



STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION



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**Trustees of St. Joseph's College
Db a Saint Joseph's College of Maine
Cumberland County
Standish, Maine
A-729-71-G-R/A (SM)**

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

FINDINGS OF FACT

After review of the air emissions license renewal and 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 Trustees of Saint Joseph's College db a Saint Joseph's College of Maine (St. Joseph's College) in Standish has applied to renew their Air Emission License permitting the operation of emission sources associated with their educational facility.

In addition, this renewal will include an amendment to reflect the installation of two propane fired Hydrotherm KN10 units (Boilers #6 and #7). These units are located at Alford Hall as part of an emergency response to the loss of an underground hot water line. Previously licensed HW #2 was removed from this license. Emission factors were also updated as part of this renewal.

The equipment addressed in this license is located at 278 Whites Bridge Road Standish, Maine.

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

B. Emission Equipment

The following equipment is addressed in this air emission license:

Boilers

<u>Equipment</u>	<u>Maximum Capacity (MMBtu/hr)</u>	<u>Maximum Firing Rate (gal/hr)</u>	<u>Fuel Type, % sulfur</u>	<u>Location</u>	<u>Stack #</u>
Boiler #1	2.0	15	Distillate, 0.5%	Mercy Hall	1
Boiler #2	2.0	15	Distillate, 0.5%	Mercy Hall	1
Boiler #3	1.5	10.7	Distillate, 0.5%	Saint Joseph's Hall	2
Boiler #4	2.5	18.9	Distillate, 0.5%	Saint Joseph's Hall	2
Boiler #5	4	28.6	Distillate, 0.5%	Saint Joseph's Hall	2
Boiler #6	1.0	10.9	Propane	Alfond Hall	3
Boiler #7	1.0	10.9	Propane	Alfond Hall	4
Furnace #1 (HV#1)	1.2	13.1	Propane	Campus Center	--
Furnace #2 (HV#2)	1.2	13.1	Propane	Campus Center	--

Generators

<u>Equipment</u>	<u>Power Output KW</u>	<u>Firing Rate (cfh* or gal/hr)</u>	<u>Fuel Type</u>	<u>Date of Manuf.</u>	<u>Location</u>
Emergency Generator #3	50	270 cfh	Propane	<2002	Saint Joseph's Hall
Emergency Generator #6	80	580 cfh	Propane	2002	Currier Hall
Emergency Generator #9	55	295 cfh	Propane	2004	Academic Building
Back-up Generator #10	150	12.25 gal/hr	Distillate	2007	Mercy Hall
Back-up Generator #11	60	7.17 gal/hr	Propane	2007	Campus Service Bldg

* cfh = cubic feet per hour

The following table is a listing of the generators that are considered insignificant and listed here for inventory purposes only. Although they are not licensed, they may be subject to the federal regulations for propane fired (spark ignition) and distillate fired (compression ignition) engines.

<u>Equipment</u>	<u>Power Output</u> <u>KW</u>	<u>Make</u>	<u>Location</u>
Emergency Generator #4	20	Kohler	Carmel Hall
Emergency Generator #5	20	Onan	Alfond Center
Emergency Generator #7	4	Daton	Standish Hall
Emergency Generator #8	40	Olympian	Feeney Hall

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

This license is considered both a renewal of currently licensed emission units and an amendment and has been processed through *Major and Minor Source Air Emission License Regulations*, 06-096 Code of Maine Rules (CMR) 115 (as amended). With the annual operating hours restriction of 100 hours of non-emergency service on the emergency generators, the facility is licensed below the major source thresholds for criteria pollutants and is considered a synthetic minor and the facility is licensed below the major source thresholds for hazardous air pollutants (HAP) and is considered an area source of HAP.

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 regulations.

The emission increases are determined by subtracting the current licensed emissions preceding the modification from the maximum future licensed allowed emissions, as follows:

<u>Pollutant</u>	<u>Current License (TPY)</u>	<u>Future License (TPY)</u>	<u>Net Change (TPY)</u>	<u>Sig. Level</u>
PM	5.1	5.9	0.8	100
PM ₁₀	5.1	5.9	0.8	100
SO ₂	27.2	26.7	-0.5	100
NO _x	16.9	10.7	-6.2	100
CO	9.2	4.0	-5.2	100
VOC	0.4	0.5	0.1	50
CO _{2e}	-----*	<100,000	<100,000	100,000

* CO_{2e} was not previously licensed; addressed in the current license.

This modification is determined to be a minor modification. It has been processed as a renewal with a minor modification.

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 06-096 CMR 100. BACT is a top-down approach to selecting air emission controls considering economic, environmental and energy impacts.

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.

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

B. Boiler #6 and #7

Boilers #6 and #7 were installed in response to the loss of an underground hot water line at the facility. The new boilers are propane fired Hydrotherm KN10 units, each with a maximum heat input capacity of 1.0 MMBtu/hr. St. Joseph's College operates Boiler #6 and #7 produce heat and hot water. The boilers were installed in 2014 and each boiler exhausts through its own stack.

Due to their size, the boilers 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.

BACT Findings

Best Available Control Technology (BACT) for Boilers #6 and #7 is summarized below:

1. Particulate Matter (PM), Carbon Monoxide (CO) and Volatile Organic Compounds(VOC)

Emissions of PM, CO, and VOC from a state-of-the-art gas-fired burner are generally negligible. Add-on emission control equipment is not economically practical for any of these pollutants. St. Joseph's College will meet BACT for these pollutants through the use of efficient burner combustion technology.

The Department finds that good combustion control is considered BACT for controlling PM, CO, and VOC emissions from small propane fired boilers.

2. Sulfur Dioxide (SO₂)

The sulfur dioxide emissions from the boilers will be negligible because the sulfur content of propane is very low. Further control of sulfur dioxide emissions during propane firing would not be practical. The Department finds the low sulfur content of the fuel represents BACT for SO₂ emissions.

3. Nitrogen Oxides

The combustion of propane produces nitrogen oxides (NO_x) primarily due to the reaction of oxygen and nitrogen in the combustion air, producing what is known as "thermal" NO_x. Propane contains very little fuel-bound nitrogen, therefore oxidation of fuel nitrogen to form "fuel" NO_x is negligible.

Post combustion control techniques

Two post-combustion control techniques such as Selective Catalytic Reduction (SCR) and Selective Non-catalytic Reduction (SNCR) have been employed on boilers. Packaged fire tube boilers lack the furnace space and residence time necessary for effective SNCR operation, and therefore SNCR is not technically feasible for the proposed boilers. SCR has been used on natural gas package fire tube boilers only on a very limited basis, primarily in the state of California, to meet Lowest Achievable Emission Rate (LAER) requirements. Based on equipment costs on control projects in California, the SCR equipment cost for a small industrial boiler would be at least \$150,000. The resulting cost-effective value (expressed in dollars spent per ton of pollutant reduced) would be well above what is currently considered acceptable for a 1.0 MMBtu/hr boiler in Maine. SCR does not represent BACT for controlling NO_x emissions from the proposed boilers.

Combustion Controls

NO_x emissions from small industrial boilers can be effectively minimized through the use of modern combustion equipment and proper combustion control. Boilers #6 and #7 will be equipped with a modern burner system that will result in low NO_x emissions. Field modifications to further lower NO_x emissions, such as retrofit of a flue gas recirculation system would be costly and provide minimal environmental benefit. The combustion equipment and controls that will be provided with the new boilers represent BACT for NO_x emissions.

The Department finds that good combustion controls is considered to be BACT for Boilers #6 and #7. The NO_x emission limits proposed for these boilers are as stringent as similar units in Maine.

4. BACT Findings

The BACT emission limits for Boilers #6 and #7 were based on the following:

Propane

PM/PM ₁₀	–	0.05 lb/MMBtu based on 06-096 CMR 115, BACT
SO ₂	–	0.054 lb/1000 gal source supplied
NO _x	–	13 lb/1000 gal based on AP-42, Table 1.5-1, dated 7/08
CO	–	7.5 lb/1000 gal based on AP-42, Table 1.5-1, dated 7/08
VOC	–	1.0 lb/1000 gal based on AP-42, Table 1.5-1, dated 7/08
Opacity	–	06-096 CMR 101

The BACT emission limits for Boilers #6 and #7 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)
Boilers # 6 & #7 propane	0.05	0.05	0.01	0.14	0.08	0.01

Visible emissions from each boiler shall not exceed an opacity of 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.

Boilers #6 and 7 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 JJJJJ) since the units fire propane. Units firing propane are considered gas-fired units and are not subject to this regulation.

C. Boilers #1-#5

St. Joseph's College operates Boilers #1-#5, firing distillate fuel for hot water and heating needs. Boilers #1 and #2 are rated at 2.0 MMBtu/hr and were installed in 1988. Boilers #3, #4 and #5 are rated at 1.5 MMBtu/hr, 2.5 MMBtu/hr, and 4.0 MMBtu/hr, respectively,

Due to the size 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. BPT Findings

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

Distillate Fuel

- PM/PM₁₀ – 0.12 lb/MMBtu based on 06-096 CMR 103 for Boilers #1 and #2
- 0.08 lb/MMBtu based on 06-096 CMR 103 for Boilers #3, #4, and #5
- SO₂ – based on firing distillate fuel with a maximum sulfur content of 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

(Note: VOC emission factors for the boilers were updated as part of this renewal).

The BPT emission limits for the boilers are the following:

<u>Unit</u>	<u>PM</u> <u>(lb/hr)</u>	<u>PM₁₀</u> <u>(lb/hr)</u>	<u>SO₂</u> <u>(lb/hr)</u>	<u>NO_x</u> <u>(lb/hr)</u>	<u>CO</u> <u>(lb/hr)</u>	<u>VOC</u> <u>(lb/hr)</u>
Boiler #1 (2.0 MMBtu/hr) distillate fuel	0.24	0.24	1.01	0.30	0.07	0.01
Boiler #2 (2.0 MMBtu/hr) distillate fuel	0.24	0.24	1.01	0.30	0.07	0.01
Boiler #3 (1.5 MMBtu/hr) distillate fuel	0.12	0.12	0.76	0.21	0.05	0.01
Boiler #4 (2.5 MMBtu/hr) distillate fuel	0.20	0.20	1.26	0.38	0.09	0.01
Boiler #5 (4.0 MMBtu/hr) distillate fuel	0.32	0.32	2.01	0.57	0.14	0.01

Visible emissions from combined Stack #1 (exhaust from Boilers #1 and #2) and Stack #2 (exhaust from Boilers #3, #4, and #5) shall each not exceed 20% opacity on a six (6) minute block average, except for no more than one (1) six (6) minute block average in a continuous 3-hour period.

Prior to July 1, 2016, or by the date otherwise stated in 38 MRSA §603-A(2)(A)(3), the distillate fuel fired in Boilers #1, #2, #3, #4 and #5 shall contain a 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 distillate fuel 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 monthly and 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

Boilers #1, #2, #4 and #5 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).

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 Saint Joseph's College 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 was due to EPA. [40 CFR Part 63.11225(a)(2)]

St. Joseph's College submitted their initial notification in December of 2011.

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 63.11223]

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. See chart below:

Boiler Category	Tune-Up Frequency
Existing oil boilers 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) 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 72 months from the previous inspection for oil fired boilers less than 5 MMBtu/hr. [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 72 months from the previous inspection for oil fired boilers less than 5 MMBtu/hr. [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. [40 CFR Part 63.11225(a)(4) and 40 CFR Part 63.11214(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 types 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.

EPA requires submission of Notification of Compliance Status reports for tune-ups through their electronic reporting system. [63.1125(a)(4)(vi)]

D. Additional fuel burning equipment

St. Joseph's College operates two furnaces named HV #1 and HV #2 used for generating heat. The furnaces are each rated at 1.2 MMBtu/hr firing propane.

Due to the size of these units, 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.

HV #1 and HV#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 JJJJJ) because of their size and because they fire propane. Units firing propane are considered gas-fired units and are not subject to this regulation.

The BACT emission limits for HV #1, and HV#2 were based on the following:

- PM/PM₁₀ – 0.05 lb/MMBtu based on 06-096 CMR 115, BACT
- SO₂ – 0.054 lb/1000 gal source supplied
- NO_x – 13 lb/1000 gal based on AP-42, Table 1.5-1, dated 7/08
- CO – 7.5 lb/1000 gal based on AP-42, Table 1.5-1, dated 7/08
- VOC – 1.0 lb/1000 gal based on AP-42, Table 1.5-1, dated 7/08
- Opacity – 06-096 CMR 101

The BACT emission limits for the boiler 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)
HV #1 and HV#2	0.06	0.06	0.01	0.17	0.10	0.01

Visible emissions from HV #1, and HV #2 shall each not exceed 10% opacity on a six (6) minute block average.

E. Emergency Generators #3, #6, #9, #10 and #11 (Generator #3, #6, #9, and #11)

An Emergency engine is defined as follows:

a. Emergency Definition:

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

- (1) The stationary ICE is operated to provide electrical power or mechanical work during an emergency situation. Examples include stationary ICE used to produce power for critical networks or equipment (including power supplied to portions of a facility) when electric power from the local utility (or the normal power source, if the facility runs on its own power production) is interrupted, or stationary ICE used to pump water in the case of fire or flood, etc. There is no time limit on the use of emergency stationary ICE in emergency situations.
- (2) Paragraph (1) above notwithstanding, the emergency stationary ICE may be operated for any combination of the purposes specified below for a maximum of 100 hours per calendar year:
 - (i) Maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that federal, state, or local standards require maintenance and testing of emergency ICE beyond 100 hours per calendar year.
 - (ii) Emergency demand response for periods in which the Reliability Coordinator under the North American Electric Reliability Corporation (NERC) Reliability Standard EOP-002-3, Capacity and Energy Emergencies (incorporated by reference, see §63.14), or other authorized entity as determined by the Reliability Coordinator, has declared an Energy Emergency Alert Level 2 as defined in the NERC Reliability Standard EOP-002-3.
 - (iii) Periods where there is a deviation of voltage or frequency of 5 percent or greater below standard voltage or frequency.
- (3) Paragraphs (1) and (2) above notwithstanding, emergency stationary ICE may be operated for up to 50 hours per calendar year in non-emergency situations. These 50 hours are counted as part of the 100 hours per calendar year for

maintenance checks and readiness testing, emergency demand response, and periods of voltage deviation or low frequency, as provided in paragraph (2) above.

The 50 hours per calendar year for non-emergency situations cannot be used for peak shaving, non-emergency demand response, or to generate income for a facility by providing power to an electric grid or otherwise supply power as part of a financial arrangement with another entity, except if the following conditions are met:

- (i) The engine is dispatched by the local balancing authority or local transmission and distribution system operator.
- (ii) The dispatch is intended to mitigate local transmission and/or distribution limitations so as to avert potential voltage collapse or line overloads that could lead to the interruption of power supply in a local area or region.
- (iii) The dispatch follows reliability, emergency operation or similar protocols that follow specific NERC, regional, state, public utility commission or local standards or guidelines.
- (iv) The power is provided only to the facility itself or to support the local transmission and distribution system.
- (v) The owner or operator identifies and records the entity that dispatches the engine and the specific NERC, regional, state, public utility commission or local standards or guidelines that are being followed for dispatching the engine. The local balancing authority or local transmission and distribution system operator may keep these records on behalf of the engine owner or operator.

[40 CFR §60.4211(f), §60.4219, §63.6675, and §63.6640]

St. Joseph's College operates 5 emergency generators. They are as follows:

<u>Equipment</u>	<u>Power Output KW</u>	<u>MMBtu/hr</u>	<u>Fuel Type</u>	<u>Date of Manuf.</u>	<u>Location</u>
Emergency Generator #3	50	0.5	Propane	<2002	Saint Joseph's Hall
Emergency Generator #6	80	0.78	Propane	2002	Currier Hall
Emergency Generator #9	55	0.54	Propane	2004	Academic Building
Back-up Gen. #10	150	1.68	Distillate	2007	Mercy Hall
Back-up Gen. #11	60	0.65	Propane	2007	Campus Service Bldg

1. BPT Findings

The BPT emission limits for the propane fired generators #3, #6, #9, #11 are based on the following:

- PM/PM₁₀ - 0.05 lb/MMBtu from 06-096 CMR 103
- SO₂ - 0.054 lb/1000 gal
- NO_x - 2.27 lb/MMBtu from AP-42 dated 7/2000, Table 3.2-3
- CO - 3.72 lb/MMBtu from AP-42 dated 7/2000, Table 3.2-3
- VOC - 0.03 lb/MMBtu from AP-42 dated 7/2000, Table 3.2-3
- 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 #3 (0.5 MMBtu/hr) propane	0.03	0.03	0.01	1.14	1.86	0.01
Generator #6 (0.78 MMBtu/hr) propane	0.04	0.04	0.01	1.77	2.9	0.02
Generator #9 (0.54 MMBtu/hr) propane	0.03	0.03	0.01	1.23	2.01	0.02
Back-up Generator #11 (0.65 MMBtu/hr) propane	0.03	0.03	0.01	1.48	2.42	0.02

Visible emissions from each of the propane fired emergency generators 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.

2. 40 CFR Part 63, Subpart ZZZZ (Generators #3, #6 and #9)

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 Emergency Generator #3, #6 and #9, the emergency generators listed above. The units are considered existing, emergency stationary reciprocating internal combustion engines at an area HAP source. However, they 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 require compliance with all applicable requirements.

3. 40 CFR Part 60, Subpart JJJJ (Back-up Generator #11)

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

Back-up Generator #11 was manufactured by Olympian in 2007 which is prior to the January 1, 2009 Subpart JJJJ applicability date for emergency engines and before the January 1, 2008 applicability date for non-emergency engines with a maximum engine power less than 500 HP, thus Back-up Generator #11 is not subject to the provisions in Subpart JJJJ.

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, Facility 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.

4. BPT Findings (Back-Up Generator #10)

St. Joseph's College's Back-up Generator #10 is at 1.68 MMBtu/hr and fires distillate fuel. The generator is a Cummins 150DSGAC EPA certified Tier 3 engine that was manufactured in 2007.

BPT Findings

The BPT emission limits for Back-up Generator #10 are based on the following:

- PM/PM₁₀ - 0.08 lb/MMBtu BPT
- SO₂ - combustion of distillate fuel with a maximum sulfur content not to exceed 15 ppm (0.0015% sulfur by weight)
- NO_x - 0.8 lb/MMBtu based on manufacturer's emission factors
- CO - 0.351 lb/MMBtu based on manufacturer's emission factors
- VOC - 0.036 lb/MMBtu based on manufacturer's emission factors
- Opacity - 06-096 CMR 101

The BPT emission limits for Back-up Generator #10 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)
Back-up Generator #10 (1.68 MMBtu/hr) distillate fuel	0.13	0.13	0.01	1.33	0.59	0.06

Visible emissions from Back-up Generator #10 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.

5. 40 CFR Part 60, Subpart IIII (Back-up Generator #10)

The federal regulation 40 CFR Part 60, Subpart IIII, *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (CI ICE)* is applicable to the emergency generator listed above since the unit was ordered after July 11, 2005 and manufactured after April 1, 2006. By meeting the requirements of Subpart IIII, the unit also meet the requirements found in the *National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*, 40 CFR Part 63, Subpart ZZZZ.

40 CFR Part 60, Subpart III Requirements:

(1) **Manufacturer Certification Requirement**

The generator shall be certified by the manufacturer as meeting the emission standards for new nonroad compression ignition engines found in 40 CFR §60.4202. [40 CFR §60.4205(b)]

(2) **Ultra-Low Sulfur Fuel Requirement**

The fuel fired in the generator shall not exceed 15 ppm sulfur (0.0015% sulfur), except that any existing fuel purchased (or otherwise obtained) prior to October 1, 2010, may be used until depleted. [40 CFR §60.4207(b)]

(3) **Non-Resettable Hour Meter Requirement**

A non-resettable hour meter shall be installed and operated on the generator. [40 CFR §60.4209(a)]

(4) **Operation and Maintenance Requirements**

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

(5) **Annual Time Limit for Maintenance and Testing**

The generator shall 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)]

(6) **Initial Notification Requirement**

No initial notification is required for emergency engines. [40 CFR §60.4214(b)]

(7) **Recordkeeping**

St. Joseph's College shall keep records that include maintenance conducted on the engine 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 is operated during a period of demand response or deviation from standard voltage or

frequency, or to supply power during a non-emergency situation as part of a financial arrangement with another entity as specified in §60.4211(f)(3)(i), St. Joseph's College Facility shall keep records of the notification of the emergency situation, and the date, start time, and end time of generator operation for these purposes. [40 CFR §60.4214(b)]

F. Annual Emissions

1. Total Annual Emissions

St. Joseph's College shall be restricted to the following annual emissions, based on a calendar year. The tons per year limits were calculated based on the continuous operation of the boilers, furnaces and on the 100 hrs/yr of non-emergency operation for the generators.

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

	PM	PM₁₀	SO₂	NO_x	CO	VOC
Boilers	5.3	5.3	26.5	8.8	2.6	0.3
Furnaces	0.5	0.5	0.1	1.5	0.9	0.1
Generators	0.1	0.1	0.1	0.4	0.5	0.1
Total TPY	5.9	5.9	26.7	10.7	4.0	0.5

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).

The quantity of CO₂e 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

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 licensed annual 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 licensed annual emissions for the facility 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-729-71-G-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) **Distillate Fired Boilers - Boilers #1-#5**

A. Fuel

1. Prior to July 1, 2016 or the date specified in 38 MRSA §603-A(2)(A)(3), the distillate fuel fired in the boiler shall have a maximum sulfur content of 0.5% by weight. [06-096 CMR 115, BPT]
2. Beginning July 1, 2016 or on the date specified in 38 MRSA §603-A(2)(A)(3), the facility shall fire distillate fuel with a maximum sulfur content limit of 0.005% by weight (50 ppm). [38 MRSA §603-A(2)(A)(3)]
3. Beginning January 1, 2018 or on the date specified in 38 MRSA §603-A(2)(A)(3), the facility shall fire distillate fuel with a maximum sulfur content limit of 0.0015% by weight (15 ppm). [38 MRSA §603-A(2)(A)(3)]
4. 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 both a monthly and calendar year total basis. [06-096 CMR 115, BPT]

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

Emission Unit	Pollutant	lb/MMBtu	Origin and Authority
Boiler #5	PM	0.08	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)
Boiler #1	0.24	0.24	1.01	0.30	0.07	0.01
Boiler #2	0.24	0.24	1.01	0.30	0.07	0.01
Boiler #3	0.12	0.12	0.76	0.21	0.05	0.01
Boiler #4	0.20	0.20	1.26	0.38	0.09	0.01
Boiler #5	0.32	0.32	2.01	0.57	0.14	0.01

D. Visible emissions from combined Stack #1 (exhaust from Boilers #1 and #2) and Stack #2 (exhaust from Boiler #3, #4, and #5) shall not exceed 20% opacity on a six (6) minute block average, except for no more than one (1) six (6) minute block average in a continuous 3-hour period. [06-096 CMR 101]

E. Boiler MACT (40 CFR Part 63, Subpart JJJJJ) Requirements for Boilers # 1, #2, #4, and #5 [incorporated under 06-096 CMR 115, BPT]

1. An Initial Notification submittal to EPA. [40 CFR Part 63.11225(a)(2)]
2. The facility shall implement a boiler tune-up program. [40 CFR Part 63.11223]

(a) 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
With a heat input capacity of <5MMBtu/hr	Every 5 years

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

(b) 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)]

3. The boiler tune-up program, conducted to demonstrate continuous compliance, shall be performed as specified below:

- (a) 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 systems, seasonal boilers, and limited use boilers. [40 CFR Part 63.11223(b)(1)]
- (b) 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)]
- (c) 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 systems, seasonal boilers, and limited use boilers. [40 CFR Part 63.11223(b)(3)]
- (d) Optimize total emissions of CO, consistent with manufacturer's specifications. [40 CFR Part 63.11223(b)(4)]
- (e) 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)]
- (f) 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)]

4. After conducting the initial boiler tune-up, a Notification of Compliance Status shall be submitted to EPA. [40 CFR Part 63.11225(a)(4) and 40 CFR Part 63.11214(b)]
5. Records shall be maintained consistent with the requirements of 40 CFR Part 63, Subpart JJJJJ including the following [40 CFR Part 63.11225(c)]:
 - (a) Copies of notifications and reports with supporting compliance documentation;

- (b) 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;
- (c) Records of the occurrence and duration of each malfunction of each applicable boiler; and
- (d) Records of actions taken during periods of malfunction to minimize emissions, including corrective actions to restore the malfunctioning boiler.

Records shall be in a form suitable and readily available for expeditious review. EPA requires submission of Notification of Compliance Status reports for tune-ups through their electronic reporting system. [63.1125(a)(4)(vi)]

(17) **Propane Fired Boilers - Boilers #6 and #7**

A. Boilers #6 and #7 Fuel shall fire propane.

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

Emission Unit	PM (lb/hr)	PM₁₀ (lb/hr)	SO₂ (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Boiler #6	0.05	0.05	0.01	0.14	0.08	0.01
Boiler #7	0.05	0.05	0.01	0.14	0.08	0.01

C. Visible emissions from Boilers #6 and #7 shall each not exceed 10% opacity on a six (6) minute block average, except for no more than one (1) six (6) minute block average in a continuous 3-hour period. [06-096 CMR 101 2.B.1.c.]

(18) **Additional Fuel Burning Equipment**

A. HV #1 and HV #2 shall fire propane.

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

Emission Unit	PM (lb/hr)	PM₁₀ (lb/hr)	SO₂ (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
HV #1	0.06	0.06	0.01	0.17	0.10	0.01
HV #2	0.06	0.06	0.01	0.17	0.10	0.01

C. Visible emissions from HV #1 and HV #2 shall each not exceed 10% opacity on a six (6) minute block average. [06-096 CMR 115, BPT]

(19) **Propane Fired Generator Units (Emergency Generator #3, #6, #9 and Back-up Generator #11)**

A. Each of the emergency generators (Emergency Generator #3, #6, #9, and Back-up Generator #11) shall be limited to 100 hours of operation per calendar year, excluding operating hours during emergency situations.

[06-096 CMR 115]

B. St. Joseph's 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. [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, St. Joseph's College 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. 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)
Generator #3 (0.5 MMBtu/hr) propane	0.03	0.03	0.01	1.14	1.86	0.01
Generator #6 (0.78 MMBtu/hr) propane	0.04	0.04	0.01	1.77	2.90	0.02
Generator #9 (0.54 MMBtu/hr) propane	0.03	0.03	0.01	1.23	2.01	0.02
Back-up Generator #11 (0.65 MMBtu/hr) propane	0.03	0.03	0.01	1.48	2.42	0.02

E. **Visible Emissions**

Visible emissions from Emergency Generators #3, #6, #9, and Back-up Generator #11, propane fired generators, shall each 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, BPT]

- F. Emergency generators #3, #6, #9, and Back-up Generator #11, 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.
- G. Emergency Generators #3, #6, and #9 are existing emergency generators located at an institution, thus not subject to 40 CFR Part 63, Subpart ZZZZ. If the generators become non-emergency generators, the generators shall meet the applicable requirements of 40 CFR Part 63, Subpart ZZZZ.
[40 CFR Part 63, Subpart ZZZZ, 06-096 CMR 115]

(20) **Distillate Fired Generator (Back-up Generator #10)**

- A. Back-up Generator #10 shall be limited to 100 hours of operation per calendar year, excluding operating hours during emergency situations. [06-096 CMR 115]
- B. Emissions shall not exceed the following [06-096 CMR 115, BPT]:

<u>Unit</u>	<u>PM (lb/hr)</u>	<u>PM₁₀ (lb/hr)</u>	<u>SO₂ (lb/hr)</u>	<u>NO_x (lb/hr)</u>	<u>CO (lb/hr)</u>	<u>VOC (lb/hr)</u>
Back-up Generator #10 (1.68 MMBtu/hr) distillate fuel	0.13	0.13	0.01	1.33	0.59	0.06

- C. Visible Emissions
Visible emissions from the Back-up Generator #10 shall not exceed 20% opacity on a six (6) minute block average, except for no more than two (2) six (6) minute block averages in a continuous 3-hour period. [06-096 CMR 101]
- D. Back-up Generator #10 shall meet the applicable requirements of 40 CFR Part 60, Subpart IIII, including the following:
1. Manufacturer Certification
The generator shall be certified by the manufacturer as meeting the emission standards for new nonroad compression ignition engines found in §60.4202. [40 CFR §60.4205(b)]

2. Ultra-Low Sulfur Fuel

The fuel fired in the generator shall not exceed 15 ppm sulfur (0.0015% sulfur), except that any existing fuel purchased (or otherwise obtained) prior to October 1, 2010, may be used until depleted. Compliance with the fuel sulfur content limit shall be based on fuel records from the supplier documenting the type of fuel delivered and the sulfur content of the fuel. [40 CFR §60.4207(b) and 06-096 CMR 115]

3. Non-Resettable Hour Meter

A non-resettable hour meter shall be installed and operated on the generator. [40 CFR §60.4209(a)]

4. Annual Time Limit for Maintenance and Testing

a. The generator shall be limited to 100 hours/year for maintenance checks and readiness testing, emergency demand response, and periods of voltage or frequency deviation from standards. Up to 50 hours/year of the 100 hours/year may be used in non-emergency situations (this does not include peak shaving, non-emergency demand response, or to generate income for a facility by providing power to an electric grid or otherwise supply power as part of a financial arrangement with another entity unless the conditions in §60.4211(f)(3)(i) are met). These limits are based on a calendar year. Compliance shall be demonstrated by a written log of all generator operating hours. [40 CFR §60.4211(f) and 06-096 CMR 115]

b. St. Joseph's College shall keep records that include maintenance conducted on the generator and the hours of operation of the engine recorded through the non-resettable hour meter. Documentation shall include the hours spent for emergency operation, including what classified the operation as emergency and how many hours spent for non-emergency. If the generator is operated during a period of demand response or deviation from standard voltage or frequency, or to supply power during a non-emergency situation as part of a financial arrangement with another entity as specified in §60.4211(f)(3)(i), the St. Joseph's College shall keep records of the notification of the emergency situation, and the date, start time, and end time of generator operation for these purposes.

5. Operation and Maintenance

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

Trustees of St. Joseph's College
Dba Saint Joseph's College of Maine
Cumberland County
Standish, Maine
A-729-71-G-R/A (SM)

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

- (21) St. Joseph's College 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 11 DAY OF May, 2015.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY:

Marc Allen Robert Corse 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: 5/7/2013
Date of application acceptance: 5/14/2013
Date filed with the Board of Environmental Protection:

This Order prepared by Lisa P. Higgins, Bureau of Air Quality.

