President and Trustees of Bates College
Androscoggin County
Lewiston, Maine
A-373-71-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

The President and Trustees of Bates College (Bates College) was issued Air Emission License A-373-71-J-N on May 23, 2013, permitting the operation of emission sources associated with their educational facility.

Bates College has requested an amendment to their license for the following:

- The addition of a new 250 kW emergency generator designated Generator #7 (Campus Ave) and two small hot water boilers rated at 1.0 MMBtu/hr each at Campus Ave.
- The removal of a previously licensed generator, rated at 150 kW (2.0 MMBtu/hr) and licensed as Generator #7 (Garcelon Housing) in A-373-71-J-N. The unit was never installed and shall be removed from the license.
- An update to the hours/year restriction on the licensed emergency generators to be consistent with federal rules from 500 hrs/year, including emergency use, to 100 hrs/yr, excluding emergency use.
- A proposed increase in the 70,000 MMBtu/yr limit for the combination of natural gas and distillate fuel used in the non-steam plant units to 90,000 MMBtu/yr to account for facility heating needs.
- The addition of Renewable Fuel Oil (RFO) as a licensed allowable fuel in the steam plant boilers.
- Updates to the sulfur fuel requirement language for distillate fuel based on recently revised statutory language in 38 MRSA §603-A.

The equipment addressed in this license is located on the Bates College Campus in Lewiston, 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 Manuf. & Install.	Stack #
Campus Ave Boiler #1	1.0	980	natural gas	2015	8
Campus Ave Boiler #2	1.0	980	natural gas	2015	8

Generator

Equipment	Maximum Capacity (MMBtu/hr)	Power Output (kW)	Maximum Firing Rate (scf/hr)	Fuel Type	Date of Manuf. & Install.
Generator #7* (Campus Ave)	3.0	250	2983	natural gas	2015

* The new emergency generator is designated as Generator #7. The previously licensed Generator #7 for Garcelon Housing was never installed.

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
PM	6.6	7.6	1.0	100
PM_{10}	6.6	7.6	1.0	100
SO_2	52.5	57.5	5.0	100
NO_x	42.4	33.6	-8.8	100
CO	16.4	14.8	-1.6	100
VOC	3.4	2.6	-0.8	50
CO_2e	<100,000	<100,000	-	100,000

The Department has determined the modification is a minor modification and the application has been processed through *Major and Minor Source Air Emission License Regulations*, 06-096 CMR 115 (as amended).

With the annual fuel limits and the operating hour restrictions on the emergency generators, the facility is licensed below the major source thresholds for criteria pollutants and is considered a synthetic minor. With the annual fuel limits and the operating hour restriction on the emergency generators, the facility is 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, the applicant must control emissions from each unit to a level considered by the Department to represent Best Practical Treatment (BPT), as defined in *Definitions Regulation*, 06-096 CMR 100 (as amended). Separate control requirement categories exist for new and existing equipment.

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

Facility Description

Bates College has various fuel burning equipment on campus. The units can be categorized into steam plant boilers, non-steam plant boilers, and generators. The Cutten Steam Plant houses three larger boilers (29.4 MMBtu/hr each). The non-steam plant

boilers consist of smaller boilers, hot water heaters, and furnaces located throughout campus, ranging from 1 MMBtu/hr to 3.8 MMBtu/hr. The generators also vary in size and are at numerous locations around campus.

B. Campus Avenue Boilers #1 and #2

Bates College has proposed to install two new small natural gas-fired hot water boilers at Campus Avenue. Each boiler is rated at 1.0 MMBtu/hr (980 scf/hr) and fires natural gas. Both units were manufactured in 2015 and will exhaust through a common stack (Stack 8).

1. BACT Findings

Based on the size of the units, the fuel type, and each unit's integrated control system to optimize operational efficiency, BACT for each boiler shall be the firing of natural gas and efficient operation of the new units.

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

PM/PM_{10}	–	0.05 lb/MMBtu based on 06-096 CMR 115, BACT
SO_2	–	0.6 lb/MMscf based on AP-42, Table 1.4-2, dated 7/98
NO_x	–	100 lb/MMscf based on AP-42, Table 1.4-1, dated 7/98
CO	–	84 lb/MMscf based on AP-42, Table 1.4-1, dated 7/98
VOC	–	5.5 lb/MMscf based on AP-42, Table 1.4-2, dated 7/98
Opacity	–	06-096 CMR 101

The fuel heating value was assumed to be 1020 Btu/scf for natural gas.

The BACT 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)
Campus Ave Boiler #1 ***natural gas***	0.05	0.05	0.0006	0.1	0.08	0.005
Campus Ave Boiler #2 ***natural gas***	0.05	0.05	0.0006	0.1	0.08	0.005

Visible emissions from each boiler shall not exceed 10% opacity on a 6-minute block average, except for no more than one (1) six (6) minute block average in a 3-hour period.

The fuel used in Campus Ave Boilers #1 and #2 shall be included in the non-steam plant fuel limit.

2. Periodic Monitoring

   Periodic monitoring for the boilers shall be included in the recordkeeping for the non-steam plant boilers.

3. 40 CFR Part 60, Subpart Dc

   Due to the size of the units, the Campus Ave Boilers #1 and #2 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.

4. 40 CFR Part 63, Subpart JJJJJJ

   Due to the firing of natural gas and the size of the units, the Campus Ave Boilers #1 and #2 are not subject to the *National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources* (40 CFR Part 63 Subpart JJJJJJ). Gas-fired boilers are exempt from 40 CFR Part 63, Subpart JJJJJJ.

C. Non-Steam Plant Fuel Limit

Bates College has proposed an increase to the fuel limit in the non-steam plant boilers to account for facility heating needs. License A-373-71-J-N (May 23, 2013) established a 70,000 MMBtu/yr limit for the combination of natural gas and distillate fuel used in the non-steam plant units. The fuel limit proposal increases the limit from 70,000 MMBtu/yr to 90,000 MMBtu/yr, based on a 12 month rolling total. The 90,000 MMBtu/yr limit is equivalent to 642,857 gallons/year of distillate fuel if no natural gas is fired and 88,235,294 scf/yr of natural gas if no distillate fuel is fired.

Bates College shall continue to maintain records of fuel use for the non-steam plant units on a monthly basis, documenting the amount and type of fuel used, the Btu value of the fuel, and the monthly and 12 month rolling total fuel heat input Btu calculations.

D. Steam Plant Fuel

Bates College proposed the addition of Renewable Fuel Oil (RFO) as an allowable fuel in the steam plant boilers. RFO is a cellulosic heating oil derived from wood, in which the process gasifies wood and then condenses it back into a liquid that can be burned similar to fuel oil. The three steam plant boilers, Boilers #1, #2, and #3, are currently licensed to fire #2 fuel oil (distillate fuel) and natural gas. Bates College has requested RFO be added to the allowable fuels for these boilers.

RFO has similar properties and performance as distillate fuel. The sulfur content of RFO is expected to be less than 0.05% sulfur by weight per ASTM Test Method D4294. Facilities located in New Hampshire have recently begun firing the fuel in their boilers. Information was submitted stating that RFO supplied by the company Ensyn shall comply with ASTM D7544, Standard Specification for Pyrolysis Liquid Biofuel with the following specifications:

RFO Specifications

Parameter	Test Method	Units
Gross Heat of Combustion	ASTM D240	6450 Btu/lb min
Water Content	ASTM E203	30 wt% max
Pyrolysis Solids Content	ASTM D7579	2.5 wt% max
Kinematic Viscosity, at 40°C	ASTM D445	125 centistokes (cSt) max
Density, at 20°C	ASTM D4052	9.2 to 10.8 lb/US gallon
Sulfur Content	ASTM D4294	0.05 wt% max
Ash Content	ASTM D482	0.25 wt% max
pH	ASTM E70	Report
Flash Point	ASTM D93, procedure B	113°F min
Pour Point	ASTM D97	16°F

This license clarifies the allowable fuel for the steam plant to include distillate fuel, RFO, and natural gas. Bates College did not request a change to the steam plant boilers' emission limits or fuel limits.

E. Generator #7

Bates College has proposed to install a new emergency generator at Campus Avenue. Emergency generators are generator sets with each gen set consisting of an engine and an electrical generator. The proposed emergency generator has an engine with an input rating of 3.04 MMBtu/hr and fires natural gas, with a specification firing rate of 2983 scf/hr. The 250 kW unit was manufactured in 2015.

The proposed unit shall be designated as Generator #7. The previous license included a Generator #7 at Garcelon Housing (2.0 MMBtu/hr) which was never installed and is no longer considered licensed.

1. BACT Findings

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

PM/PM_{10} – 0.00991 lb/MMBtu, AP-42, Section 3.3-2 for 4-stroke lean-burn engines (dated 7/2000)

SO_2 – 0.000588 lb/MMBtu, AP-42, Section 3.3-2 for 4-stroke lean-burn engines (dated 7/2000)

NO_X – 4.08 lb/MMBtu, AP-42, Section 3.3-2 for 4-stroke lean-burn engines (dated 7/2000)

CO – 0.317 lb/MMBtu, AP-42, Section 3.3-2 for 4-stroke lean-burn engines (dated 7/2000)

VOC – 0.118 lb/MMBtu, AP-42, Section 3.3-2 for 4-stroke lean-burn engines (dated 7/2000)

Opacity – 06-096 CMR 115, BACT

The BACT emission limits for the generator are the following:

Unit	PM* (lb/hr)	PM_{10} (lb/hr)	SO_2 (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Generator #7 (3.04 MMBtu/hr) Natural gas	0.03	0.03	0.002	12.41	0.96	0.36

* Table Note: 06-096 CMR 103 is applicable to Generator #7 since the unit is rated at 3 MMBtu/hr. However, the 0.12 lb/MMBtu requirement in 06-096 CMR 103 is met through the very low PM lb/hr limit established from firing natural gas.

Visible emissions from Generator #7 shall not exceed 10% opacity on a 6-minute block average, except for no more than one (1) six (6) minute block average in a 3-hour period.

2. 40 CFR Part 60, Subpart JJJJ

The federal regulation 40 CFR Part 60, Subpart JJJJ, *Standards of Performance for Spark Ignition Internal Combustion Engines (SI ICE)* is applicable to the emergency engine listed above since the unit was ordered after June 12, 2006 and manufactured after January 1, 2009. By meeting the requirements of Subpart JJJJ, the unit also meets the requirements found in the *National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*, 40 CFR Part 63, Subpart ZZZZ.

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 §60.4243(d) and §60.4248]

b. 40 CFR Part 60, Subpart JJJJ Requirements:

(1) Manufacturer Certification Requirement
The engine shall be certified by the manufacturer as meeting the emission standards for new nonroad spark ignition engines found in 40 CFR Part 60, Subpart JJJJ, Table 1.

(2) Non-Resettable Hour Meter Requirement
A non-resettable hour meter shall be installed and operated on the engine. [40 CFR §60.4237]

(3) Operation and Maintenance Requirement
The engine shall be operated and maintained according to the manufacturer's written instructions or procedures developed by facility that are approved by the engine manufacturer. Bates College may only change those settings that are permitted by the manufacturer. [40 CFR §60.4243]

(4) Annual Time Limit for Maintenance and Testing
As an emergency engine, the unit shall be limited to 100 hours/year for maintenance and testing. The emergency engine may operate up to 50 hours per year in non-emergency situations, but those 50 hours are included in the 100 hours allowed for maintenance and testing. The 50 hours for non-

emergency use cannot be used for peak shaving or to generate income for a facility to supply power to an electric grid or otherwise supply power as part of a financial arrangement with another entity. [40 CFR §60.4243(d)]

(5) Recordkeeping

Bates College 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 engine is operated during a period of demand response or deviation from standard voltage or frequency, or to supply power during a non-emergency situation as part of a financial arrangement with another entity as specified in §60.4243(d)(3)(i), Bates College 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 §60.4245(b)]

(6) Annual Reporting Requirement for Demand Response Availability Over 15 Hours Per Year (for engines greater than 100 brake hp)

If Bates College 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 §60.4243(d)(3)(i), the facility shall submit an annual report containing the information in §60.4245(e)(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:

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 §60.4245(e)]

F. Generators Operating Hours

In order to be consistent with federal regulations, the emergency generators at Bates College shall each be limited to 100 hours per year of operation for licensing and fee calculation purposes, with no operating hours restrictions during emergency situations. This is an update from the previous license which limited each unit to 500 hours/year including emergency situations.

G. Revised Statutory Language for Fuel Oil Sulfur Content Requirements

Previously, the statutory language of 38 MRSA §603-A limited facilities firing distillate fuel (kerosene or #2 fuel oil) to a sulfur content of 0.005% beginning July 1, 2016 and 0.0015% beginning January 1, 2018.

The Maine Legislature revised 38 MRSA §603-A during the spring 2015 legislative session to more consistently align the sulfur content levels and applicability dates with the levels and dates being proposed in other New England states. The new requirements are now in effect and state that: A person may not import, distribute or offer for sale a distillate fuel beginning July 1, 2018 with a sulfur content greater than 0.0015% by weight.

The change in wording removes the interim sulfur content of 0.005% for distillate fuel and pushes the deadline for compliance with the lower sulfur content fuel back to July 1, 2018 for all fuel types. In addition, since the requirement to comply with the sulfur limit is shifted from the consumer to the fuel oil distributer, facilities who take delivery of higher sulfur fuel prior to July 1, 2018 may continue to fire that fuel until depleted.

The conditions in Bates College license will be revised to reflect the most recent statutory language.

H. Annual Emissions

1. Total Annual Emissions

Bates College shall be restricted to the following annual emissions, on a 12 month rolling total. The tons per year limits were calculated based on the 140,000 MMBtu/year limit for the steam plant boilers, the 90,000 MMBtu/year limit for the non-steam plant boilers, and the 100 hours/year operation restriction for each emergency generator.

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
Steam Plant Boilers #1-#3	2.1	2.1	35.0	14.0	10.5	2.1
Non-Steam Plant Boilers	5.4	5.4	22.5	16.2	3.71	0.24
Generator #1	0.02	0.02	negl.	0.57	0.12	0.05
Generator #2	0.007	0.007	negl.	0.24	0.05	0.02
Generator #3	0.02	0.02	negl.	0.66	0.14	0.05
Generator #4	0.008	0.008	negl.	0.31	0.07	0.03
Generator #5	0.02	0.02	negl.	0.75	0.16	0.06
Generator #6	0.0005	0.0005	negl.	0.22	0.02	0.01
Generator #7	0.001	0.001	negl.	0.62	0.05	0.02
Total TPY	**7.6**	**7.6**	**57.5**	**33.6**	**14.8**	**2.6**

Table Notes: Worst case scenarios were used to calculate tons/year emissions. From the steam plant boilers, distillate fuel firing was used for PM, SO_2, NO_X, and VOC emissions and natural gas firing was used for CO emissions. For the non-steam plant boilers, distillate fuel firing was used for PM, SO_2, and NO_X emissions and natural gas firing was used for CO and VOC emissions.

2. Greenhouse Gases

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

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

- 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

Bates College previously submitted an ambient air quality impact analysis for air emission license A-373-74-D-A/R (dated April 6, 1995) demonstrating that emissions from the facility, in conjunction with all other sources, do not violate Ambient Air Quality Standards (AAQS). An additional air quality impact 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,
- 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-373-71-K-A subject to the conditions found in Air Emission License A-373-71-J-N 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 condition (16)(A) in air emission license A-373-71-J-N (issued May 24, 2013):

(16) **Boilers #1, #2, and #3 – Steam Plant**

A. Fuels

1. Boilers #1, #2, and #3 may fire distillate fuel, natural gas, or Renewable Fuel Oil (RFO) with a total fuel heat input not to exceed 140,000 MMBtu/year, based on a 12 month rolling total. [06-096 CMR 115, BACT]
2. The RFO shall meet the specifications of ASTM D7544 as documented by the supplier. [06-096 CMR 115, BACT]
3. Prior to July 1, 2018, the facility shall fire distillate fuel with a maximum sulfur content not to exceed 0.5% by weight. [06-096 CMR 115, BPT]

4. Beginning July 1, 2018, the facility shall not purchase or otherwise obtain distillate fuel with a maximum sulfur content that exceeds 0.0015% by weight (15 ppm). [06-096 CMR 115, BPT]
5. Compliance shall be demonstrated by:
   a. fuel records from the supplier(s) showing the quantity, type, and the percent sulfur of the fuel delivered (if applicable); and
   b. documentation of the amount and type of fuel(s) used on a monthly basis, the Btu value of the fuel(s), and the monthly and 12 month rolling total fuel heat input Btu calculations.

   [06-096 CMR 115, BPT]

The following shall replace condition (17)(A) in air emission license A-373-71-J-N (issued May 24, 2013):

(17) **Non-Steam Plant Boilers**

A. Fuels

1. The non-steam plant boilers may fire distillate fuel or natural gas with a total fuel heat input not to exceed 90,000 MMBtu/year, based on a 12 month rolling total. [06-096 CMR 115, BACT]
2. Prior to July 1, 2018, the facility shall fire distillate fuel with a maximum sulfur content not to exceed 0.5% by weight. [06-096 CMR 115, BPT]
3. Beginning July 1, 2018, the facility shall not purchase or otherwise obtain distillate fuel with a maximum sulfur content that exceeds 0.0015% by weight (15 ppm). [06-096 CMR 115, BPT]
4. Compliance shall be demonstrated by:
   a. fuel records from the supplier(s) showing the quantity, type, and the percent sulfur of the fuel delivered (if applicable); and
   b. documentation of the amount and type of fuel(s) used on a monthly basis, the Btu value of the fuel(s), and the monthly and 12 month rolling total fuel heat input Btu calculations.

   [06-096 CMR 115, BPT]

The following shall replace condition (17)(C) in air emission license A-373-71-J-N (issued May 24, 2013):

(17) **Non-Steam Plant Boilers**

C. Emissions shall not exceed the following: [09-096 CMR115 BPT/BACT]

Unit	Fuel	PM (lb/hr)	PM_{10} (lb/hr)	SO_2 (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Furnace #10 Underhill Arena (2.5 MMBtu/hr)	nat'l gas	0.13	0.13	0.002	0.25	0.21	0.01
Furnace #11 Underhill Arena (2.5 MMBtu/hr)	nat'l gas	0.13	0.13	0.002	0.25	0.21	0.01
Boiler # 12 Rzasa House/Villages (2.5 MMBtu/hr)	distillate fuel	0.30	0.30	1.25	0.90	0.09	0.01
	nat'l gas	0.13	0.13	0.002	0.25	0.21	0.01
Boiler # 13 Rzasa House/Villages (2.5 MMBtu/hr)	distillate fuel	0.30	0.30	1.25	0.90	0.09	0.01
	nat'l gas	0.13	0.13	0.002	0.25	0.21	0.01
Boiler # 14 Rzasa House/Villages (2.5 MMBtu/hr)	distillate fuel	0.30	0.30	1.25	0.90	0.09	0.01
	nat'l gas	0.13	0.13	0.002	0.25	0.21	0.01
Boiler #16 Chase Hall/Commons (3.8 MMBtu/hr)	nat'l gas	0.19	0.19	0.002	0.37	0.31	0.02
Boiler #17 Parker Hall (1.8 MMBtu/hr)	distillate fuel	0.22	0.22	0.90	0.65	0.06	0.004
Boiler #19 Smith Hall (1.8 MMBtu/hr)	distillate fuel	0.22	0.22	0.90	0.65	0.06	0.004
Merrill Boiler Merrill Gym (1.2 MMBtu/hr)	nat'l gas	0.06	0.06	0.001	0.12	0.10	0.01
Ladd Boiler Ladd Hall (1.5 MMBtu/hr)	nat'l gas	0.08	0.08	0.001	0.15	0.12	0.008
Pettengill Boiler #1 Pettengill Hall (1.1 MMBtu/hr)	nat'l gas	0.06	0.06	0.001	0.11	0.09	0.005
Pettengill Boiler #2 Pettengill Hall (1.1 MMBtu/hr)	nat'l gas	0.06	0.06	0.001	0.11	0.09	0.005
Campus Ave Boiler #1 (1.0 MMBtu/hr)	nat'l gas	0.05	0.05	0.0006	0.1	0.08	0.005
Campus Ave Boiler #2 (1.0 MMBtu/hr)	nat'l gas	0.05	0.05	0.0006	0.1	0.08	0.005

The following shall replace condition (18)(A) in air emission license A-373-71-J-N (issued May 24, 2013):

(18) **Emergency Generators #1-#5 (Diesel Units)**

A. Diesel Emergency Generators #1 - #5 are each limited to 100 hours per year total operation, excluding operating hours during emergency situations, based on a 12-month rolling total. Compliance shall be demonstrated by a written log of all generator operating hours. [06-096 CMR 115]

The following shall replace condition (19) in air emission license A-373-71-J-N (issued May 24, 2013):

(19) **Emergency Generators #6 and #7 (Natural Gas Units)**

A. Natural gas Emergency Generators #6 and #7 are each limited to 100 hours per year total operation, excluding operating hours during emergency situations, based on a 12-month rolling total. Compliance shall be demonstrated by a written log of all generator operating hours. [06-096 CMR 115]

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

Unit	PM (lb/hr)	PM_{10} (lb/hr)	SO_2 (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Generator #6 -Carnegie Hall (1.1 MMBtu/hr) nat'l gas	0.01	0.01	0.001	4.49	0.35	0.13
Generator #7 -Campus Ave (3.04 MMBtu/hr) nat'l gas	0.03	0.03	0.002	12.41	0.96	0.36

C. Visible Emissions

Visible Emissions from each of the natural gas emergency generators shall not exceed 10% opacity on a 6 minute block average, except for no more than one (1) six (6) minute block average in a 3 hour period. [06-096 CMR 115, BACT]

D. Emergency Generators #6 and #7 shall meet the applicable requirements of 40 CFR Part 60, Subpart JJJJ, including the following:

1. Manufacturer Certification
   The engines shall be certified by the manufacturer as meeting the emission standards for new nonroad spark ignition engines found in 40 CFR Part 60, Subpart JJJJ, Table 1.

2. Non-Resettable Hour Meter
   A non-resettable hour meter shall be installed and operated on each engine. [40 CFR §60.4237 and 06-096 CMR 115, BPT]

3. Annual Time Limit for Maintenance and Testing
   a. As emergency engines, the units 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 §60.4243(d)(3)(i) are met). The limits are based on a calendar year. Compliance shall be demonstrated by records (electronic or written log) of all engine operating hours. [40 CFR §60.4243(d) and 06-096 CMR 115]

   b. Bates College shall keep records that include maintenance conducted on the engines 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 engines are 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 §60.4243(d)(3)(i), Bates College shall keep records of the notification of the emergency situation, and the date, start time, and end time of engine operation for these purposes.

4. Operation and Maintenance
   The engines shall be operated and maintained according to the manufacturer's written instructions or procedures developed by Bates College that are approved by the engine manufacturer. Bates College may only change those settings that are permitted by the manufacturer. [40 CFR §60.4243]

5. Annual Reporting For Demand Response Availability Over 15 Hours Per Year (for engines greater than 100 brake hp)
   If Bates College 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 §60.4243(d)(3)(i), the facility shall submit an annual report containing the information in §60.4245(e)(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:

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 §60.4245(e)]

DONE AND DATED IN AUGUSTA, MAINE THIS 3 DAY OF December , 2015.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: Marc Allen Robert Cone for
AVERY T. DAY, ACTING COMMISSIONER

The term of this amendment shall be concurrent with the term of Air Emission License A-373-71-J-N.

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: August 10, 2015
Date of application acceptance: August 12, 2015

Date filed with the Board of Environmental Protection:

Filed
DEC 04 2015
State of Maine
Board of Environmental Protection

This Order prepared by Kathleen E. Tarbuck, Bureau of Air Quality.