York Hospital
York County
York, Maine
A-468-71-I-A (SM)

Departmental
Findings of Fact and Order
Air Emission License
Amendment #2

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 Annotated (M.R.S.A.), §344 and §590, the Maine Department of Environmental Protection (Department) finds the following facts:

I. REGISTRATION

A. Introduction

York Hospital was issued Air Emission License A-468-71-G--R on March 12, 2012, for the operation of emission sources associated with their health care facility. The license was subsequently amended on July 22, 2014 (A-468-71-H-M).

York Hospital has requested an amendment to their license in order to install a new, 125 kW emergency generator at their facility located at 15 Hospital Drive, York, Maine.

B. Emission Equipment

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

Generator

Equipment	Rated Output Capacity kW	Max. Input Capacity (MMBtu/hr)	Firing Rate (gal/hr)	Fuel Type, % sulfur	Date of Manuf.	Date of Install.
Generator #4	125	1.37	10	Distillate Fuel, 0.0015% by weight	2016	2016

C. Definitions

Distillate Fuel. For the purposes of this license, *distillate fuel* means the following:

1. 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;
2. Diesel fuel oil numbers 1 or 2, as defined in ASTM D975;
3. Kerosene, as defined in ASTM D3699;
4. Biodiesel, as defined in ASTM D6751; or
5. Biodiesel blends, as defined in ASTM D7467.

D. Application Classification

A new emission unit at an existing minor source is considered a major 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 (CMR) 100 (as amended). The emission increases for a new emission unit are determined by the maximum future license annual emissions for the new emission unit, as follows:

Pollutant	Max. Future License (TPY)	Significant Emission Levels
PM	1.5	100
PM_{10}	1.5	100
SO_2	5.3	100
NO_x	10.3	100
CO	2.3	100
VOC	0.7	50
CO_2e	< 100,000	100,000

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 CMR 100 (as amended). 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 CMR 100 (as amended). BACT is a top-down approach to selecting air emission controls considering economic, environmental and energy impacts.

B. Generator #4

York Hospital has requested licensing for the addition a new emergency generator, Generator #4. The emergency generator is a generator set consisting of an engine and an electrical generator. Generator #4 has an engine rated at 1.37 MMBtu/hr which fires distillate fuel, and it was manufactured in 2016. The emergency generator will be used to provide backup power for its equipment branch and for chilled water units on the hospital's Strater Wing project.

1. BACT Findings

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

PM/PM_{10}	--	0.19 lb/MMBtu from 40 CFR §89.112 Table 1 as directed by 40 CFR §60.4205(b)
SO_2	--	0.0015 lb/MMBtu based on the combustion of distillate fuel with a maximum sulfur content not to exceed 15 ppm (0.0015% sulfur by weight)
NO_x	--	2.58 lb/MMBtu from 40 CFR §89.112 Table 1 for NMHC + NOx,[1] as directed by 40 CFR §60.4205(b)
CO	--	3.23 lb/MMBtu from 40 CFR §89.112 Table 1 as directed by 40 CFR §60.4205(b)
VOC	--	2.58 lb/MMBtu from 40 CFR §89.112 Table 1 for NMHC + NOx,[1] as directed by 40 CFR §60.4205(b)
Visible Emissions	--	40 CFR §89.113(a)(1)-(3) as directed by 40 CFR §60.4205(b)

The BACT emission limits for the generator are the following:

Unit	PM (lb/hr)	PM_{10} (lb/hr)	SO_2 (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Generator # 4 (1.37 MMBtu/hr) Distillate fuel	0.26	0.26	0.01	3.53	4.43	3.53

Visible emissions from Generator #1 shall not exceed the following:

a. 20% opacity during the acceleration mode;
b. 15% opacity during the lugging mode; and
c. 50% opacity during the peaks in either the acceleration or lugging modes

[1] The emission factor combines NO_x and NMHC (representing VOC). 100% contribution of each is assumed for the respective limits.

2. 40 CFR Part 60, Subpart IIII

The federal regulation 40 CFR Part 60, Subpart IIII, *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (CI ICE)* is applicable to the emergency engine listed above since the unit was ordered after July 11, 2005, and manufactured after April 1, 2006. By meeting the requirements of Subpart IIII, the unit also meets the requirements found in the *National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*, 40 CFR Part 63, Subpart ZZZZ. [40 CFR §60.4200]

a. Emergency Engine Designation and Operating Criteria

Under Subpart IIII, a stationary reciprocating internal combustion engine (ICE) is considered an **emergency** stationary ICE (emergency engine) as long as the engine is operated in accordance with the following criteria. Operation of an engine outside of the criteria specified below may cause the engine to no longer be considered an emergency engine under Subpart IIII, resulting in the engine being subject to requirements applicable to **non-emergency** engines.

(1) Emergency Situation Operation (On-Site)
There is no operating time limit on the use of an emergency engine to provide electrical power or mechanical work during an emergency situation. Examples of use of an emergency engine during emergency situations include the following:

- Use of an engine to produce power for critical networks or equipment (including power supplied to portions of a facility) because of failure or interruption of electric power from the local utility (or the normal power source, if the facility runs on its own power production);
- Use of an engine to mitigate an on-site disaster or equipment failure;
- Use of an engine to pump water in the case of fire, flood, natural disaster, or severe weather conditions; and
- Similar instances.

(2) Non-Emergency Situation Operation
An emergency engine may be operated up to a maximum of 100 hours per calendar year for maintenance checks, readiness testing, and other non-emergency situations as described below.

(i) An emergency engine may be operated for a maximum of 100 hours per calendar year for maintenance checks and readiness testing, provided that the tests are recommended by federal, state, or local government; the manufacturer; the vendor; the regional transmission organization or equivalent balancing authority and transmission operator; or the insurance

company associated with the engine. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that federal, state, or local standards require maintenance and testing of emergency ICE more than 100 hours per calendar year.

(ii) An emergency engine may be operated for up to 50 hours per calendar year for other non-emergency situations. **However, these operating hours are counted as part of the 100 hours per calendar year operating limit described in paragraph (2) and (2) (i) above.**

The 50 hours per calendar year operating limit for other non-emergency situations cannot be used for peak shaving, non-emergency demand response, or to generate income for a facility by providing power to an electric grid or otherwise supply power as part of a financial arrangement with another entity, unless:

(a) The engine is dispatched by the local balancing authority or local transmission and distribution system operator.

(b) The dispatch is intended to mitigate local transmission and/or distribution limitations so as to avert potential voltage collapse or line overloads that could lead to the interruption of power supply in a local area or region.

(c) The dispatch follows reliability, emergency operation or similar protocols that follow specific North American Electric Reliability Corporation (NERC), regional, state, public utility commission, or local standards or guidelines.

(d) The power is provided only to the facility itself or to support the local transmission and distribution system.

(e) The owner or operator identifies and records the entity that dispatches the engine and the specific NERC, regional, state, public utility commission, or local standards or guidelines that are being followed for dispatching the engine. The local balancing authority or local transmission and distribution system operator may keep these records on behalf of the engine owner or operator.

[40 CFR §60.4211(f) and §60.4219]

b. 40 CFR Part 60, Subpart IIII Requirements

(1) 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 CFR §60.4202. [40 CFR §60.4205(b)]

(2) Ultra-Low Sulfur Fuel Requirement
The fuel fired in the engine shall not exceed 15 ppm sulfur (0.0015% sulfur), except that any existing fuel purchased (or otherwise obtained) prior to October 1, 2010, may be used until depleted. [40 CFR §60.4207(b)]

(3) Non-Resettable Hour Meter Requirement
A non-resettable hour meter shall be installed and operated on the engine. [40 CFR §60.4209(a)]

(4) Operation and Maintenance Requirements
The engine shall be operated and maintained according to the manufacturer's emission-related written instructions or procedures developed by York Hospital that are approved by the engine manufacturer. York Hospital may only change those emission-related settings that are permitted by the manufacturer. [40 CFR §60.4211(a)]

(5) Annual Time Limit for Maintenance and Testing
As an emergency engine, the unit shall be limited to 100 hours/year for maintenance checks and readiness testing, emergency demand response, and periods of voltage or frequency deviation from standards. Up to 50 hours/year of the 100 hours/year may be used in non-emergency situations (this does not include peak shaving, non-emergency demand response, or to generate income for a facility by providing power to an electric grid or otherwise supply power as part of a financial arrangement with another entity unless the conditions in §60.4211(f)(3)(i) are met). [40 CFR §60.4211(f)]

(6) Initial Notification Requirement
No initial notification is required under Subpart IIII for emergency engines. [40 CFR §60.4214(b)]

(7) Recordkeeping
York Hospital 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 operated for emergency purposes, including what classified the operation as emergency, and the number of hours the unit operated for non-emergency purposes. If the engine is operated during a period of demand response or deviation from standard voltage or frequency, or to supply power during a non-emergency situation as part of a financial arrangement with another entity as specified in §60.4211(f)(3)(i), The York Hospital shall keep records of the notification of the emergency situation, and the date, start time, and end time of engine operation for these purposes. [40 CFR §60.4214(b)]

(8) Annual Reporting Requirements for Demand Response Availability Over 15 Hours Per Year (for engines greater than 100 brake hp)
If York Hospital operates or is contractually obligated to be available for more than 15 hours per calendar year in a demand response program, during a period of deviation from standard voltage or frequency, or for supplying power during a non-emergency situation as part of a financial arrangement with another entity as specified in §60.4211(f)(3)(i), the facility shall submit an annual report containing the information in §60.4214(d)(1)(i) through (vii). The annual report for each calendar year must be submitted no later than March 31st of the following calendar year. The annual report must be submitted electronically using the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through EPA's Central Data Exchange (CDX) (www.epa.gov/cdx). However, if the reporting form is not available in CEDRI at the time that the report is due, the written report must be submitted to the following address:

U.S. Environmental Protection Agency, Region I
5 Post Office Square, Suite 100 (OES04-2)
Boston, MA 02109-3912
Attn: Air Compliance Clerk

[40 CFR §60.4214(d)]

C. Annual Emissions

1. Total Annual Emissions

York Hospital shall be restricted to the following annual emissions, based on a 12-month rolling total basis. The tons per year limits for the boilers, and for Generators #1, #2, and #3 have not been addressed in this amendment and are therefore based on those provided in licenses A-468-71-G-R and A-468-71-H-M which were issued on March 12, 2012 and July 22, 2014 respectively. Tons per year limits for Generator #4 were calculated based on 100 hours of operation.

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
Boilers	1.26	1.26	5.29	1.50	0.38	0.02
Generator #1	0.10	0.10	0.003	3.78	0.81	0.30
Generator #2	0.12	0.12	0.003	4.23	0.91	0.34
Generator #3	0.03	0.03	0.001	0.76	0.20	0.02
Generator #4	0.01	0.01	0.01	0.18	0.22	0.18
Total TPY	**1.5**	**1.5**	**5.3**	**10.5**	**2.5**	**0.9**

2. Greenhouse Gases

Greenhouse gases are considered regulated pollutants as of January 2, 2011, through 'Tailoring' revisions made to EPA's *Approval and Promulgation of Implementation Plans,* 40 CFR Part 52, Subpart A, §52.21, *Prevention of Significant Deterioration of Air Quality* rule. Greenhouse gases, as defined in 06-096 CMR 100 (as amended), are the aggregate group of the following gases: carbon dioxide, nitrous oxide, methane, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. For licensing purposes, greenhouse gases (GHG) are calculated and reported as carbon dioxide equivalents (CO_2e).

The quantity of CO_2e emissions from this facility is less than 100,000 tons per year, based on the following:

- worst case emission factors from the following sources: U.S. EPA's AP-42, the Intergovernmental Panel on Climate Change (IPCC), and 40 CFR Part 98, *Mandatory Greenhouse Gas Reporting*; and
- global warming potentials contained in 40 CFR Part 98.

No additional licensing actions to address GHG emissions are required at this time.

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-468-71-I-A subject to the conditions found in Air Emission License A-468-71-G-R, in amendment A-468-71-H-M and, 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

(20) **Generator #4**

A. Generator #4 shall be limited to 100 hours of operation per calendar year, excluding operating hours during emergency situations. [06-096 CMR 115, BACT]

B. Emissions shall not exceed the following [06-096 CMR 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 #4 (1.37 MMBtu/hr) distillate fuel	0.26	0.26	0.01	3.53	4.43	3.53

C. Visible Emissions from Generator #1 shall not exceed the following:
   a. 20% opacity during the acceleration mode;
   b. 15% opacity during the lugging mode; and
   c. 50 percent during the peaks in either the acceleration or lugging modes

[40 CFR §89.113(a)(1)-(3)]

D. Generator #4 shall meet the applicable requirements of 40 CFR Part 60, Subpart IIII, including the following:

1. Manufacturer Certification
   The engine shall be certified by the manufacturer as meeting the emission standards for new nonroad compression ignition engines found in §60.4202. [40 CFR §60.4205(b)]

2. Ultra-Low Sulfur Fuel
   The fuel fired in the engine shall not exceed 15 ppm sulfur (0.0015% sulfur), except that any existing 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 CFR §60.4207(b) and 06-096 CMR 115, BACT]

3. Non-Resettable Hour Meter
   A non-resettable hour meter shall be installed and operated on the engine. [40 CFR §60.4209(a)]

4. Annual Time Limit for Maintenance and Testing
   a. As an emergency engine, the unit shall be limited to 100 hours/year for maintenance checks and readiness testing, emergency demand response, and periods of voltage or frequency deviation from standards. Up to 50 hours/year of the 100 hours/year may be used in non-emergency situations (this does not include peak shaving, non-emergency demand response, or to generate income for a facility by providing power to an electric grid or otherwise supply power as part of a financial arrangement with another entity unless the conditions in §60.4211(f)(3)(i) are met). These limits are based on a calendar year. Compliance shall be demonstrated by records (electronic or written log) of all engine operating hours. [40 CFR §60.4211(f) and 06-096 CMR 115, BACT]

   b. York Hospital 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 operated for emergency purposes, including what classified the operation as emergency, and the number of hours the unit operated for non-emergency purposes. If the engine is operated during a period of demand response or deviation from standard voltage or frequency, or to supply power during a non-emergency situation as part of a financial arrangement with another entity as specified in §60.4211(f)(3)(i), York Hospital shall keep records of the notification of the emergency situation, and the date, start time, and end time of engine operation for these purposes.

5. Operation and Maintenance
   The engine shall be operated and maintained according to the manufacturer's emission-related written instructions or procedures developed by York Hospital that are approved by the engine manufacturer. York Hospital may only change those emission-related settings that are permitted by the manufacturer. [40 CFR §60.4211(a)]

6. Annual Reporting For Demand Response Availability Over 15 Hours Per Year (for engines greater than 100 brake hp)
   If York Hospital operates or is contractually obligated to be available for more than 15 hours per calendar year in a demand response program, during a period of deviation from standard voltage or frequency, or to supply power during a non-emergency situation as part of a financial arrangement with another entity as specified in §60.4211(f)(3)(i), York Hospital shall submit an annual report containing the information in §60.4214(d)(1)(i) through (vii). The annual report for each calendar year must be submitted no later than March 31st of the following calendar year. The annual report must be submitted electronically using the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through EPA's Central Data Exchange (CDX) (www.epa.gov/cdx). However, if the reporting form is not available in CEDRI at the time that the report is due, the written report must be submitted to the following address:

   U.S. Environmental Protection Agency, Region I
   5 Post Office Square, Suite 100 (OES04-2)
   Boston, MA 02109-3912
   Attn: Air Compliance Clerk

   [40 CFR §60.4214(d)]

DONE AND DATED IN AUGUSTA, MAINE THIS 25 DAY OF May , 2016.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: Marc Allen Robert Cone for
PAUL MERCER, COMMISSIONER

The term of this amendment shall be concurrent with the term of Air Emission License A-468-71-G-R.

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: 04/25/2016
Date of application acceptance: 04/27/2016

Date filed with the Board of Environmental Protection:

Filed
MAY 31 2016
State of Maine
Board of Environmental Protection

This Order prepared by Colby Fortier-Brown, Bureau of Air Quality.