)]
- (2) PWD shall conduct performance tests on Generator #1 every 8,760 hours of operation or 3 years, whichever comes first. (Due to the limit on hours of operation, the 3 years will always come first.)
[40 C.F.R. § 63.6640(a), Table 3, and Table 6]
- (3) PWD shall conduct three separate test runs for each performance test. Each test run must be at least 1 hour, unless otherwise specified.
[40 C.F.R. § 63.6620(d)]
- (4) During a performance test the facility must establish the pressure drop across the catalyst to be used to demonstrate compliance per the CPMS.
[40 C.F.R. § 63.6630(b)]
- (5) If the facility changes the catalyst, PWD shall reestablish the values of the operating parameters measured during the performance test. In order to reestablish the operating parameters, the facility shall conduct a performance test to demonstrate that the required emission limitation is being met.
[40 C.F.R. § 63.6640(b)]

e. Ultra-Low Sulfur Diesel Fuel Requirement

The diesel fuel fired in Generator #1 shall not exceed 15 ppm sulfur (0.0015% sulfur) by weight. [40 C.F.R. § 63.6604(a)]

f. General Requirement to Minimize Emissions

At all times PWD shall operate and maintain Generator #1, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions.
[40 C.F.R. § 63.6605(b)]

g. Reporting

PWD shall submit to the Department and EPA all reports required by Subpart ZZZZ including, but not limited to, the following:

- (1) Notification of Intent to conduct a performance test at least 60 days before a performance test is scheduled to begin. [40 C.F.R. § 63.6645(g)]
- (2) Semiannual Compliance Reports shall cover the period between January 1 and June 30 or July 1 through December 31 of each year and shall be postmarked by July 31 or January 31 as applicable. The Semiannual Compliance Report shall include the following information:
 - (i) Company name and address;
 - (ii) Statement by a responsible official, with the official's name, title, and signature, certifying the accuracy of the content of the report;
 - (iii) Date of report and beginning and ending dates of the reporting period;
 - (iv) If there was a malfunction during the reporting period, the compliance report must include the number, duration, and a brief description for each type of malfunction which occurred during the reporting period and which caused or may have caused any applicable emission limitation to be exceeded. The report must also include a description of actions taken by an owner or operator during a malfunction of an affected source to minimize emissions in accordance with § 63.6605(b), including actions taken to correct a malfunction.;
 - (v) If there are no deviations from any applicable emission or operating limitations, a statement that there were no deviations from the emission or operating limitations during the reporting period;
 - (vi) If there were no periods during which the continuous monitoring system (CMS), i.e. CPMS, was out-of-control, as specified in § 63.8(c)(7), a statement that there were no periods during which the CMS was out-of-control during the reporting period; and
 - (vii) If there were periods of deviation from an emission or operating limitation occurring where the CPMS is used to comply with the emission and operating limitation, the Semiannual Compliance Report shall also include the following information:
 1. The date and time that each malfunction started and stopped;
 2. The date, time, and duration that each CMS was inoperative, except for zero (low-level) and high-level checks;
 3. The date, time, and duration that each CMS was out-of-control, including the information in § 63.8(c)(8);
 4. The date and time that each deviation started and stopped, and whether each deviation occurred during a period of malfunction or during another period;
 5. A summary of the total duration of the deviation during the reporting period, and the total duration as a percent of the total source operating time during that reporting period;

6. A breakdown of the total duration of the deviations during the reporting period into those that are due to control equipment problems, process problems, or other known causes, and other unknown causes;
7. A summary of the total duration of CMS downtime during the reporting period, and the total duration of CMS downtime as a percent of the total operating time of the generator during that reporting period;
8. An identification of each parameter and pollutant that was monitored;
9. A brief description of stationary RICE (Generators #1);
10. A brief description of the CMS;
11. The date of the last CMS certification or audit; and
12. A description of any changes in CMS, processes, or controls since the last reporting period.

[40 C.F.R. § 63.6650 and Table 7]

h. Record Keeping

PWD shall keep all records required by Subpart ZZZZ including, but not limited to, the following:

- (1) A copy of each notification and report that was submitted to comply with Subpart ZZZZ, including all supporting documentation;
- (2) Records of the occurrence and duration of each malfunction of the engine, pollution control equipment, or monitoring equipment;
- (3) Records of the occurrence and duration of each deviation;
- (4) Records of performance tests and performance evaluations;
- (5) Records of actions taken during periods of malfunction to minimize emissions, including corrective actions taken to restore normal operation;
- (6) Monitoring data from the CPMS; and
- (7) Records of maintenance conducted on Generators #1 and associated control equipment to demonstrate the equipment was operated and maintained according to the maintenance plan.

[40 C.F.R. § 63.6655]

D. Annual Emissions

PWD shall be restricted to the following annual emissions, based on a calendar year total. The tons per year limits were calculated based on the following:

- Operating Generator #1 for 500 hrs/yr; and
- Operating Generator #2 for 100 hrs/yr.

Total Licensed Annual Emissions for the Facility

Tons/year

(used to calculate the annual license fee)

| | PM | PM ₁₀ | SO ₂ | NO _x | CO | VOC |
|------------------|------------|------------------|-----------------|-----------------|------------|------------|
| Generator #1 | 0.3 | 0.3 | – | 8.1 | 0.6 | 0.2 |
| Generator #2 | 0.1 | 0.1 | – | 1.6 | 0.4 | 0.1 |
| Total TPY | 0.4 | 0.4 | – | 9.7 | 1.0 | 0.3 |

| Pollutant | Tons/year |
|------------|-----------|
| Single HAP | 9.9 |
| Total HAP | 24.9 |

III. AMBIENT AIR QUALITY ANALYSIS

The level of ambient air quality impact modeling required for a minor source is determined by the Department on a case-by case basis. In accordance with 06-096 C.M.R. ch. 115, an ambient air quality impact analysis is not required for a minor source if the total licensed annual emissions of any pollutant released do not exceed the following levels and there are no extenuating circumstances:

| Pollutant | Tons/Year |
|------------------|-----------|
| PM ₁₀ | 25 |
| SO ₂ | 50 |
| NO _x | 50 |
| CO | 250 |

The total licensed annual emissions for the facility are below the emission levels contained in the table above and there are no extenuating circumstances; therefore, an ambient air quality impact analysis is not required as part of this license amendment.

ORDER

Based on the above Findings and subject to conditions listed below, the Department concludes that the emissions from this source:

- will receive Best Practical Treatment,
- will not violate applicable emission standards, and
- will not violate applicable ambient air quality standards in conjunction with emissions from other sources.

The Department hereby grants Air Emission License Amendment A-559-71-H-A subject to the conditions found in Air Emission License A-559-71-G-R/M and the following conditions.

Severability. The invalidity or unenforceability of any provision of this License Amendment or part thereof shall not affect the remainder of the provision or any other provisions. This License Amendment shall be construed and enforced in all respects as if such invalid or unenforceable provision or part thereof had been omitted.

SPECIFIC CONDITIONS

The following shall replace Condition (16) of Air Emission License A-559-71-G-R/M:

(16) Generator #2 (Emergency Engine)

- A. Generator #2 shall be limited to 100 hours of operation per calendar year, excluding operating hours during emergency situations. [06-096 C.M.R. ch. 115, BPT]
- B. The fuel sulfur content for Generator #2 shall be limited to 0.0015% sulfur by weight. Compliance shall be demonstrated by fuel delivery receipts from the supplier, fuel supplier certification, certificate of analysis, or testing of the tank containing the fuel to be fired. [06-096 C.M.R. ch. 115, BPT]
- C. Emissions shall not exceed the following:

| Unit | Pollutant | lb/MMBtu | Origin and Authority |
|--------------|-----------|----------|---------------------------------------|
| Generator #2 | PM | 0.12 | 06-096 C.M.R. ch. 103, § (2)(B)(1)(a) |

- D. Emissions shall not exceed the following [06-096 C.M.R. ch. 115, BPT]:

| Unit | PM (lb/hr) | PM ₁₀ (lb/hr) | SO ₂ (lb/hr) | NO _x (lb/hr) | CO (lb/hr) | VOC (lb/hr) |
|--------------|------------|--------------------------|-------------------------|-------------------------|------------|-------------|
| Generator #2 | 1.21 | 1.21 | 0.02 | 32.32 | 8.59 | 0.91 |

E. Visible Emissions

Visible emissions from Generator #2 shall not exceed 20% opacity on a six-minute block average basis except for periods of startup during which time PWD may comply with the following work practice standards in lieu of the numerical visible emissions standard. [06-096 C.M.R. ch. 115, BPT]

1. PWD shall maintain a log (written or electronic) of the date, time, and duration of all generator startups.
2. Generator #2 shall be operated in accordance with the manufacturer's emission-related operating instructions.
3. PWD shall minimize the engine's time spent at idle during startup and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations shall apply.
4. Generator #2, including any associated air pollution control equipment, shall be operated at all times in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Department that may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the unit.

F. Generator #2 shall meet the applicable requirements of 40 C.F.R. Part 63, Subpart ZZZZ, including the following:
[incorporated under 06-096 C.M.R. ch. 115, BPT]

1. PWD shall meet the following operational limitations for Generator #2:
 - a. Change the oil and filter every 500 hours of operation or annually, whichever comes first;
 - b. Inspect the air cleaner every 1,000 hours of operation or annually, whichever comes first, and replace as necessary; and
 - b. Inspect the hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.

Records shall be maintained documenting compliance with the operational limitations.

[40 C.F.R. § 63.6603(a) and Table 2(d); and 06-096 C.M.R. ch. 115]

2. Oil Analysis Program Option

PWD has the option of utilizing an oil analysis program which complies with the requirements of § 63.6625(i) in order to extend the specified oil change requirement. If this option is used, PWD must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil changes for each engine. The analysis program must be part of the maintenance plan for each engine. [40 C.F.R. § 63.6625(i)]

3. Non-Resettable Hour Meter

A non-resettable hour meter shall be installed and operated on Generator #2. [40 C.F.R. § 63.6625(f)]

4. Maintenance, Testing, and Non-Emergency Operating Situations

a. As an emergency engine, Generator #2 shall be limited to 100 hours/year for maintenance checks and readiness testing. Up to 50 hours/year of the 100 hours/year may be used in non-emergency situations (this does not include peak shaving, demand response, or to generate income for a facility by providing power to an electric grid or otherwise to supply power as part of a financial arrangement with another entity). These limits are based on a calendar year. Compliance shall be demonstrated by records (electronic or written logs) of all engine operating hours. [40 C.F.R. § 63.6640(f) and 06-096 C.M.R. ch. 115]

b. PWD shall keep records that include maintenance conducted on Generator #2 and the hours of operation of the engine recorded through the non-resettable hour meter. Documentation shall include the number of hours the unit operated for emergency purposes, the number of hours the unit operated for non-emergency purposes, and the reason the engine was in operation during each time. [40 C.F.R. §§ 63.6655(e) and (f)]

5. Operation and Maintenance

Generator #2 shall be operated and maintained according to the manufacturer's emission-related written instructions, or PWD shall develop a maintenance plan which provides to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions. [40 C.F.R. § 63.6625(e)]

6. Startup Idle and Startup Time Minimization

During periods of startup, the facility must minimize Generator #2's time spent at idle and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes.

[40 C.F.R. § 63.6625(h) & 40 C.F.R. Part 63, Subpart ZZZZ Table 2d]

The following shall Replace Condition (18) of Air Emission License A-559-71-G-R/M:

(18) **Fugitive Emissions**

Visible emissions from a fugitive emission source (including stockpiles and roadways) shall not exceed 20% opacity on a five-minute block average basis.
[06-096 C.M.R. ch. 101]

The following shall Replace Condition (19) of Air Emission License A-559-71-G-R/M:

(19) **General Process Sources**

Visible emissions from any general process source shall not exceed 20% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 101]

The following is a New Condition:

(21) **Generator #1 (Non-Emergency Engine)**

A. Generator #1 shall be limited to 500 hours of operation per calendar year.
[06-096 C.M.R. ch. 115, BACT]

B. The fuel sulfur content for Generator #1 shall be limited to 0.0015% sulfur by weight. Compliance shall be demonstrated by fuel records from the supplier documenting the type of fuel delivered and the sulfur content of the fuel.
[06-096 C.M.R. ch. 115, BACT]

C. Emissions shall not exceed the following [06-096 C.M.R. ch. 115, BACT]

| Unit | Pollutant | lb/MMBtu | Origin and Authority |
|--------------|-----------|----------|---------------------------------------|
| Generator #1 | PM | 0.12 | 06-096 C.M.R. ch. 103, § (2)(B)(1)(a) |

D. Emissions shall not exceed the following [06-096 C.M.R. ch. 115, BACT]:

| Unit | PM (lb/hr) | PM ₁₀ (lb/hr) | SO ₂ (lb/hr) | NO _x (lb/hr) | CO (lb/hr) | VOC (lb/hr) |
|--------------|---------------|-----------------------------|----------------------------|----------------------------|---------------|----------------|
| Generator #1 | 1.21 | 1.21 | 0.02 | 32.32 | 2.58 | 0.91 |

E. Visible Emissions

Visible emissions from Generator #1 shall not exceed 20% opacity on a six-minute block average basis except for periods of startup during which time PWD may comply with the following work practice standards in lieu of the numerical visible emissions standard. [06-096 C.M.R. ch. 101]

1. PWD shall maintain a log (written or electronic) of the date, time, and duration of all generator startups.
2. Generator #1 shall be operated in accordance with the manufacturer's emission-related operating instructions.
3. PWD shall minimize the engine's time spent at idle during startup and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations shall apply.
4. Generator #1, including any associated air pollution control equipment, shall be operated at all times in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Department that may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the unit.

F. Generator #1 shall meet the applicable requirements of 40 C.F.R. Part 63, Subpart ZZZZ, including the following:

1. PWD shall meet the following operational limitations for Generator #1:
 - a. Limit the concentration of CO in the exhaust to 23 ppmvd at 15% O₂ or reduce CO emissions by 70% or more;
 - b. Minimize the engine's time spent at idle and minimize the engine's startup time at startup to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations apply;
 - c. Maintain the catalyst so that the pressure drop across the catalyst does not change by more than 2 inches of water from the pressure drop across the catalyst that was measured during the last performance test; and
 - d. Maintain the temperature of the exhaust so that the catalyst inlet temperature is 450°F – 1350°F.

[40 C.F.R. § 63.6603(a), Table 2(b), Table 2(d) and 06-096 C.M.R. ch. 115, BPT]

2. Crankcase Filtration

PWD shall operate on Generator #1 either a closed crankcase ventilation system that prevents crankcase emissions from being emitted to the atmosphere or an open crankcase filtration emission control system that reduces emissions from the crankcase by filtering the exhaust stream to remove oil mist, particulates, and metals. [40 C.F.R. § 63.6625(g)(2) and 06-096 C.M.R. ch. 115, BPT]

3. Continuous Parameter Monitoring System (CPMS)

- a. PWD shall install, operate, and maintain a CPMS on Generator #1.
- b. PWD shall monitor the catalyst inlet temperature and reduce this data to 4-hour rolling averages to demonstrate compliance with the limitations on the catalyst inlet temperature range.
- c. For any month in which the generator operated, PWD shall monitor the pressure drop across the catalyst once per month to demonstrate compliance with the operating limit established during the last performance test.
- d. PWD shall prepare a site-specific monitoring plan that addresses the requirements outlined in 40 C.F.R. § 63.6625(b)(1).
- e. The CPMS shall be continuously operated in accordance with the site-specific monitoring plan at all times that Generators #1 are operating except for monitor malfunctions, associated repairs, required performance evaluations, and required quality assurance or control activities.
- f. The CPMS shall collect data at least once every 15 minutes.
- g. The minimum tolerance for a CPMS measuring temperature is 5°F (2.8°C) or 1% of the measurement range, whichever is larger.
- h. CPMS audit procedures shall be performed at least annually.
[40 C.F.R. § 63.6625(b), § 63.6635, Table 6, and 06-096 C.M.R. ch. 115, BPT]

4. Performance Tests

- a. PWD shall conduct an initial performance test on Generator #1 in accordance with 40 C.F.R. Part 63, Subpart ZZZZ, Table 4. [40 C.F.R. § 63.6612(a)]
- b. PWD shall perform performance tests every 8,760 hours of operation or 3 years, whichever comes first. (Due to the limit on hours of operation, the 3 years should always come first.) [40 C.F.R. § 63.6640(a), Table 3, and Table 6]
- c. PWD shall conduct three separate test runs for each performance test. Each test run must be at least 1 hour, unless otherwise specified. [40 C.F.R. § 63.6620(d)]
- d. During a performance test the facility must establish the pressure drop across the catalyst to be used to demonstrate compliance per the CPMS.
[40 C.F.R. § 63.6630(b)]
- e. If the facility changes the catalyst, PWD shall reestablish the values of the operating parameters measured during the performance test. In order to reestablish the operating parameters, the facility shall conduct a performance test to demonstrate that the required emission limitation is being met.
[40 C.F.R. § 63.6640(b)]
[06-096 C.M.R. ch. 115, BPT]

5. General Requirement to Minimize Emissions

At all times PWD shall operate and maintain Generator #1, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions.

[40 C.F.R. § 63.6605(b) and 06-096 C.M.R. ch. 115, BPT]

6. Reporting

PWD shall submit to the Department and EPA all reports required by Subpart ZZZZ including, but not limited to, the following [06-096 C.M.R. ch. 115, BPT]:

- a. Notification of Intent to conduct a performance test at least 60 days before the performance test is scheduled to begin. [40 C.F.R. § 63.6645(g)]
- b. Semiannual Compliance Reports shall cover the period between January 1 and June 30 or July 1 through December 31 of each year and shall be postmarked by July 31 or January 31 as applicable. The Semiannual Compliance Report shall include the following information:
 - (1) Company name and address;
 - (2) Statement by a responsible official, with the official's name, title, and signature, certifying the accuracy of the content of the report;
 - (3) Date of report and beginning and ending dates of the reporting period;
 - (4) If there was a malfunction during the reporting period, the compliance report must include the number, duration, and a brief description for each type of malfunction which occurred during the reporting period and which caused or may have caused any applicable emission limitation to be exceeded. The report must also include a description of actions taken by an owner or operator during a malfunction of an affected source to minimize emissions in accordance with §63.6605(b), including actions taken to correct a malfunction.;
 - (5) If there are no deviations from any applicable emission or operating limitations, a statement that there were no deviations from the emission or operating limitations during the reporting period;
 - (6) If there were no periods during which the continuous monitoring system (CMS), i.e. CPMS, was out-of-control, as specified in § 63.8(c)(7), a statement that there were no periods during which the CMS was out-of-control during the reporting period; and

- (7) If there were periods of deviation from an emission or operating limitation occurring where the CPMS is used to comply with the emission and operating limitation, the Semiannual Compliance Report shall also include the following information:
- (i) The date and time that each malfunction started and stopped;
 - (ii) The date, time, and duration that each CMS was inoperative, except for zero (low-level) and high-level checks;
 - (iii) The date, time, and duration that each CMS was out-of-control, including the information in § 63.8(c)(8);
 - (iv) The date and time that each deviation started and stopped, and whether each deviation occurred during a period of malfunction or during another period;
 - (v) A summary of the total duration of the deviation during the reporting period, and the total duration as a percent of the total source operating time during that reporting period;
 - (vi) A breakdown of the total duration of the deviations during the reporting period into those that are due to control equipment problems, process problems, or other known causes, and other unknown causes;
 - (vii) A summary of the total duration of CMS downtime during the reporting period, and the total duration of CMS downtime as a percent of the total operating time of Generator #1 during that reporting period;
 - (viii) An identification of each parameter and pollutant that was monitored;
 - (ix) A brief description of stationary RICE (Generator #1);
 - (x) A brief description of the CMS;
 - (xi) The date of the last CMS certification or audit; and
 - (xii) A description of any changes in CMS, processes, or controls since the last reporting period.

[40 C.F.R. § 63.6650 and Table 7]

7. Record Keeping

PWD shall keep all records required by Subpart ZZZZ including, but not limited to, the following:

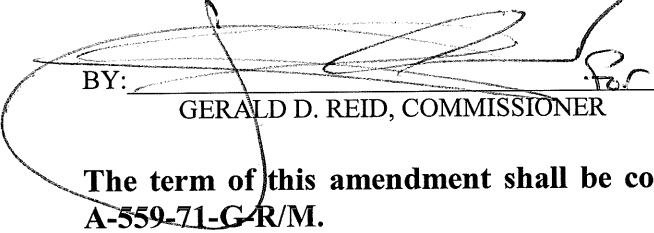
- a. A copy of each notification and report that was submitted to comply with Subpart ZZZZ, including all supporting documentation;
- b. Records of the occurrence and duration of each malfunction of the engine, pollution control equipment, or monitoring equipment;
- c. Records of the occurrence and duration of each deviation;
- d. Records of performance tests and performance evaluations;
- e. Records of actions taken during periods of malfunction to minimize emissions, including corrective actions taken to restore normal operation;
- f. Monitoring data from the CPMS; and
- g. Records of maintenance conducted on Generator #1 and control equipment to demonstrate the equipment was operated and maintained according to the maintenance plan.

[40 C.F.R. § 63.6655 and 06-096 C.M.R. ch. 115, BPT]

DONE AND DATED IN AUGUSTA, MAINE THIS 10th DAY OF February, 2020.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY:


GERALD D. REID, COMMISSIONER

The term of this amendment shall be concurrent with the term of Air Emission License A-559-71-G-R/M.

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: 11/12/2019

Date of application acceptance: 11/12/2019

Date filed with the Board of Environmental Protection:

This Order prepared by Lynn Muzzey, Bureau of Air Quality.

