



STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION



PAUL R. LEPAGE
GOVERNOR

PATRICIA W. AHO
COMMISSIONER

**MAINE MARITIME ACADEMY
HANCOCK COUNTY
CASTINE, MAINE
A-78-71-N-A (SM)**

**DEPARTMENTAL
FINDINGS OF FACT AND ORDER
AIR EMISSION LICENSE
AMENDMENT #1**

FINDINGS OF FACT

After review of the air emissions 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

Maine Maritime Academy (MMA) located at 1 Pleasant Street in Castine, Maine has applied to amend their Air Emission License permitting the operation of emission sources associated with their college. MMA has requested an amendment to their license in order to install a new emergency generator.

B. Emission Equipment

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

Generator

Equipment	Maximum Design Capacity (MMBtu/hr)	Maximum Output (kW)	Firing Rate (gal/hr)	Fuel Type, % sulfur	Date of Manuf.
Emergency Generator #6A (ABS)	1.6	150	11.7	Distillate fuel, 0.0015%	2014

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

C. Application Classification

This amendment will not increase any criteria pollutant above the currently licensed allowed emission limits. Therefore, this modification is determined to be a minor modification and has been processed as such. Since the Emergency Generator #6A is not currently licensed, all criteria pollutants are subject to Best Available Control Technology (BACT) requirements as described in the following section.

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 as well as for those sources located in designated non-attainment areas.

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

B. Emergency Generator #6A

MMA is requesting to include Emergency Generator #6A in its air emission license for back-up power to support emergency response critical to the campus buildings. The new generator has a maximum heat input rating of 1.6 MMBtu/hr (150 kW) and was manufactured in 2014. The new engine is planned for installation in 2015 and is EPA Certified Tier III. The emergency generator was manufactured after April 1, 2006; therefore, it is subject to New Source Performance Standards (NSPS) 40 CFR Part 60, Subpart IIII, *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*.

1. BACT Findings

A summary of the BACT analysis for Emergency Generator #6A is the following:

- The emergency generator shall fire only distillate fuel with a maximum sulfur content not to exceed 15 ppm (0.0015%) by weight.
- The emergency generator shall be limited to 100 hr/yr of operation for maintenance checks and readiness testing. Compliance shall be demonstrated by a written log of the generator operating hours.
- The emergency generator shall be equipped with a non-resettable hour meter.

- PM emission limits from 40 CFR Part 60 Subpart IIII are streamlined into the PM BACT emission limits. The PM₁₀ limits are derived from the PM limits.
- NO_x, CO, and VOC emission limits are based upon 40 CFR Part 60 Subpart IIII.
- PNS shall operate and maintain the emergency generators in accordance with the manufacturer’s written instructions. PNS shall not change settings that are not approved in writing by the manufacturer.
- Visible emissions from the emergency generator shall not exceed 20% opacity on a six (6) minute block average, except for no more than two (2) six (6) minute block averages in a continuous 3-hour period.
- The BACT emission limits for the generator are based on the following:

(Emergency Generator #6A)

- PM/PM₁₀ - 0.20 g/kW-hr (EPA Certified Tier III & 40 CFR Part 60 Subpart IIII);
- SO₂ - based on firing 0.0015% sulfur distillate fuel;
- NO_x - 9.2 g/kW-hr (EPA Certified Tier III & 40 CFR Part 60 Subpart IIII);
- CO - 3.5 g/kW-hr (EPA Certified Tier III & 40 CFR Part 60 Subpart IIII);
- VOC - 1.3 g/kW-hr (EPA Certified Tier III & 40 CFR Part 60 Subpart IIII);

The BACT emission limits for the emergency 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)
Emergency Generator #6A (1.6 MMBtu/hr) Distillate fuel	0.1	0.1	0.1	3.1	1.2	0.5

Visible emissions from Emergency Generator #6A shall not exceed 20% opacity on a 6-minute block average, except for no more than two (2) six (6) minute block averages in a 3-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 the emergency generator 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 meet 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 III Requirements:

(1) Manufacturer Certification Requirement

The generator shall be certified by the manufacturer as meeting the emission standards for new non-road 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 generator 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 generator. [40 CFR §60.4209(a)]

(4) Operation and Maintenance Requirements

The generator 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. MMA 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

The generator 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 engines. [40 CFR §60.4214(b)]

(7) Recordkeeping

MMA 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 hours spent for emergency operation, including what classified the operation as emergency and how many hours spent for non-emergency. If the generator 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), MMA shall keep records of the notification of the emergency situation, and the date, start time, and end time of generator operation for these purposes. [40 CFR §60.4214(b)]

(8) Annual Reporting Requirements for Demand Response Availability Over 15 Hours Per Year.

If MMA 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). 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:

Director, Office of Ecosystem Protection
U.S. Environmental Protection Agency
5 Post Office Square, Suite 100

Boston, MA 02109-3912

[40 CFR §60.4214(d)]

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,
- will not violate applicable ambient air quality standards in conjunction with emissions from other sources.

The Department hereby grants Minor Modification, Air Emission License A-78-71-N-A, subject to the conditions found in Air Emission License A-78-71-M-R/A and in 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 Condition is new to Air Emission License A-78-71-M-R/A:

(20) Emergency Generator #6A

- A. The emergency generator shall be limited to 100 hours of operation per calendar year, excluding operating hours during emergency situations. [06-096 CMR 115]
- B. Emissions shall not exceed the following [06-096 CMR 115, BPT]:

Unit	PM (lb/hr)	PM₁₀ (lb/hr)	SO₂ (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Emergency Fire Pump (1.6 MMBtu/hr) Distillate fuel	0.1	0.1	0.1	3.1	1.2	0.5

C. Visible Emissions

Visible emissions from the distillate fuel-fired generator shall each not exceed 20% opacity on a six (6) minute block average, except for no more than two (2) six (6) minute block averages in a continuous 3-hour period. [06-096 CMR 101]

D. Emergency Generator #6A shall meet the applicable requirements of 40 CFR Part 60, Subpart IIII, including the following:

1. Manufacturer Certification

Emergency Generator #6A shall be certified by the manufacturer as meeting the emission standards for new non-road compression ignition engines found in §60.4202. [40 CFR §60.4205(b)]

2. Ultra-Low Sulfur Fuel

The fuel fired in the generator 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 #6A. [40 CFR §60.4209(a)]

4. Annual Time Limit for Maintenance and Testing

a. The generator 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 a written log of all generator operating hours. [40 CFR §60.4211(f) and 06-096 CMR 115]

b. MMA shall keep records that include maintenance conducted on the generator 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. If the generator 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), MMA shall keep records of the notification of the emergency situation, and the date, start time, and end time of generator operation for these purposes.

5. Operation and Maintenance

The generator shall be operated and maintained according to the manufacturer's emission-related written instructions or procedures developed by MMA that are approved by the engine manufacturer. MMA 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 generators greater than 100 brake hp):

If MMA 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). 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:

Director, Office of Ecosystem Protection
U.S. Environmental Protection Agency
5 Post Office Square, Suite 100
Boston, MA 02109-3912

[40 CFR §60.4214(d)]

DONE AND DATED IN AUGUSTA, MAINE THIS 30 DAY OF *January*, 2015.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

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

The term of this amendment shall be concurrent with the term of Air Emission License A-78-71-M-R/A

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: December 18, 2014

Date of application acceptance: December 23, 2014

Date filed with the Board of Environmental Protection:

This Order prepared by Edwin Cousins, Bureau of Air Quality

