



STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION



PAUL R. LEPAGE
GOVERNOR

PATRICIA W. AHO
COMMISSIONER

**Unum Corporation
Cumberland County
Portland, Maine
A-657-71-L-R/M (SM)**

**Departmental
Findings of Fact and Order
Air Emission License
Renewal**

FINDINGS OF FACT

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

I. REGISTRATION

A. Introduction

Unum Corporation (Unum) has applied to renew their Air Emission License permitting the operation of emission sources associated with their insurance office building.

This license includes a minor revision in order to update the maximum heat input capacities for HO3-Boilers #2 - #4 to their correct values.

The equipment addressed in this license is located at 2211 Congress Street in Portland, Maine.

B. Emission Equipment

The following equipment is addressed in this air emission license:

Boilers

| Equipment | Maximum Capacity (MMBtu/hr) | Maximum Firing Rate (scf/hr) | Fuel Type | Date of Construction | Stack # |
|------------------|------------------------------------|-------------------------------------|------------------|-----------------------------|----------------|
| HO2-Boiler #1a | 3.5 | 3391 | Natural gas | 2003 | 1 |
| HO2-Boiler #1b | 3.5 | 3391 | Natural gas | 2003 | 1 |
| HO2-Boiler #2a | 2.07 | 2009.7 | Natural gas | 2002 | 1 |
| HO2-Boiler #2b | 2.07 | 2009.7 | Natural gas | 2002 | 1 |
| HO2-Boiler #2c | 2.07 | 2009.7 | Natural gas | 2002 | 1 |

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

| <u>Equipment</u> | <u>Maximum Capacity (MMBtu/hr)</u> | <u>Maximum Firing Rate (scf/hr)</u> | <u>Fuel Type</u> | <u>Date of Construction</u> | <u>Stack #</u> |
|------------------|------------------------------------|-------------------------------------|------------------|-----------------------------|----------------|
| HO2-Boiler #2d | 2.07 | 2009.7 | Natural gas | 2002 | 1 |
| HO2-Boiler #2e | 2.07 | 2009.7 | Natural gas | 2002 | 1 |
| HO2-Boiler #3 | 1.0 | 970.9 | Natural gas | 1996 | 1 |
| HO3-Boiler #1 | 4.5 | 4369 | Natural gas | 1998 | 6 |
| HO3-Boiler #2 | 4.52 | 4385 | Natural gas | 1998 | 7 |
| HO3-Boiler #3 | 4.52 | 4385 | Natural gas | 1998 | 7 |
| HO3-Boiler #4 | 4.52 | 4385 | Natural gas | 1998 | 7 |

Generators

| <u>Equipment</u> | <u>Horse Power (KW)</u> | <u>Maximum Capacity (MMBtu/hr)</u> | <u>Firing Rate (gal/hr)</u> | <u>Fuel Type, % sulfur</u> | <u>Date of Construction</u> | <u>Stack #</u> |
|------------------|-------------------------|------------------------------------|-----------------------------|----------------------------|-----------------------------|----------------|
| HO1-Gen #1 | 150 | 1.6 | 11.8 | Diesel Fuel, 0.0015% | 2010 | - |
| HO2-Gen #2 | 250 | 2.7 | 19.4 | Diesel Fuel, 0.0015% | 2010 | - |
| HO3-Gen #3 | 100 | 1.0 | 7.4 | Diesel Fuel, 0.0015% | 1998 | 8 |
| Generator #4 | 2000 | 20.14 | 147.0 | Diesel Fuel, 0.0015% | 2005 | 9 |
| Generator #5 | 2000 | 20.14 | 147.0 | Diesel Fuel, 0.0015% | 2005 | 10 |

C. Application Classification

The application for Unum does not include the installation of new or modified equipment. Emission factors have been updated to reflect the most current values resulting in modified licensed emissions. Therefore, the license is considered to be a renewal of currently licensed emission units only and has been processed through *Major and Minor Source Air Emission License Regulations, 06-096 CMR 115* (as amended). With the fuel limit on the boilers and the operating hour restrictions on the emergency generators, the facility is licensed below the major source thresholds and is considered a synthetic minor.

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 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.

B. Boilers

Unum operates 12 boiler units, HO2-Boilers #1a, #1b, #2a, #2b, #2c, #2d, #2e and #3, and HO3-Boilers #1, #2, #3 and #4. The boilers are rated between 1.0 MMBtu/hr and 4.52 MMBtu/hr and all units fire natural gas. The oldest boiler was installed in 1996 and the most recent boiler in 2003. All HO2-Boilers exhaust to common Stack #1, HO3-Boiler #1 exhausts to Stack #6 and HO3-Boilers #2, #3 and #4 exhaust to common Stack #7.

Due to all the boilers each having an individual maximum heat input capacity less than 10.0 MMBtu/hr, the units are not subject to the New Source Performance Standards (NSPS) 40 CFR Part 60, Subpart Dc, *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units*, for units greater than 10 MMBtu/hr manufactured after June 9, 1989.

1. BPT Findings

The BPT emission limits for the boilers were based on the following:

Natural Gas

PM/PM₁₀ – PM emissions are regulated by 06-096 CMR 103, *Fuel Burning Equipment Particulate Emission Standard*, however, the PM emission limit of 0.05 lb/MMBtu when firing natural gas is more stringent and shall be considered BPT. [06-096 CMR 115, BPT]

SO₂ – 0.6 lb/MMscf: AP-42, Table 1.4-2 (dated 7/98)

NO_x – 100 lb/MMscf: AP-42, Table 1.4-1 (dated 7/98)

CO – 84 lb/MMscf: AP-42, Table 1.4-1 (dated 7/98)
 VOC – 5.5 lb/MMscf: AP-42, Table 1.4-2 (dated 7/98)
 Opacity – 06-096 CMR 101

The BPT emission limits for the boilers 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) |
|----------------|---------------|-----------------------------|----------------------------|----------------------------|---------------|----------------|
| HO2-Boiler #1a | 0.18 | 0.18 | 0.01 | 0.34 | 0.28 | 0.02 |
| HO2-Boiler #1b | 0.18 | 0.18 | 0.01 | 0.34 | 0.28 | 0.02 |
| HO2-Boiler #2a | 0.10 | 0.10 | 0.01 | 0.20 | 0.17 | 0.01 |
| HO2-Boiler #2b | 0.10 | 0.10 | 0.01 | 0.20 | 0.17 | 0.01 |
| HO2-Boiler #2c | 0.10 | 0.10 | 0.01 | 0.20 | 0.17 | 0.01 |
| HO2-Boiler #2d | 0.10 | 0.10 | 0.01 | 0.20 | 0.17 | 0.01 |
| HO2-Boiler #2e | 0.10 | 0.10 | 0.01 | 0.20 | 0.17 | 0.01 |
| HO2-Boiler #3 | 0.05 | 0.05 | 0.01 | 0.10 | 0.08 | 0.01 |
| HO3-Boiler #1 | 0.23 | 0.23 | 0.01 | 0.44 | 0.37 | 0.02 |
| HO3-Boiler #2 | 0.23 | 0.23 | 0.01 | 0.44 | 0.37 | 0.02 |
| HO3-Boiler #3 | 0.23 | 0.23 | 0.01 | 0.44 | 0.37 | 0.02 |
| HO3-Boiler #4 | 0.23 | 0.23 | 0.01 | 0.44 | 0.37 | 0.02 |

Visible emissions from each stack serving the natural gas boilers (Stack #1, #6 and #7) shall not exceed an opacity of 10% on a 6-minute block average basis, except for no more than one (1) six (6) minute block average in a 3-hour period.

Unum shall be limited to a combined total of 100,000,000 standard cubic feet (scf) per year of natural gas fired in the boiler units, based on a calendar year.

2. Periodic Monitoring

Periodic monitoring for the boilers shall include recordkeeping to document fuel use both on a monthly and calendar year basis. Documentation shall include the quantity and type of fuel used.

3. 40 CFR Part 63 Subpart JJJJJ

The boiler units fire natural gas and are therefore not subject to the *National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources* (40 CFR Part 63 Subpart JJJJJ). [40 CFR Part 63 §63.11195(e)]

C. Emergency HO1-Gen #1, HO2-Gen #2 and HO3-Gen #3

Unum operates a total of five emergency generators. HO1-Gen #1, HO2-Gen #2 and HO3-Gen #3 are rated at 150 kW (1.6 MMBtu/hr), 250 kW (2.7 MMBtu/hr) and 100 kW (1.0 MMBtu/hr), respectively. HO1-Gen #1 and HO2-Gen #2 were installed in 2010 and HO3-Gen #3 was installed in 1998. All the units fire diesel fuel oil and each exhausts through their own stack.

1. BPT Findings

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

PM/PM₁₀ – 0.12 lb/MMBtu, based on 06-096 CMR 103
SO₂ – 0.0015 lb/MMBtu based on firing 0.0015% sulfur
NO_x – 4.41 lb/MMBtu, AP-42, Table 3.3-1 (dated 10/96)
CO – 0.95 lb/MMBtu, AP-42, Table 3.3-1 (dated 10/96)
VOC – 0.36 lb/MMBtu, AP-42, Table 3.3-1 (dated 10/96)
Opacity – 06-096 CMR 101

The BPT emission limits 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) |
|------------|---------------|-----------------------------|----------------------------|----------------------------|---------------|----------------|
| HO1-Gen #1 | 0.19 | 0.19 | 0.01 | 7.13 | 1.54 | 0.58 |
| HO2-Gen #2 | 0.32 | 0.32 | 0.01 | 11.72 | 2.52 | 0.96 |
| HO3-Gen #3 | 0.12 | 0.12 | 0.01 | 4.47 | 0.96 | 0.36 |

Visible emissions from each of the diesel emergency generators 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 continuous 3-hour period.

Each of the emergency generators shall be limited to 500 hours of operation a year, based on a calendar year. Unum shall keep records of the hours of operation for each unit.

D. Emergency Generators #4 and #5

Emergency Generators #4 and #5 are each rated at 2000 kW (20.14 MMBtu/hr) and fire diesel fuel. The generators were manufactured and installed in 2005. Generators #4 and #5 exhaust through their own stacks, Stack #9 and Stack #10, respectively.

1. BPT Findings

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

- PM/PM₁₀ – 0.10 lb/MMBtu from AP-42 Table 3.4-1 (dated 10/96)
- SO₂ – 0.0015 lb/MMBtu based on firing 0.0015% sulfur
- NO_x – 38.88 lb/hr based on manufacturer's "Not to exceed data" (dated 05/2005)
- CO – 7.45 lb/hr based on manufacturer's "Not to exceed data" (dated 05/2005)
- VOC – 0.72 lb/hr based on manufacturer's "Not to exceed data" (dated 05/2005)
- Opacity – 06-096 CMR 101

The BPT emission limits 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 | 2.01 | 2.01 | 0.03 | 38.88 | 7.45 | 0.72 |
| Generator #5 | 2.01 | 2.01 | 0.03 | 38.88 | 7.45 | 0.72 |

Visible emissions from each of the diesel emergency generators 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.

Generators #4 and #5 shall each be limited to 500 hours of operation a year, based on a calendar year. Unum shall keep records of the hours of operation for each unit.

E. 40 CFR Part 63, Subpart ZZZZ and 40 CFR Part 60, Subpart IIII

a. Applicability:

40 CFR Part 63, Subpart ZZZZ

The federal regulation 40 CFR Part 63, Subpart ZZZZ, *National Emission Standards for Hazardous Air Pollutants (NESHAP) for Stationary Reciprocating Internal Combustion Engines* is applicable to units considered existing, emergency stationary reciprocating internal combustion engines at an area HAP source and not subject to New Source Performance Standards regulations.

HO3-Gen #3 is classified as an existing, emergency RICE, however, it is exempt because it is considered a commercial engine according to EPA's

August 9, 2010 memo (*Guidance Regarding Definition of Residential, Commercial, and Institutional Emergency Stationary RICE in the NESHAP for Stationary RICE*).

Generators #4 and #5 are commercial engines but they participate in a demand response program and therefore are subject to 40 CFR Part 63, Subpart ZZZZ. If a generator participates in a demand response program (which Generators #4 and #5 do) and operates or is contractually obligated to be available for more than 15 hours per calendar year in such 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 §63.6640(f)(4)(ii), the respective generator shall meet all applicable requirements of 40 CFR Part 63, Subpart ZZZZ. If Generators #4 and #5 participate for less than 15 hours then they are no longer subject to 40 CFR Part 63, Subpart ZZZZ and do not have to meet any of the applicable requirements seen below.

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 generators HO1-Gen #1 and HO2-Gen #2 since the units were ordered after July 11, 2005 and manufactured after April 1, 2006. By meeting the requirements of Subpart IIII, HO1-Gen#1 and HO2-Gen #2 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.

HO3-Gen #3, Generator #4 and Generator #5 are exempt from 40 CFR Part 60, Subpart IIII because they were ordered prior to the applicability dates.

b. Emergency Definition:

Emergency stationary RICE for both 40 CFR Part 63, Subpart ZZZZ and 40 CFR Part 60, Subpart IIII means any stationary reciprocating internal combustion engine that meets all of the following criteria:

- (1) The stationary RICE is operated to provide electrical power or mechanical work during an emergency situation. Examples include stationary RICE 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 RICE used to pump water in the case of fire or flood, etc.

(2) Paragraph (1) above notwithstanding, the emergency stationary RICE 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 RICE 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 for Subpart ZZZZ or §60.17 for Subpart IIII), 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 RICE 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 provided in the following paragraphs:

- (i) Prior to May 3, 2014, the 50 hours per year for non-emergency situations can be used for peak shaving or non-emergency demand response to generate income for a facility, or to otherwise supply power as part of a financial arrangement with another entity if the engine is operated as part of a peak shaving (load management

program) with the local distribution system operator and the power is provided only to the facility itself or to support the local distribution center. *

* Applicable only to Generator #4 and Generator #5 for being subject to 40 CFR Part 63, Subpart ZZZZ. HO1-Gen #1 and HO2-Gen #2 are subject to 40 CFR Part 60, Subpart IIII and therefore are not eligible for this condition.

- (ii) The 50 hours per year for non-emergency situations can be used to supply power as part of a financial arrangement with another entity if all of the following conditions are met:
- (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 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.

The emergency generators shall be limited to the usage outlined in §63.6640(f) for those subject to 40 CFR Part 63, Subpart ZZZZ or §60.4211(f) for those subject to 40 CFR Part 60, Subpart IIII and therefore may be classified as an existing emergency stationary RICE as defined in the federal regulations. Failure to comply with all of the requirements listed in §63.6640(f) or §60.4211(f) may cause these engines to not be considered emergency engines and therefore subject to all the requirements for non-emergency engines.

c. 40 CFR Part 63, Subpart ZZZZ Requirements:

Generator #4 and Generator #5 shall meet these requirements should the respective generator operate or 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 as specified in §63.6640(f)(4)(ii).

| | Compliance Dates | Operating Limitations* (40 CFR §63.6603(a) and Table 2(d)) |
|--|------------------------------|---|
| Compression ignition (diesel, fuel oil) units, if applicable: Generator #4, Generator #5 | No later than May 3, 2013 | <ul style="list-style-type: none"> - Change oil and filter every 500 hours of operation or annually, whichever comes first; - Inspect the air cleaner every 1000 hours of operation or annually, whichever comes first, and replace as necessary; and - Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary. |

* Note: Due to the 500 hour operation limit on each generator, the inspections and oil/filter changes shall be performed annually to meet the requirements of 40 CFR Part 63, Subpart ZZZZ.

Each applicable generator shall be operated and maintained according to the manufacturer's emission-related written instructions or Unum shall develop a maintenance plan which must provide 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 CFR §63.6625(e)]

Unum 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, Unum must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil changes for the engine. The analysis program must be part of the maintenance plan for the engine. [40 CFR §63.6625(i)]

A non-resettable hour meter shall be installed and operated on each applicable generator. [40 CFR §63.6625(f)]

During periods of startup the facility must minimize the engine'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, after which time the

non-startup emission limitations apply. [40 CFR §63.6625(h) & 40 CFR Part 63, Subpart ZZZZ Table 2d]

Generators #4 and #5, if applicable, shall each 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 §63.6640(f)(4)(ii) are met). [40 CFR §63.6640(f)]

Unum shall keep records that include maintenance conducted on the applicable generator(s), and the hours of operation of each 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 generators are operated during a period of demand response or 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 §63.6640(f)(4)(ii), Unum must 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 §63.6655(e) and (f)]

Beginning January 1, 2015, the diesel fuel fired in the applicable generator(s) shall not exceed 15 ppm sulfur (0.0015%). Any existing diesel fuel purchased (or otherwise obtained) prior to January 1, 2015, may be used until depleted. [40 CFR §63.6604(b)]

Unum shall submit an annual report containing the information in §63.6650(h)(1)(i) through (ix) for the applicable generator(s). 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 §63.6650(h)]

d. 40 CFR Part 60, Subpart III Requirements:

HO1-Gen #1 and HO2-Gen #2 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)]

The diesel fuel fired in HO1-Gen #1 and HO2-Gen #2 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. [40 CFR §60.4207(b)]

A non-resettable hour meter shall be installed and operated on HO1-Gen #1 and HO2-Gen #2. [40 CFR §60.4209(a)]

HO1-Gen #1 and HO2-Gen #2 shall be operated and maintained according to the manufacturer's emission-related written instructions or procedures developed by Unum that are approved by the engine manufacturer. Unum may only change those emission-related settings that are permitted by the manufacturer. [40 CFR §60.4211(a)]

HO1-Gen #1 and HO2-Gen #2 shall each 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)]

No initial notification is required for HO1-Gen #1 and HO2-Gen #2. [40 CFR §60.4214(b)]

If HO1-Gen #1 and/or HO2-Gen #2 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) for the respective generator(s). 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)]

F. Annual Emissions

1. Total Annual Emissions

Unum shall be restricted to the following annual emissions, based on a calendar year total. The tons per year limits were calculated based on a combined total use of 100,000,000 scf/yr of natural gas in the boiler units and 500 hrs/yr for each of the emergency generators:

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 | 2.58 | 6.18 | 0.03 | 5.00 | 4.20 | 0.28 |
| HO1-Gen #1 | 0.05 | 0.05 | 0.01 | 1.78 | 0.38 | 0.15 |
| HO2-Gen #2 | 0.08 | 0.08 | 0.01 | 2.93 | 0.63 | 0.24 |
| HO3-Gen #3 | 0.03 | 0.03 | 0.01 | 1.12 | 0.24 | 0.09 |
| Generator #4 | 0.50 | 0.50 | 0.01 | 9.72 | 1.86 | 0.18 |
| Generator #5 | 0.50 | 0.50 | 0.01 | 9.72 | 1.86 | 0.18 |
| Total TPY | 3.7 | 3.7 | 0.1 | 30.3 | 9.2 | 1.1 |

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 (CO₂e).

Based on the facility's fuel use limit(s), the worst case emission factors from AP-42, IPCC (Intergovernmental Panel on Climate Change), and *Mandatory Greenhouse Gas Reporting*, 40 CFR Part 98, and the global warming potentials contained in 40 CFR Part 98, Unum is below the major source threshold of 100,000 tons of CO₂e per year. Therefore, no additional licensing requirements are needed to address GHG emissions at this time.

III. AMBIENT AIR QUALITY ANALYSIS

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

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

The total facility licensed emissions 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.

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 A-657-71-L-R/M subject to 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.

STANDARD CONDITIONS

- (1) Employees and authorized representatives of the Department shall be allowed access to the licensee's premises during business hours, or any time during which any emissions units are in operation, and at such other times as the Department deems necessary for the purpose of performing tests, collecting samples, conducting inspections, or examining and copying records relating to emissions (38 M.R.S.A. §347-C).
- (2) The licensee shall acquire a new or amended air emission license prior to commencing construction of a modification, unless specifically provided for in Chapter 115. [06-096 CMR 115]
- (3) Approval to construct shall become invalid if the source has not commenced construction within eighteen (18) months after receipt of such approval or if construction is discontinued for a period of eighteen (18) months or more. The Department may extend this time period upon a satisfactory showing that an extension is justified, but may condition such extension upon a review of either the control technology analysis or the ambient air quality standards analysis, or both. [06-096 CMR 115]
- (4) The licensee shall establish and maintain a continuing program of best management practices for suppression of fugitive particulate matter during any period of construction, reconstruction, or operation which may result in fugitive dust, and shall submit a description of the program to the Department upon request. [06-096 CMR 115]
- (5) The licensee shall pay the annual air emission license fee to the Department, calculated pursuant to Title 38 M.R.S.A. §353-A. [06-096 CMR 115]
- (6) The license does not convey any property rights of any sort, or any exclusive privilege. [06-096 CMR 115]
- (7) The licensee shall maintain and operate all emission units and air pollution systems required by the air emission license in a manner consistent with good air pollution control practice for minimizing emissions. [06-096 CMR 115]
- (8) The licensee shall maintain sufficient records to accurately document compliance with emission standards and license conditions and shall maintain such records for a minimum of six (6) years. The records shall be submitted to the Department upon written request. [06-096 CMR 115]
- (9) The licensee shall comply with all terms and conditions of the air emission license. The filing of an appeal by the licensee, the notification of planned changes or anticipated noncompliance by the licensee, or the filing of an

application by the licensee for a renewal of a license or amendment shall not stay any condition of the license. [06-096 CMR 115]

- (10) The licensee may not use as a defense in an enforcement action that the disruption, cessation, or reduction of licensed operations would have been necessary in order to maintain compliance with the conditions of the air emission license. [06-096 CMR 115]
- (11) In accordance with the Department's air emission compliance test protocol and 40 CFR Part 60 or other method approved or required by the Department, the licensee shall:
- A. perform stack testing to demonstrate compliance with the applicable emission standards under circumstances representative of the facility's normal process and operating conditions:
 - 1. within sixty (60) calendar days of receipt of a notification to test from the Department or EPA, if visible emissions, equipment operating parameters, staff inspection, air monitoring or other cause indicate to the Department that equipment may be operating out of compliance with emission standards or license conditions; or
 - 2. pursuant to any other requirement of this license to perform stack testing.
 - B. install or make provisions to install test ports that meet the criteria of 40 CFR Part 60, Appendix A, and test platforms, if necessary, and other accommodations necessary to allow emission testing; and
 - C. submit a written report to the Department within thirty (30) days from date of test completion.
- [06-096 CMR 115]
- (12) If the results of a stack test performed under circumstances representative of the facility's normal process and operating conditions indicate emissions in excess of the applicable standards, then:
- A. within thirty (30) days following receipt of such test results, the licensee shall re-test the non-complying emission source under circumstances representative of the facility's normal process and operating conditions and in accordance with the Department's air emission compliance test protocol and 40 CFR Part 60 or other method approved or required by the Department; and
 - B. the days of violation shall be presumed to include the date of stack test and each and every day of operation thereafter until compliance is demonstrated under normal and representative process and operating conditions, except to the extent that the facility can prove to the satisfaction of the Department that there were intervening days during which no violation occurred or that the violation was not continuing in nature; and
 - C. the licensee may, upon the approval of the Department following the successful demonstration of compliance at alternative load conditions, operate under such alternative load conditions on an interim basis prior to a

demonstration of compliance under normal and representative process and operating conditions.

[06-096 CMR 115]

- (13) Notwithstanding any other provisions in the State Implementation Plan approved by the EPA or Section 114(a) of the CAA, any credible evidence may be used for the purpose of establishing whether a person has violated or is in violation of any statute, regulation, or Part 70 license requirement. [06-096 CMR 115]
- (14) The licensee shall maintain records of malfunctions, failures, downtime, and any other similar change in operation of air pollution control systems or the emissions unit itself that would affect emissions and that is not consistent with the terms and conditions of the air emission license. The licensee shall notify the Department within two (2) days or the next state working day, whichever is later, of such occasions where such changes result in an increase of emissions. The licensee shall report all excess emissions in the units of the applicable emission limitation. [06-096 CMR 115]
- (15) Upon written request from the Department, the licensee shall establish and maintain such records, make such reports, install, use and maintain such monitoring equipment, sample such emissions (in accordance with such methods, at such locations, at such intervals, and in such a manner as the Department shall prescribe), and provide other information as the Department may reasonably require to determine the licensee's compliance status. [06-096 CMR 115]

SPECIFIC CONDITIONS

(16) **Boilers**

A. Fuel

1. Total fuel use for the boiler units shall not exceed a combined 100,000,000 scf/yr of natural gas, based on a calendar year. [06-096 CMR 115, BPT]
2. Compliance shall be demonstrated by fuel records from the supplier showing the quantity and type of fuel delivered. Records of annual fuel use shall be kept on a monthly and calendar year basis. [06-096 CMR 115, BPT]

B. Emissions for each boiler unit shall not exceed the following:

| Emission Unit | Pollutant | lb/MMBtu | Origin and Authority |
|---------------|-----------|----------|----------------------|
| Boiler | PM | 0.05 | 06-096 CMR 115, BPT |

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

| Emission Unit | PM (lb/hr) | PM ₁₀ (lb/hr) | SO ₂ (lb/hr) | NO _x (lb/hr) | CO (lb/hr) | VOC (lb/hr) |
|----------------|---------------|-----------------------------|----------------------------|----------------------------|---------------|----------------|
| HO2-Boiler #1a | 0.18 | 0.18 | 0.01 | 0.34 | 0.28 | 0.02 |
| HO2-Boiler #1b | 0.18 | 0.18 | 0.01 | 0.34 | 0.28 | 0.02 |
| HO2-Boiler #2a | 0.10 | 0.10 | 0.01 | 0.20 | 0.17 | 0.01 |
| HO2-Boiler #2b | 0.10 | 0.10 | 0.01 | 0.20 | 0.17 | 0.01 |
| HO2-Boiler #2c | 0.10 | 0.10 | 0.01 | 0.20 | 0.17 | 0.01 |
| HO2-Boiler #2d | 0.10 | 0.10 | 0.01 | 0.20 | 0.17 | 0.01 |
| HO2-Boiler #2e | 0.10 | 0.10 | 0.01 | 0.20 | 0.17 | 0.01 |
| HO2-Boiler #3 | 0.05 | 0.05 | 0.01 | 0.10 | 0.08 | 0.01 |
| HO3-Boiler #1 | 0.23 | 0.23 | 0.01 | 0.44 | 0.37 | 0.02 |
| HO3-Boiler #2 | 0.23 | 0.23 | 0.01 | 0.44 | 0.37 | 0.02 |
| HO3-Boiler #3 | 0.23 | 0.23 | 0.01 | 0.44 | 0.37 | 0.02 |
| HO3-Boiler #4 | 0.23 | 0.23 | 0.01 | 0.44 | 0.37 | 0.02 |

D. Visible emissions from each stack serving the natural gas boiler units (Stack 1, 6 and 7) shall not exceed 10% opacity on a six (6) minute block average basis, except for no more than one (1) six (6) minute block averages in a continuous 3-hour period. [06-096 CMR 101]

(17) **Emergency Generators**

- A. The generators are each limited to 500 hours per year total operation, based on a calendar year. Compliance shall be demonstrated by a written log of all generator operating hours. [06-096 CMR 115, BPT]
- B. The diesel fuel sulfur content for the generators shall be limited to 0.0015% sulfur. 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 CMR 115, BPT]
- C. Emissions shall not exceed the following:

| Unit | Pollutant | lb/MMBtu | Origin and Authority |
|--------------|-----------|----------|----------------------------|
| HO1-Gen #1 | PM | 0.12 | 06-096 CMR 103(2)(B)(1)(a) |
| HO2-Gen #2 | PM | 0.12 | 06-096 CMR 103(2)(B)(1)(a) |
| HO3-Gen #3 | PM | 0.12 | 06-096 CMR 103(2)(B)(1)(a) |
| Generator #4 | PM | 0.10 | 06-096 CMR 115, BPT |
| Generator #5 | PM | 0.10 | 06-096 CMR 115, BPT |

D. 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) |
|--------------|-----------------------|------------------------------------|-----------------------------------|-----------------------------------|-----------------------|------------------------|
| HO1-Gen #1 | 0.19 | 0.19 | 0.01 | 7.13 | 1.54 | 0.58 |
| HO2-Gen #2 | 0.32 | 0.32 | 0.01 | 11.72 | 2.52 | 0.96 |
| HO3-Gen #3 | 0.12 | 0.12 | 0.01 | 4.47 | 0.96 | 0.36 |
| Generator #4 | 2.01 | 2.01 | 0.03 | 38.88 | 7.45 | 0.72 |
| Generator #5 | 2.01 | 2.01 | 0.03 | 38.88 | 7.45 | 0.72 |

E. Visible Emissions from each of the diesel generators 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. [06-096 CMR 101]

F. HO1-Gen #1 and HO2-Gen #2

HO1-Gen #1 and HO2-Gen #2 shall meet the applicable requirements of 40 CFR Part 60, Subpart IIII, including the following:

1. The generators 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. The diesel fuel fired in the generators 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 CFR §60.4207(b) and 06-096 CMR 115]
3. A non-resettable hour meter shall be installed and operated on each generator. [40 CFR §60.4209(a)]
4. The generators shall each 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]

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

6. If HO1-Gen #1 and/or HO2-Gen #2 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) for the respective generator(s), Unum 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)]

G. HO3-Gen #3

HO3-Gen #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. The generator 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.

If HO3-Gen #3 begins to operate or becomes 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 §63.6640(f)(4)(ii), Unum shall comply with all applicable requirements of 40 CFR Part 63, Subpart ZZZZ.

H. Generators #4 and #5

Generators #4 and #5 shall meet the applicable requirements of 40 CFR Part 63, Subpart ZZZZ if each respective generator 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 §63.6640(f)(4)(ii). Applicable requirements include the following:

1. No later than May 3, 2013, Unum shall meet the following operational limitations for each of the compression ignition emergency generators:
 - a. Change the oil and filter annually,
 - b. Inspect the air cleaner annually and replace as necessary, and
 - c. Inspect the hoses and belts annually and replace as necessary.

A log shall be maintained documenting compliance with the operational limitations.

[40 CFR §63.6603(a) and Table 2(d); and 06-096 CMR 115]

2. Unum 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, Unum must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil changes for the engine. The analysis program must be part of the maintenance plan for the engine. [40 CFR §63.6625(i)]
3. A non-resettable hour meter shall be installed and operated on each generator. [40 CFR §63.6625(f)]
4. Maintenance, Testing, and Non-Emergency Operating Situations
 - a. The generators shall each 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 §63.6640(f)(4)(ii) 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 §63.6640(f) and 06-096 CMR 115]

- b. Unum shall keep records that include maintenance conducted on the generators and the hours of operation of each 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 generators are operated during a period of demand response or 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 §63.6640(f)(4)(ii), Unum must 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 §63.6655(e) and (f)]
5. The generators shall be operated and maintained according to the manufacturer's emission-related written instructions or Unum shall develop a maintenance plan which must provide 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 CFR §63.6625(e)]
6. During periods of startup the facility must minimize the engine'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, after which time the non-startup emission limitations apply. [40 CFR §63.6625(h) & 40 CFR Part 63, Subpart ZZZZ Table 2d]
7. Unum shall submit an annual report containing the information in §63.6650(h)(1)(i) through (ix) for the generators. 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 §63.6650(h)]

(18) **Annual Emission Statement**

In accordance with *Emission Statements*, 06-096 CMR 137 (as amended), the licensee shall annually report to the Department the information necessary to accurately update the State's emission inventory by means of either:

- 1) A computer program and accompanying instructions supplied by the Department; or
- 2) A written emission statement containing the information required in 06-096 CMR 137.

The emission statement must be submitted as specified by the date in 06-096 CMR 137.

- (19) Unum shall notify the Department within 48 hours and submit a report to the Department on a quarterly basis if a malfunction or breakdown in any component causes a violation of any emission standard (38 M.R.S.A. §605).

DONE AND DATED IN AUGUSTA, MAINE THIS 3 DAY OF May, 2013.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY:

Patricia W. Aho for
PATRICIA W. AHO, COMMISSIONER

The term of this license shall be ten (10) years from the signature date above.

[Note: If a complete renewal application, as determined by the Department, is submitted prior to expiration of this license, then pursuant to Title 5 MRSA §10002, all terms and conditions of the license shall remain in effect until the Department takes final action on the renewal of the license.]

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: 10/22/2012

Date of application acceptance: 11/07/2012

Date filed with the Board of Environmental Protection:

This Order prepared by Allison M. Hazard, Bureau of Air Quality.



