



DEPARTMENT ORDER

Scarborough School Department
Cumberland County
Scarborough, Maine
A-897-71-F-M

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

FINDINGS OF FACT

After review of the air emission license minor revision 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

Scarborough School Department (Scarborough) was issued Air Emission License A-897-71-E-R/A on March 9, 2015, for the operation of emission sources associated with their educational facility.

Scarborough has requested a minor revision to their license in order to reclassify their existing engine from an emergency to a non-emergency engine and increase the number of hours of operation for the engine.

The equipment addressed in this minor revision is located at located 11 Municipal Drive, Scarborough, Maine.

B. Emission Equipment

The following equipment is addressed in this air emission license minor revision:

Stationary Engines

Equipment	Max. Input Capacity (MMBtu/hr)	Fuel Type, % sulfur	Firing Rate (gal/hr)	Date of Manuf.	Date of Install.	Stack #
WS Caterpillar Generator	4.77	Distillate fuel, 0.0015% S	34.8	2013	2014	G2

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.

This amendment will not increase licensed emissions of any pollutant. Therefore, this amendment is determined to be a minor revision and has been processed as such.

E. Project Description

Scarborough operates two emergency generators. This licensing action affects the Wentworth School engine (WS Caterpillar Generator). Scarborough would like to enroll this engine into the ISO New England Emergency Demand Response program. To do so, Scarborough is proposing to reclassify this generator from emergency to non-emergency. The number of hours of operation shall be limited to 336 hours per year (based on operating the engine for 14 days).

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 existing emissions equipment means that method which controls or reduces emissions to the lowest possible level considering:

- the existing state of technology;
- the effectiveness of available alternatives for reducing emissions from the source being considered; and
- the economic feasibility for the type of establishment involved.

F. Wentworth School Caterpillar Generator

Scarborough operates a 750 horsepower, Tier 4 Interim certified, Caterpillar Model 500 generator at the Wentworth School. The generator is rated at 4.77 MMBtu/hour and fires distillate fuel. The generator was manufactured in 2013 and installed in 2014.

1. BPT Findings

The BPT emission limits for the generator are based on the following:

- PM/PM₁₀ - 0.0046 lb/MMBtu, manufacturer's guarantee
 - 0.12 lb/MMBtu, 06-096 C.M.R. ch. 103 (2)(B)(1)(a)
- SO₂ - combustion of distillate fuel with a maximum sulfur content not to exceed 15 ppm (0.0015% sulfur by weight)
- NO_x - 0.0926 lb/MMBtu, manufacturer's guarantee
- CO - 0.8099 lb/MMBtu, manufacturer's guarantee
- VOC - 0.0440 lb/MMBtu, manufacturer's guarantee
- Visible Emissions - 06-096 CMR 101

The emission limits for the generator are the following:

<u>Unit</u>	<u>Pollutant</u>	<u>lb/MMBtu</u>
WS Caterpillar Generator	PM	0.12

<u>Unit</u>	<u>PM</u> (lb/hr)	<u>PM₁₀</u> (lb/hr)	<u>SO₂</u> (lb/hr)	<u>NO_x</u> (lb/hr)	<u>CO</u> (lb/hr)	<u>VOC</u> (lb/hr)
WS Caterpillar Generator	0.02	0.02	0.01	0.44	3.86	0.21

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

- a. Maintain a log (written or electronic) of the date, time, and duration of all generator startups.
- b. Operate the generator in accordance with the manufacturer's emission-related operating instructions.
- c. 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. Operate the generator, including any associated air pollution control equipment, 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.

The WS Caterpillar Generator shall be limited to 336 hours per calendar year of operation for any reason, including startup and shutdown, testing, and both emergency and non-emergency use. Compliance shall be demonstrated by a written or electronic log of all generator operating hours. [06-096 C.M.R. ch. 115, BPT]

Non-Resettable Hour Meter Requirement

A non-resettable hour meter shall be installed and operated on the engine.
[06-096 C.M.R. ch. 115, BPT]

Recordkeeping

Scarborough shall keep records that include maintenance conducted on the engine and the hours of operation of the engine recorded through the non-resettable hour meter. Documentation shall include the number of hours the unit was operated.
[06-096 C.M.R. ch. 115, BPT]

2. 40 C.F.R. Part 60, Subpart III

Standards of Performance for Stationary Compression Ignition Internal Combustion Engines, 40 C.F.R. Part 60, Subpart III is applicable to the engine listed above since the unit was ordered after July 11, 2005 and manufactured after April 1, 2006.
[40 C.F.R. § 60.4200]

By meeting the requirements of 40 C.F.R. Part 60, Subpart III, the unit also meets the requirements found in the *National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*, 40 C.F.R. Part 63, Subpart ZZZZ. [40 C.F.R. § 63.6590(c)(1)]

A summary of the currently applicable federal 40 C.F.R. Part 60, Subpart III requirements is listed below.

a. Manufacturer Certification Requirement

The engine shall be certified by the manufacturer as meeting the emission standards for new nonroad compression ignition engines found in 40 C.F.R. § 60.4201.
[40 C.F.R. § 60.4204(b)]

b. Ultra-Low Sulfur Fuel Requirement

The diesel fuel fired in Generator #1 shall not exceed 15 ppm sulfur (0.0015% sulfur), except that any existing diesel fuel purchased (or otherwise obtained) prior to October 1, 2010, may be used until depleted. Compliance with the fuel sulfur content limit shall be based on fuel records from the supplier documenting the type of fuel delivered and the sulfur content of the fuel.
[40 C.F.R. §60.4207(b) and 06-096 C.M.R. ch. 115, BPT]

c. Operation and Maintenance Requirements

The engine shall be operated and maintained according to the manufacturer's emission-related written instructions or procedures developed by Scarborough that are approved by the engine manufacturer. Scarborough may only change those emission-related settings that are permitted by the manufacturer.

[40 C.F.R. § 60.4211(a)]

d. Initial Notification Requirement

No initial notification is required for certified non-emergency stationary engines less than or equal to 3,000 HP. [40 C.F.R. § 60.4214]

G. Annual Emissions Update

Although the annual hours of operation of the WS Caterpillar Generator are increased in this license amendment, because errors were corrected in previously calculated emissions totals, annual emissions totals for this facility do not increase in this amendment. Scarborough shall be restricted to the following annual emissions, based on a calendar year. The tons per year totals were calculated based on the following:

- an annual fuel limit of 30,000 gallons of distillate fuel and 35 million standard cubic feet of natural gas for the boilers;
- 100 hours per year of operation for the HS Caterpillar Emergency Generator; and
- 336 hours per year of operation for WS Caterpillar Generator.

Total Licensed Annual Emissions for the Facility

Tons per year

(used to calculate the annual license fee)

	<u>PM</u>	<u>PM₁₀</u>	<u>SO₂</u>	<u>NO_x</u>	<u>CO</u>	<u>VOC</u>
Boilers	1.1	1.1	1.1	2.4	1.6	0.1
*HS Caterpillar Generator	0.1	0.1	0.1	0.8	0.2	0.1
*WS Caterpillar Generator	0.1	0.1	0.1	0.1	0.7	0.1
Total TPY	1.3	1.3	1.3	3.3	2.5	0.3

* TPY values were corrected and updated from the most recent air emission license renewal.

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-897-71-F-M subject to the conditions found in Air Emission License A-897-71-E-R/A 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 Specific Condition (16) in A-897-71-E-R/A (3/9/2015):

(16) **WS Caterpillar Generator**

A. The WS Caterpillar Generator shall be limited to 336 hours per calendar year of operation for any reason, including startup and shutdown, testing, and both emergency and non-emergency use. A non-resettable hour meter shall be installed and operated on the generator. Compliance with the hour limit shall be demonstrated by a written or electronic log of all generator operating hours.

B. Emissions shall not exceed the following:

<u>Unit</u>	<u>Pollutant</u>	<u>lb/MMBtu</u>	<u>Origin and Authority</u>
WS Caterpillar Generator	PM	0.12	06-096 C.M.R. ch. 103(2)(B)(1)(a)

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

<u>Unit</u>	<u>PM</u> (lb/hr)	<u>PM₁₀</u> (lb/hr)	<u>SO₂</u> (lb/hr)	<u>NO_x</u> (lb/hr)	<u>CO</u> (lb/hr)	<u>VOC</u> (lb/hr)
WS Caterpillar Generator	0.02	0.02	0.01	0.44	3.86	0.21

D. Visible Emissions

Visible emissions from the WS Caterpillar Generator shall not exceed 20% opacity on a six-minute block average basis except for periods of startup during which time Scarborough may comply with the following work practice standards in lieu of the numerical visible emissions standard. [06-096 C.M.R. ch. 101, § 3(A)(4)]

1. Maintain a log (written or electronic) of the date, time, and duration of all generator startups.
2. Operate the generator in accordance with the manufacturer's emission-related operating instructions.
3. 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. Operate the generator including any associated air pollution control equipment, 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.

E. The WS Caterpillar Generator shall meet the applicable requirements of 40 C.F.R. Part 60, Subpart IIII, including the following:

1. Manufacturer Certification

The generator shall be certified by the manufacturer as meeting the emission standards for new non-road compression ignition engines found in § 60.4201. [40 C.F.R. § 60.4204(b)]

2. Ultra-Low Sulfur Fuel

The fuel fired in the generator shall not exceed 15 ppm sulfur (0.0015% sulfur). Compliance with the fuel sulfur content limit shall be based on fuel records from the supplier documenting the type of fuel delivered and the sulfur content of the fuel. [40 C.F.R. § 60.4207(b) and 06-096 C.M.R. ch. 115]

3. Operation and Maintenance

The generator shall be operated and maintained according to the manufacturer's emission-related written instructions or procedures developed by Scarborough that are approved by the engine manufacturer. Scarborough may only change those emission-related settings that are permitted by the manufacturer.
[40 C.F.R. § 60.4211(a)]

DONE AND DATED IN AUGUSTA, MAINE THIS 8th DAY OF JANUARY, 2021.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY:  for
MELANIE LOYZIM, ACTING COMMISSIONER

The term of this amendment shall be concurrent with the term of Air Emission License A-897-71-E-R/A (3/9/2015).

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: July 6, 2020

Date of application acceptance: July 8, 2020

Date filed with the Board of Environmental Protection:

This Order prepared by Lisa P. Higgins, Bureau of Air Quality.

