



STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION



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**MAINE MARITIME ACADEMY
HANCOCK COUNTY
CASTINE, MAINE
A-78-71-M-R/A (SM)**

**DEPARTMENTAL
FINDINGS OF FACT AND ORDER
AIR EMISSION LICENSE
RENEWAL/AMENDMENT**

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) of Castine, Maine has applied to renew and amend their Air Emission License permitting the operation of emission sources associated with their college. MMA has also requested an amendment to their license in order to install a new generator and replace some of its existing boilers. The facility has also converted the fuel oil fired in some of the boilers from #4 fuel oil to distillate oil being fired in all boilers.

B. Emission Equipment

The following equipment at MMA is addressed in this air emission license:

Fuel Burning Equipment

Equipment	Maximum Capacity (MMBTU/hr)	Fuel Type, *	Maximum Firing Rate (i.e. gal/hr)	Date of Manufacture	Stack Height (ft)
Curtis Boiler #1A **	3.4	distillate	30	2014	56.3
Curtis Boiler #2A **	3.4	distillate	30	2014	56.3
Curtis Boiler #3A **	3.4	distillate	30	2014	56.3
Dismukes Boiler #1	1.3	distillate	12	2011	56.5
Dismukes Boiler #2	1.3	distillate	12	2011	56.5

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PRESQUE ISLE, MAINE 04769
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Andrews Boiler #1	5.2	distillate	35	1983	28
Andrews Boiler #2 **	3.4	distillate	30	2014	29
Student Union #1	2.8	distillate	29	2004	43
Student Union #2	2.8	distillate	29	2004	43
Library Boiler #1A **	1.8	distillate	16	2013	42
Library Boiler #2A **	1.8	distillate	16	2013	42

* MMA will use fuel which meets the criteria in ASTM D396 for #2 fuel oil.
** denotes new emission equipment to this air license which have replaced previously licensed units.

Electrical Generation Equipment

Equipment	Maximum Capacity (MMBtu/hr)	Firing Rate (gal/hr)	Power Output (kW)	Date of Manufacture	Fuel Type, % sulfur
Generator (Curtis) #1A	1.7	12.3	175	1973	Distillate, 0.0015%
Generator (Dock) #2A	0.8	5.6	80	1996	Distillate, 0.0015%
Generator #3A (Alfond)	0.6	4.6	65	1995	Distillate, 0.0015%
Generator #4A (Library)	0.6	4.6	65	1995	Distillate, 0.0015%
Generator #5A (Leavitt) *	1.5	602 ft ³ /hr	100	2007	Distillate, 0.0015%

* new emission unit

Application Classification

The application for MMA includes the licensing of replacement boilers; however, the total facility-wide maximum capacity of all boilers combined is less than what was previously licensed. Also, the facility-wide fuel limit of 500,000 gallons per year will not change and the amendment will not increase emissions of any pollutant. Therefore, this modification is determined to be a renewal of licensed emission units and a minor modification to address the boiler and generator changes that have occurred since the last renewal. This license has been processed through *Major and Minor Source Air Emission License Regulations*, 06-096 Code of Maine Rules (CMR) 115 (as amended). With the fuel limit on the boilers and the operating hours restriction on the emergency generators, the facility is licensed below the major source thresholds for criteria pollutants and is considered a synthetic minor. Furthermore, with the limits established in this license, 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 06-096 CMR 100 of the Department regulations. Separate control requirement categories exist for new and existing equipment as well as for those sources located in designated non-attainment areas.

B. New Equipment

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 of the Department's regulations. BACT is a top-down approach to selecting air emission controls considering economic, environmental and energy impacts.

New Boilers (Library Boiler #1A, Library Boiler #2A, Andrews Boiler #2)

MMA has requested to install several new boilers (Curtis Boiler #1a, Curtis Boiler #2a, Curtis Boiler #3a, Library Boiler #1A, Library Boiler #2A, and Andrews Boiler #2). The maximum design capacities of the replacement boilers are less than the units that have been removed due to the higher efficiencies and the older units being over needed capacity. The new units along with their respective maximum design capacities are listed in the table in Section 1.B of this license. The previously licensed boilers being replaced by these new units have been removed from service. MMA operates the new boilers for building heat and hot water purposes. The boilers are planned for installation in 2014. The three Curtis boilers exhaust through a common 56.3 foot stack, the two Library Boilers exhaust through a common stack at a height of 42 feet, and the Andrews building boiler exhaust from a stack at a height of 29 feet above ground level.

Due to the size of each of the boilers, they 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. BACT/BPT Findings

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

#2 Fuel Oil

- PM/PM₁₀ – 0.08 lb/MMBtu based on BACT Guidance document dated March 8, 2002
- SO₂ – based on firing distillate fuel (ASTM D396 compliant #2 fuel oil (0.5% sulfur by weight)); 0.5 lb/MMBtu
- NO_x – 20 lb/1000 gal based on AP-42, Table 1.3-1, dated 5/10
- CO – 5 lb/1000 gal based on AP-42, Table 1.3-1, dated 5/10
- VOC – 0.34 lb/1000 gal based on AP-42, Table 1.3-3, dated 5/10
- Opacity – 06-096 CMR 101 or previous BACT

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)
Curtis Boiler #1A	0.3	0.3	1.8	0.5	0.2	0.1
Curtis Boiler #2A	0.3	0.3	1.8	0.5	0.2	0.1
Curtis Boiler #3A	0.3	0.3	1.8	0.5	0.2	0.1
Library Boiler #1A	0.2	0.2	0.9	0.3	0.1	0.1
Library Boiler #2A	0.2	0.2	0.9	0.3	0.1	0.1
Andrews Boiler #2	0.3	0.3	1.8	0.5	0.2	0.1

Visible emissions from each boiler shall not exceed 20% opacity on a 6 minute block average, except for no more than one (1) six (6) minute block average in a 3 hour period.

MMA shall be limited to a total facility-wide fuel oil limit of 500,000 gallons per year on a calendar year basis.

Prior to July 1, 2016 or by the date otherwise stated in 38 MRSA §603-A(2)(A)(3), the #2 fuel oil fired at the facility shall be ASTM D396 compliant #2 fuel oil (maximum sulfur content of 0.5% by weight). Per 38 MRSA §603-A(2)(A)(3), beginning July 1, 2016 or on the date specified in the statute, the facility shall fire #2 fuel oil with a maximum sulfur content limit of 0.005% by weight (50 ppm), and beginning January 1, 2018 or on the date specified in the statute, the facility shall fire #2 fuel oil with a maximum sulfur content limit of 0.0015% by weight (15 ppm). The specific dates contained in this paragraph reflect the current dates in the statute as of the effective date of this

license; however, if the statute is revised, the facility shall comply with the revised dates upon promulgation of the statute revision.

2. Periodic Monitoring

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

3. 40 CFR Part 63 Subpart JJJJJ

The Curtis Boilers, Library Boilers, and Andrews Boiler are subject to the *National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources* (40 CFR Part 63 Subpart JJJJJ). The units are considered new boilers rated less than 10 MMBtu/hr.

A summary of the currently applicable federal 40 CFR Part 63 Subpart JJJJJ requirements is listed below. At this time, the Department has not taken delegation of this area source MACT (Maximum Achievable Control Technology) rule promulgated by EPA, however MMA is still subject to the requirements. Notification forms and additional rule information can be found on the following website:

<http://www.epa.gov/ttn/atw/boiler/boilerpg.html>.

a. Compliance Dates, Notifications, and Work Practice Requirements

i. Initial Notification of Compliance

An Initial Notification submittal to EPA was due January 20, 2014.
[40 CFR Part 63.11225(a)(2)]

ii. Boiler Tune-Up Program

(a) A boiler tune-up program shall be implemented to include the initial tune-up of applicable boilers. [40 CFR Part 63.11196(a)(1)]

(b) The boiler tune-up program, conducted to demonstrate continuous compliance, shall be performed as specified below:

1. As applicable, inspect the burner, and clean or replace any component of the burner as necessary. Delay of the burner inspection until the next scheduled shutdown is permitted;

not to exceed 36 months from the previous inspection for boilers greater than 5 MMBtu/hr or 72 months from the previous inspection for oil fired boilers less than 5 MMBtu/hr, boilers with oxygen trim system, seasonal boilers, and limited use boilers. [40 CFR Part 63.11223(b)(1)]

2. Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern, consistent with the manufacturer's specifications. [40 CFR Part 63.11223(b)(2)]
3. Inspect the system controlling the air-to-fuel ratio, as applicable, and ensure it is correctly calibrated and functioning properly. Delay of the inspection until the next scheduled shutdown is permitted; not to exceed 36 months from the previous inspection for boilers greater than 5 MMBtu/hr or 72 months from the previous inspection for oil fired boilers less than 5 MMBtu/hr, boilers with oxygen trim system, seasonal boilers, and limited use boilers. [40 CFR Part 63.11223(b)(3)]
4. Optimize total emissions of CO, consistent with manufacturer's specifications. [40 CFR Part 63.11223(b)(4)]
5. Measure the concentration in the effluent stream of CO in parts per million by volume (ppmv), and oxygen in volume percent, before and after adjustments are made (measurements may be either on a dry or wet basis, as long as it is the same basis before and after the adjustments are made). Measurements may be taken using a portable CO analyzer. [40 CFR Part 63.11223(b)(5)]
6. If a unit is not operating on the required date for a tune-up, the tune-up must be conducted within 30 days of start-up. [40 CFR Part 63.11223(b)(7)]

(c) After conducting the initial boiler tune-up, a Notification of Compliance Status shall be submitted to EPA no later than July 19, 2014. [40 CFR Part 63.11225(a)(4) and 40 CFR Part 63.11214(b)]

(d) The facility shall implement a boiler tune-up program after the initial tune-up and initial compliance report (called a Notification of Compliance Status) has been submitted.

1. Each tune-up shall be conducted at a frequency specified by the rule and based on the size, age, and operations of the boiler.

Boiler Category	Tune-Up Frequency
<i>New and Existing Oil, Biomass, and Coal fired Boilers with less frequent tune up requirements</i> With a heat input capacity of <5MMBtu/hr	Every 5 years

[40 CFR Part 63.11223(a) and Table 2]

2. The tune-up compliance report shall be maintained onsite and, if requested, submitted to EPA. The report shall contain the concentration of CO in the effluent stream (ppmv) and oxygen in volume percent, measured at high fire or typical operating load, before and after the boiler tune-up, a description of any corrective actions taken as part of the tune-up of the boiler, and the types and amounts of fuels used over the 12 months prior to the tune-up of the boiler. [40 CFR Part 63.11223(b)(6)] The compliance report shall also include the company name and address; a compliance statement signed by a responsible official certifying truth, accuracy, and completeness; and a description of any deviations and corrective actions. [40 CFR Part 63.11225(b)]

b. Recordkeeping

Records shall be maintained consistent with the requirements of 40 CFR Part 63 Subpart JJJJJ including the following [40 CFR Part 63.11225(c)]: copies of notifications and reports with supporting compliance documentation; identification of each boiler, the date of tune-up, procedures followed for tune-up, and the manufacturer's specifications to which the boiler was tuned; documentation of fuel type(s) used monthly by each boiler; the occurrence and duration of each malfunction of the boiler; and actions taken during periods of malfunction to minimize emissions and actions taken to restore the malfunctioning boiler to its usual manner of operation. Records shall be in a form suitable and readily available for expeditious review.

Generator #5A (Leavitt)

MMA installed an emergency generator at the Leavitt Building (Generator #5A). The propane fired unit has a maximum design capacity of 1.5 MMBtu/hr (100kW) and a date of manufacture of 2007.

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

PM/PM₁₀ - 0.08 lb/MMBtu from 06-096 CMR 115, BACT
SO₂ - 0.00056 lb/MMBtu from AP-42 dated 7/00
NO_x - 2.3 lb/MMBtu from AP-42 dated 7/00
CO - 3.5 lb/MMBtu from AP-42 dated 7/00
VOC - 0.093lb/MMBtu from AP-42 dated 7/00
Opacity - 06-096 CMR 101

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 #5A (Leavitt) 1.5 MMBtu/hr	0.1	0.1	0.1	3.4	5.2	0.1

Visible emissions from the propane generator (Generator #5A) shall not exceed 10% opacity on a 6-minute block average, except for no more than two (2) six (6) minute block averages in a 3-hour period.

1. 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 emergency generators if manufactured after January 1, 2009. The unit (Generator #5A) was manufactured in 2007 and therefore is not subject to this rule.

2. 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 not applicable to Generator #5A (Leavitt) because the unit operates at a school and therefore the unit is categorized as an institutional emergency engine and the unit does not operate 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).

Operation of emergency generators such that the unit exceeds 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), would cause the generator(s) to be subject to 40 CFR Part 63, Subpart ZZZZ, and shall comply with all applicable requirements.

C. Existing Equipment

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.

Existing Boilers: (Dismukes Boiler #1, Dismukes Boiler #2, Andrews Boiler #1, Student Union Boiler #1, Student Union Boiler #2)

The existing boilers listed above all fire #2 distillate fuel and have maximum heat input capacities ranging from 1.3 MMBtu/hr to 5.2 MMBtu/hr. The boilers are used to supply heat and hot water for the facility's buildings and dorms. The regulated pollutants emitted from these boilers are particulate matter (PM), particulate matter with a diameter smaller than ten microns (PM₁₀), sulfur dioxide (SO₂), nitrogen oxides (NO_x), carbon monoxide (CO), and volatile organic compounds (VOC). Based on the size of the boilers, the Department determines that any additional pollution control devices would be economically unjustified.

40 CFR Part 60, Subpart Dc. (NSPS requirements)

All existing boilers have a maximum design heat input capacity of less than 10 MMBtu/hr and are therefore not subject to the New Source Performance Standards (NSPS) Subpart Dc for steam generating units greater than 10 MMBtu/hr manufactured after June 9, 1989.

A summary of the BPT analysis for the existing boilers is the following:

1. BPT Findings

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

#2 Fuel Oil

- PM/PM₁₀ – 0.12 lb/MMBtu based on BPT and 06-096 CMR 103 (for units greater than 3.0 MMBtu/hr)
- SO₂ – based on firing ASTM D396 compliant #2 fuel oil (0.5% sulfur); 0.5 lb/MMBtu
- NO_x – 20 lb/1000 gal based on AP-42, Table 1.3-1, dated 5/10
- CO – 5 lb/1000 gal based on AP-42, Table 1.3-1, dated 5/10
- VOC – 0.34 lb/1000 gal based on AP-42, Table 1.3-3, dated 5/10
- Opacity – 06-096 CMR 101 or previous BACT

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)
Dismukes Boiler #1	0.2	0.2	0.7	0.2	0.1	0.1
Dismukes Boiler #2	0.2	0.2	0.7	0.2	0.1	0.1
Andrews Boiler #1	0.7	0.7	2.7	0.8	0.2	0.1
Student Union #1	0.4	0.4	1.4	0.4	0.1	0.1
Student Union #2	0.4	0.4	1.4	0.4	0.1	0.1

Visible emissions from each boiler firing fuel oil shall not exceed 20% opacity on a 6 minute block average, except for no more than one (1) six (6) minute block average in a 3 hour period.

BPT for boilers shall limit facility-wide distillate fuel use to 500,000 gallons per year on a calendar year basis.

Prior to July 1, 2016 or by the date otherwise stated in 38 MRSA §603-A(2)(A)(3), the #2 fuel oil fired at MMA shall be ASTM D396 compliant #2 fuel oil (maximum sulfur content of 0.5% by weight). Per 38 MRSA §603-A(2)(A)(3), beginning July 1, 2016 or on the date specified in the statute, the facility shall fire distillate fuel with a maximum sulfur content limit of 0.005% by weight (50 ppm), and beginning January 1, 2018 or on the date specified in the statute, the facility shall fire #2 fuel oil with a maximum sulfur content limit of 0.0015% by weight (15 ppm). The specific dates contained in this paragraph reflect the current dates in the statute as of the effective date of this license; however, if the statute is revised, the facility shall comply with the revised dates upon promulgation of the statute revision.

2. Periodic Monitoring

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

3. 40 CFR Part 63 Subpart JJJJJ

The Dismukes Boiler #1, Dismukes Boiler #2, Andrews Boiler #1, Student Union Boiler #1, and Student Union Boiler #2 are subject to the *National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources* (40 CFR Part 63 Subpart JJJJJ). The units are considered existing oil fired boilers.

A summary of the currently applicable federal 40 CFR Part 63 Subpart JJJJJ requirements is listed below. At this time, the Department has not taken delegation of this area source MACT (Maximum Achievable Control Technology) rule promulgated by EPA, however MMA is still subject to the requirements. Notification forms and additional rule information can be found on the following website:

<http://www.epa.gov/ttn/atw/boiler/boilerpg.html>.

Compliance Dates, Notifications, and Work Practice Requirements

i. Initial Notification of Compliance

An Initial Notification submittal to EPA was due no later than January 20, 2014. [40 CFR Part 63.11225(a)(2)]

ii. Boiler Tune-Up Program

(a) A boiler tune-up program shall be implemented to include the initial tune-up of applicable boilers no later than March 21, 2014. [40 CFR Part 63.11196(a)(1)]

(b) The boiler tune-up program, conducted to demonstrate continuous compliance, shall be performed as specified below:

1. As applicable, inspect the burner, and clean or replace any component of the burner as necessary. Delay of the burner inspection until the next scheduled shutdown is permitted; not to exceed 36 months from the previous inspection for boilers greater than 5 MMBtu/hr or 72 months from the previous

- inspection for oil fired boilers less than 5 MMBtu/hr, boilers with oxygen trim system, seasonal boilers, and limited use boilers. [40 CFR Part 63.11223(b)(1)]
2. Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern, consistent with the manufacturer's specifications. [40 CFR Part 63.11223(b)(2)]
 3. Inspect the system controlling the air-to-fuel ratio, as applicable, and ensure it is correctly calibrated and functioning properly. Delay of the inspection until the next scheduled shutdown is permitted; not to exceed 36 months from the previous inspection for boilers greater than 5 MMBtu/hr or 72 months from the previous inspection for oil fired boilers less than 5 MMBtu/hr, boilers with oxygen trim system, seasonal boilers, and limited use boilers. [40 CFR Part 63.11223(b)(3)]
 4. Optimize total emissions of CO, consistent with manufacturer's specifications. [40 CFR Part 63.11223(b)(4)]
 5. Measure the concentration in the effluent stream of CO in parts per million by volume (ppmv), and oxygen in volume percent, before and after adjustments are made (measurements may be either on a dry or wet basis, as long as it is the same basis before and after the adjustments are made). Measurements may be taken using a portable CO analyzer. [40 CFR Part 63.11223(b)(5)]
 6. If a unit is not operating on the required date for a tune-up, the tune-up must be conducted within 30 days of start-up. [40 CFR Part 63.11223(b)(7)]
 7. After conducting the initial boiler tune-up, a Notification of Compliance Status shall be submitted to EPA no later than July 19, 2014. [40 CFR Part 63.11225(a)(4) and 40 CFR Part 63.11214(b)]
 8. The facility shall implement a boiler tune-up program after the initial tune-up and initial compliance report (called a Notification of Compliance Status) has been submitted.
 9. Each tune-up shall be conducted at a frequency specified by the rule and based on the size, age, and operations of the boiler. See chart below:

Boiler Category	Tune-Up Frequency
New or Existing Oil, Biomass and Coal fired boilers that are not designated as "Boilers with less frequent tune up requirements" listed below	Every 2 years
<i>New and Existing Oil, Biomass, and Coal fired Boilers with less frequent tune up requirements</i>	
Seasonal (see definition §63.11237)	Every 5 years
With a heat input capacity of <5MMBtu/hr	Every 5 years

[40 CFR Part 63.11223(a) and Table 2]

- The tune-up compliance report shall be maintained onsite and, if requested, submitted to EPA. The report shall contain the concentration of CO in the effluent stream (ppmv) and oxygen in volume percent, measured at high fire or typical operating load, before and after the boiler tune-up, a description of any corrective actions taken as part of the tune-up of the boiler, and the types and amounts of fuels used over the 12 months prior to the tune-up of the boiler. [40 CFR Part 63.11223(b)(6)] The compliance report shall also include the company name and address; a compliance statement signed by a responsible official certifying truth, accuracy, and completeness; and a description of any deviations and corrective actions. [40 CFR Part 63.11225(b)]

Existing Emergency Generators

MMA operates five emergency back-up generators, Generator #1A (Curtis), Generator #2A (Dock), Generator #3A (Alfond), and Generator #4A (Library), which fire diesel fuel. The fifth back-up generator is Generator #5A (Leavitt) which fires propane (the requirements for this new unit were described previously in Section II B). The diesel generators have the following maximum heat input ratings: Generator #1A at 1.7 MMBtu/hr, Generator #2A at 0.8 MMBtu/hr, Generator #3A at 0.6 MMBtu/hr, and Generator #4A at 0.6 MMBtu/hr. The emergency generators will follow the Bureau's guidance document dated November 2013 for Emergency Stationary Internal Combustion Engines (SICE).

Due to the dates of manufacture of the diesel engines, the units are not subject to *New Source Performance Standards (NSPS)* 40 CFR Part 60 Subpart IIII.

The federal regulation 40 CFR Part 63, Subpart ZZZZ, *National Emission Standards for Hazardous Air Pollutants (NESHAP) for Stationary Reciprocating Internal Combustion Engines* is not applicable to the emergency generators listed above. The units are considered existing, emergency stationary reciprocating internal combustion engines at an area HAP source. However, the units are considered exempt from the requirements of Subpart ZZZZ since they are categorized as institutional emergency engines and they do not operate or are not 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).

Operation of emergency generators such that each exceeds 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), would cause the generators to be subject to 40 CFR Part 63, Subpart ZZZZ, and shall comply with all applicable requirements.

Each of the emergency generators shall be limited to 100 hours of operation per calendar year, excluding operating hours during emergency situations. There is no limit on emergency operation. Each emergency generator shall be equipped with a non-resettable hour-meter to record operating time. To demonstrate compliance with the operating hours limit, MMA shall keep records of the total hours of operation and the hours of emergency operation for each unit.

Emergency generators are only to be operated for maintenance purposes and for situations arising from sudden and reasonably unforeseeable events beyond the control of the source. Emergency generators are 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.

BPT Findings:

The BPT emission limits for the diesel generators (Generator #1A, #2A, #3A, #4A) are based on the following:

- PM/PM₁₀ - 0.12 lb/MMBtu from BPT, 06-096 CMR 115
- SO₂ - combustion of diesel fuel with a maximum sulfur content not to exceed 15 ppm (0.0015% sulfur by weight)
- NO_x - 4.41 lb/MMBtu from AP-42 dated 10/96
- CO - 0.95 lb/MMBtu from AP-42 dated 10/96
- VOC - 0.35 lb/MMBtu from AP-42 dated 10/96
- Opacity - 06-096 CMR 101

The BPT emission limits for the generators 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 #1A (1.7 MMBtu/hr) Diesel	0.2	0.2	0.1	7.5	1.6	0.6
Generator #2A (0.8 MMBtu/hr) Diesel	0.1	0.1	0.1	3.5	0.8	0.3
Generator #3A (0.6 MMBtu/hr) Diesel	0.1	0.1	0.1	2.7	0.6	0.2
Generator #4A (0.6 MMBtu/hr) Diesel	0.1	0.1	0.1	2.7	0.6	0.2

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.

D. Annual Emissions

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

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

	PM	PM ₁₀	SO ₂	NO _x	CO	VOC
Boilers	4.2	4.2	17.6	5.0	1.3	0.1
Emergency Diesel Generators #1A, #2A, #3A, #4A, #5A	0.1	0.1	0.1	1.9	1.7	0.5
Total TPY	4.3	4.3	17.7	6.9	3.0	0.6

III. AMBIENT AIR QUALITY ANALYSIS

According to the Maine Regulations 06-096 CMR 115, the level of air quality analyses required for a renewal source shall be determined on a case-by case basis. Modeling and monitoring are not required for a renewal if the total emissions of any pollutant released do not exceed the following:

Pollutant	Tons/Year
PM	25
PM ₁₀	25
SO ₂	50
NO _x	100
CO	250

Based on the above total facility emissions, MMA is below the emissions level required for modeling and monitoring.

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 Air Emission License A-78-71-M-R/A 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:** (Curtis Boiler#1A, Curtis Boiler #2A, Curtis Boiler #3A, Dismukes Boiler #1, Dismukes Boiler #2, Andrews Boiler #1, Student Union Boiler #1, Student Union Boiler #2, Library Boiler #1A, Library Boiler #2A, and Andrews Boiler #2)

A. Fuel

1. Total fuel use for the boilers shall not exceed 500,000 gal/yr of #2 fuel oil, on a calendar year basis.
2. Prior to July 1, 2016 or on the date specified in 38 MRSA §603-A(2)(A)(3), the #2 fuel oil fired in the boilers shall be ASTM D396 compliant (max. sulfur content of 0.5% by weight). [06-096 CMR 115, BPT]
3. Beginning July 1, 2016 or on the date specified in 38 MRSA §603-A(2)(A)(3), the facility shall fire #2 fuel oil with a maximum sulfur content limit of 0.005% by weight (50 ppm). [38 MRSA §603-A(2)(A)(3)]
4. Beginning January 1, 2018 or on the date specified in 38 MRSA §603-A(2)(A)(3), the facility shall fire #2 fuel oil with a maximum sulfur content limit of 0.0015% by weight (15 ppm). [38 MRSA §603-A(2)(A)(3)]
5. Compliance shall be demonstrated by fuel records from the supplier showing the quantity, type, and the percent sulfur of the fuel delivered (if applicable). Records of annual fuel use shall be kept on a calendar year basis. [06-096 CMR 115, BPT]

B. Emissions shall not exceed the following:

Unit	Pollutant	lb/MMBtu	Origin and Authority
Boilers: (Dismukes Boiler #1, Dismukes Boiler #2, Andrews Boiler #1, Student Union #1, Student Union #2)	PM	0.12	06-096 CMR 103(2)(B)(1)(a)
Boilers: (Curtis Boiler #1A, #2A, #3A, Andrews Boiler #2, Library Boiler #1A, and Library Boiler #2A)	PM	0.08	06-096 CMR 115, BACT

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

Unit	PM (lb/hr)	PM ₁₀ (lb/hr)	SO ₂ (lb/hr)	NO _x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Curtis Boiler #1A	0.3	0.3	1.8	0.5	0.2	0.1
Curtis Boiler #2A	0.3	0.3	1.8	0.5	0.2	0.1
Curtis Boiler #3A	0.3	0.3	1.8	0.5	0.2	0.1
Library Boiler #1A	0.2	0.2	0.9	0.3	0.1	0.1
Library Boiler #2A	0.2	0.2	0.9	0.3	0.1	0.1
Andrews Boiler #2	0.3	0.3	1.8	0.5	0.2	0.1
Dismukes Boiler #1	0.2	0.2	0.7	0.2	0.1	0.1
Dismukes Boiler #2	0.2	0.2	0.7	0.2	0.1	0.1
Andrews Boiler #1	0.7	0.7	2.7	0.8	0.2	0.1
Student Union #1	0.4	0.4	1.4	0.4	0.1	0.1
Student Union #2	0.4	0.4	1.4	0.4	0.1	0.1

D. Visible Emissions

Visible emissions from each boiler firing fuel oil shall not exceed 20% 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 101]

E. 40 CFR Part 63, Subpart JJJJJ

MMA shall meet the applicable requirements of 40 CFR Part 63, Subpart JJJJJ (Boiler MACT) as outlined in the Finding of Fact section of this license. [06-096 CMR 115, BPT]

- (17) **Emergency Generators:** Generators (#1A, #2A, #3A, #4A, and #5A)
- A. Each of the emergency generators shall be limited to 100 hours of operation per calendar year, excluding operating hours during emergency situations. [06-096 CMR 115]
 - B. MMA 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. [06-096 CMR 115, BACT]
 - C. If the generators 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, 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. [06-096 CMR 115, BACT]
 - D. Emergency generators are only to be operated for maintenance purposes and for situations arising from sudden and reasonably unforeseeable events beyond the control of the source. Emergency generators are not to be used for prime power when reliable offsite power is available; nor to operate or to be contractually obligated to be available for more than 15 hours per calendar year in a demand response program, during a period of deviation from standard voltage or frequency, or supplying power during a non-emergency situation as part of a financial arrangement with another entity. [06-096 CMR 115, BACT]
 - E. The distillate fuel sulfur content for Generators #1A, #2A, #3A, and #4A shall be limited to 0.0015% sulfur by weight. 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]

F. 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 #1A (1.7 MMBtu/hr) Diesel	0.2	0.2	0.1	7.5	1.6	0.6
Generator #2A (0.8 MMBtu/hr) Diesel	0.1	0.1	0.1	3.5	0.8	0.3
Generator #3A (0.62 MMBtu/hr) Diesel	0.1	0.1	0.1	2.7	0.6	0.2
Generator #4A (0.62 MMBtu/hr) Diesel	0.1	0.1	0.1	2.7	0.6	0.2
Generator #5A (1.5 MMBtu/hr) Propane	0.1	0.1	0.1	3.4	5.2	0.1

G. Visible Emissions

1. Visible emissions from each of the diesel generators (Generators #1A, #2A, #3A, #4A) 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]
2. Visible emissions from the propane fired generator (Generator #5A) shall not exceed 10% opacity on a 6 minute block average basis, except for no more than one (1) six (6) minute block average in a 3 hour period. [06-096 CMR 115, BACT]

(18) **General Process Sources**

Visible emissions from any general process source shall not exceed an opacity of 20% on a six (6) minute block average basis, except for no more than one (1) six (6) minute block average in a 1-hour period. [06-096 CMR 101]

- (19) MMA 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 24 DAY OF July, 2014.
DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: Marc Allen Robert Conr 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: February 10, 2014

Date of application acceptance: February 21, 2014

Date filed with the Board of Environmental Protection: _____

This Order prepared by Edwin Cousins, Bureau of Air Quality

