



STATE OF MAINE  
DEPARTMENT OF ENVIRONMENTAL PROTECTION



PAUL R. LEPAGE  
GOVERNOR

PATRICIA W. AHO  
COMMISSIONER

**MaineGeneral Medical Center –  
Thayer Campus  
Kennebec County  
Waterville, Maine  
A-438-71-K-A (SM)**

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

**I. REGISTRATION**

**A. Introduction**

MaineGeneral Medical Center – Thayer Campus (MGMC) was issued Air Emission License A-438-71-J-R/A(SM) on November 5, 2012, permitting the operation of emission sources associated with their healthcare facility.

MGMC has requested an amendment to their license in order to replace existing Emergency Generator #2, rated at 450 kW, with a 500 kW generator (to be designated Emergency Generator #4) that will be moved from the MGMC – Seton Campus to the MGMC – Thayer Campus.

This amendment also limits existing Emergency Generator #3 and proposed Emergency Generator #4 to 100 hours of non-emergency operation per calendar year each for licensing and fee calculation purposes, with no operating restrictions during emergency situations. This is an update from the previous license, which limited emergency operation of Generator # 3 to 500 hours per year including emergency situations. This change was made in order to be consistent with federal regulations.

The equipment addressed in this license is located at 149 North Street, Waterville, Maine.

**B. Emission Equipment**

The following equipment is addressed in this air emission license:

AUGUSTA  
17 STATE HOUSE STATION  
AUGUSTA, MAINE 04333-0017  
(207) 287-7688 FAX: (207) 287-7826  
RAY BLDG., HOSPITAL ST.

BANGOR  
106 HOGAN ROAD, SUITE 6  
BANGOR, MAINE 04401  
(207) 941-4570 FAX: (207) 941-4584

PORTLAND  
312 CANCO ROAD  
PORTLAND, MAINE 04103  
(207) 822-6300 FAX: (207) 822-6303

PRESQUE ISLE  
1235 CENTRAL DRIVE, SKYWAY PARK  
PRESQUE ISLE, MAINE 04769  
(207) 764-0477 FAX: (207) 760-3143

Equipment	Power Output (kW)	Maximum Capacity (MMBTU/hr)	Maximum Firing Rate (gal/hr)	Fuel Type	Stack #
Emergency Generator #4	500	4.8	35.0	Distillate fuel, 0.0015%S	4

C. Definitions

*Distillate Fuel* means fuel oil that complies with the specifications for fuel oil numbers 1 or 2, as defined by the American Society for Testing and Materials 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

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 CMR 100 (as amended). 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 (TPY)
PM	15.9	15.8	-0.1	100
PM <sub>10</sub>	15.9	15.8	-0.1	100
SO <sub>2</sub>	79.1	79.1	0.0	100
NO <sub>x</sub>	49.5	48.0	-1.5	100
CO	16.2	16.4	0.2	100
VOC	2.2	2.2	0.0	50
CO <sub>2</sub> e	<100,000	<100,000	0.0	100,000

The application for MGMC for the addition of a 500 kW generator is considered to be a minor modification. Therefore, this application has been processed through *Major and Minor Source Air Emission License Regulations*, 06-096 CMR 115 (as amended). With the annual fuel limit placed on Boilers #1, #2, #3 and #4 (when firing distillate and/or #6 fuel oil) and the operating hour restriction on the Emergency Generators #3 and #4, MGMC is licensed below the major source thresholds and is therefore considered a synthetic minor. With the annual fuel limit on the boilers and generators listed above, MGMC is also licensed below the major source thresholds for hazardous air pollutants (HAP) and is considered an area source of HAP.

## II. BEST PRACTICAL TREATMENT (BPT)

### A. Introduction

In order to receive a license, MGMC 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. Emergency Generator #4

MGMC has requested to add an emergency generator (designated Emergency Generator #4) to this license. Emergency Generator #4, which was manufactured in 2009, is a Cummins Model 500 DFEK rated at 4.8 MMBTU/hr (500 kW) firing distillate fuel at a maximum rate of 35 gallons/hour. Emergency Generator #4 replaces existing Generator #2, which will be removed from service.

#### 1. BACT Findings

The BACT emission limits for Emergency Generator #4 are based on the following:

PM/PM <sub>10</sub>	0.15 g/hp-hr, 40CFR Part 60 Subpart IIII
SO <sub>2</sub>	0.0015 lb/MMBTU, combustion of distillate fuel with a maximum sulfur content not to exceed 15 ppm (0.0015% sulfur by weight)
NO <sub>x</sub>	4.80 g/hp-hr, 40CFR Part 60 Subpart IIII
CO	2.60 g/hp-hr, 40CFR Part 60 Subpart IIII
VOC	0.09 lb/MMBTU from AP-42, Table 3.4-1, dated 10/96
Opacity	06-096 CMR 101

The BACT emission limits for Emergency Generator #4 are as follows:

Equipment	PM (lb/hr)	PM <sub>10</sub> (lb/hr)	SO <sub>2</sub> (lb/hr)	NO <sub>x</sub> (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Emergency Generator #4	0.3	0.3	0.1	8.0	4.3	0.4

Visible emissions from Stack #4, servicing Emergency Generator #4, shall not exceed 20% on a six-minute block average basis, except for no more than two six-minute block averages in a three-hour period.

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 Emergency Generator #4 since the unit was ordered after July 11, 2005 and manufactured after April 1, 2006. By meeting the requirements of Subpart IIII, Emergency Generator #4 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.

a. Emergency Definition: *Emergency stationary ICE* means any stationary reciprocating internal combustion engine that meets all of the following criteria:

- (1) The stationary ICE is operated to provide electrical power or mechanical work during an emergency situation. Examples include stationary ICE used to produce power for critical networks or equipment (including power supplied to portions of a facility) when electric power from the local utility (or the normal power source, if the facility runs on its own power production) is interrupted, or stationary ICE used to pump water in the case of fire or flood, etc. There is no time limit on the use of emergency stationary ICE in emergency situations.
- (2) Paragraph (1) above notwithstanding, the emergency stationary ICE may be operated for any combination of the purposes specified below for a maximum of 100 hours per calendar year:
  - (i) 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 beyond 100 hours per calendar year.
  - (ii) Emergency demand response for periods in which the Reliability Coordinator under the North American Electric Reliability Corporation

(NERC) Reliability Standard EOP-002-3, Capacity and Energy Emergencies (incorporated by reference, see §63.14), or other authorized entity as determined by the Reliability Coordinator, has declared an Energy Emergency Alert Level 2 as defined in the NERC Reliability Standard EOP-002-3.

(iii) Periods where there is a deviation of voltage or frequency of 5 percent or greater below standard voltage or frequency.

- (3) Paragraphs (1) and (2) above notwithstanding, emergency stationary ICE may be operated for up to 50 hours per calendar year in non-emergency situations. These 50 hours are counted as part of the 100 hours per calendar year for maintenance checks and readiness testing, emergency demand response, and periods of voltage deviation or low frequency, as provided in paragraph (2) above.

The 50 hours per calendar year for 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, except if the following conditions are met:

- (i) The engine is dispatched by the local balancing authority or local transmission and distribution system operator.
- (ii) 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.
- (iii) The dispatch follows reliability, emergency operation or similar protocols that follow specific NERC, regional, state, public utility commission or local standards or guidelines.
- (iv) The power is provided only to the facility itself or to support the local transmission and distribution system.
- (v) 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

Emergency Generator #4 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 Emergency Generator #4 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 Emergency Generator #4. [40 CFR §60.4209(a)]

(4) Operation and Maintenance Requirements

Emergency Generator #4 shall be operated and maintained according to the manufacturer's emission-related written instructions or procedures developed by facility that are approved by the engine manufacturer. MGMC 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

Emergency Generator #4 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 for Emergency Generator #4. [40 CFR §60.4214(b)]

(7) Recordkeeping

MGMC shall keep records that include maintenance conducted on Emergency Generator #4 and the hours of operation recorded through the non-resettable hour meter. Documentation shall include the hours spent for emergency operation, including what classified the operation as emergency and how many hours spent for non-emergency. If Emergency Generator #4 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), MGMC 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 MGMC 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 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 first annual report must cover the calendar year 2015 and must be submitted no later than March 31, 2016. Subsequent annual reports for each calendar year must be submitted no later than March 31 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](http://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

MGMC shall be restricted to the following annual emissions, based on a 12-month rolling total:

**Total Licensed Annual Emissions for the Facility**  
**Tons/year**  
(used to calculate the annual license fee)

Equipment	PM	PM <sub>10</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO	VOC
Boilers #1, #2, #3 & #4, firing oil	7.5	7.5	78.8	18.8	1.3	0.1
Boilers #1, #2, #3 & #4, firing gas/propane	8.0	8.0	0.1	22.8	13.2	1.8
Emergency Generator #3	0.2	0.2	0.1	4.4	0.8	0.2
Emergency Generator #4	0.1	0.1	0.1	2.0	1.1	0.1
<b>Total TPY</b>	<b>15.8</b>	<b>15.8</b>	<b>79.1</b>	<b>48.0</b>	<b>16.4</b>	<b>2.2</b>

MGMC's annual emissions were based on Boilers #1, #2, #3 and #4 firing the equivalent of 75,000 MMBTU/year combined of #2 and/or #6 fuel oil on a twelve-month rolling total basis, unlimited firing of natural gas and/or propane and Emergency Generators #3 and #4 each limited to 100 hours/year operation.

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<sub>2</sub>e).

The quantity of CO<sub>2</sub>e emissions from this facility is less than 100,000 tons per year, based on the following:

- the facility's fuel use limits;
- 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.

### III. AMBIENT AIR QUALITY ANALYSIS

MGMC previously submitted an ambient air quality dispersion analysis for air emission license A-438-73-B-R (dated December, 1996) demonstrating that emissions from the facility, in conjunction with all other sources, do not violate ambient air quality standards. Since the maximum short-term emissions limits are not changing significantly, an ambient air quality analysis is not required for this 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 (BPT) / Best Available Control Technology (BACT),
- 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 A-438-71-K-A subject to the conditions found in Air Emission License A-438-71-J-R/A and the following conditions.

Severability. The invalidity or unenforceability of any provision, or part thereof, of this License shall not affect the remainder of the provision or any other provisions. This License 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 (17) in Air Emission License A-438-71-J-R/A.

#### (17) Emergency Generators #3 and #4

- A. The distillate fuel fired in Emergency Generators #3 and #4 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. [06-096 CMR 115]
- B. Generators #3 and #4 are each limited to 100 hours of total operation per calendar year, excluding operating hours during emergency situations. [06-096 CMR 115]

C. Emissions from Generators #3 and #4 shall not exceed the following:

Emission Unit	Pollutant	lb/MMBtu	Origin and Authority
Emergency Generator #3	PM	0.12	06-096 CMR 103(2)(B)(1)(a)
Emergency Generator #4	PM	0.12	06-096 CMR 103(2)(B)(1)(a)

D. Emissions from Generators #3 and #4 shall not exceed the following [06-096 CMR 115, BPT]:

Equipment	PM (lb/hr)	PM <sub>10</sub> (lb/hr)	SO <sub>2</sub> (lb/hr)	NO <sub>x</sub> (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Emergency Generator #3	0.9	0.9	0.1	17.6	3.3	0.9
Emergency Generator #4	0.3	0.3	0.1	8.0	4.3	0.4

E. Visible emissions from Emergency Generators #3 and #4 shall each not exceed 20% on a six-minute block average basis, except for no more than two six-minute block averages in a continuous three-hour period. [06-096 CMR 101]

F. Emergency Generator #3

1. Emergency Generator #3 is only to be operated for maintenance purposes and for situations arising from sudden and reasonably unforeseeable events beyond the control of the source. Emergency Generator #3 is not to be used for prime power when reliable offsite power is available; nor to operate or to be 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 supplying power during a non-emergency situation as part of a financial arrangement with another entity. [06-096 CMR 115, BPT]
2. MGMC shall keep records that include maintenance conducted on Emergency Generator #3 and the hours of operation of the engine recorded through the non-resettable hour meter. Documentation shall include the hours spent for emergency operation, including what classified the operation as emergency and how many hours spent for non-emergency. [06-096 CMR 115, BPT]

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

1. Manufacturer Certification

Emergency Generator #4 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 Emergency Generator #4 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]

3. Non-Resettable Hour Meter

A non-resettable hour meter shall be installed and operated on Emergency Generator #4. [40 CFR §60.4209(a)]

4. Annual Time Limit for Maintenance and Testing

a. Emergency Generator #4 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]

b. MGMC shall keep records that include maintenance conducted on the engine(s) and the hours of operation of Emergency Generator #4 recorded through the non-resettable hour meter. Documentation shall include the hours spent for emergency operation, including what classified the operation as emergency and how many hours spent for non-emergency. If Emergency Generator #4 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 MGMC 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

Emergency Generator #4 shall be operated and maintained according to the manufacturer's emission-related written instructions or procedures developed by MGMC that are approved by the engine manufacturer. MGMC 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 MGMC 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 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 first annual report must cover the calendar year 2015 and must be submitted no later than March 31, 2016. Subsequent annual reports for each calendar year must be submitted no later than March 31 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](http://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)]

MaineGeneral Medical Center –  
Thayer Campus  
Kennebec County  
Waterville, Maine  
A-438-71-K-A (SM)

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

H. Once Emergency Generator #4 is installed and brought online, Emergency Generator #2 shall be removed from service. [06-096 CMR 115]

DONE AND DATED IN AUGUSTA, MAINE THIS 24 DAY OF July, 2015.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: Marc Allen Robert Cone for  
PATRICIA W. AHO, COMMISSIONER

**The term of this amendment shall be concurrent with the term of Air Emission License A-438-71-J-R/A.**

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: June 22, 2015

Date of application acceptance: June 22, 2015

Date filed with the Board of Environmental Protection:

This Order prepared by Kevin J Ostrowski, Bureau of Air Quality.

