



DEPARTMENT ORDER

**The University of Maine System
Franklin County
Farmington, Maine
A-603-71-L-A**

**Departmental
Findings of Fact and Order
Air Emission License
Amendment #3**

FINDINGS OF FACT

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

I. REGISTRATION

A. Introduction

The University of Maine System's Farmington campus (UMF) was issued Air Emission License A-603-71-I-R/A on January 31, 2013, for the operation of emission sources associated with their educational facility. The license was subsequently amended on May 18, 2015 (A-603-71-J-A), and on April 6, 2017 (A-603-71-K-A).

UMF has requested an amendment to their license in order to make the following changes:

1. Remove two small boilers that have been disabled and removed from the facility;
2. Remove a parts washer; and
3. Add an existing emergency generator and relabel the currently licensed Generator #1 as Olsen Generator.

The equipment addressed in this license amendment is located at The University of Maine System's Farmington campus, Farmington, Maine.

B. Emission Equipment

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

Boilers

Boilers H2270 and H9351 have been disabled and removed from the facility. UMF operates several other small boilers. Although none of the other boilers are affected by this amendment, the Order section of this amendment includes the condition addressing Small Boilers from which Boilers H2270 and H9351 have been removed.

Stationary Engine

Equipment	Max. Input Capacity (MMBtu/hr)	Rated Output Capacity (kW)	Fuel Type, % sulfur	Firing Rate (gal/hr)	Date of Manuf.	Date of Install.
Front Street Generator ^a	2.22	200	Distillate fuel, 0.0015%	16.18	2003	2003
Olsen Generator ^b	0.98	100	Distillate fuel, 0.0015%	7.2	1999	1999

^a New to this license.

^b Previously licensed as Generator #1.

Parts Washer

The parts washer has been removed from the facility.

C. Definitions

Distillate Fuel means the following:

- Fuel oil that complies with the specifications for fuel oil numbers 1 or 2, as defined by the American Society for Testing and Materials (ASTM) 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

All rules, regulations, or statutes referenced in this air emission license refer to the amended version in effect as of the date this license was issued.

The modification of a minor source is considered a major or minor modification based on whether or not expected emission increases exceed the “Significant Emission” levels as defined in the Department’s *Definitions Regulation*, 06-096 Code of Maine Rules (C.M.R.) ch. 100. The emission increases are determined by subtracting the current licensed annual emissions preceding the modification from the maximum future licensed annual emissions, as follows:

Pollutant	Current License (TPY)	Future License (TPY)	Net Change (TPY)	Significant Emission Levels
PM	6.1	6.1	0.0	100
PM ₁₀	6.1	6.1	0.0	100
SO ₂	21.8	21.8	0.0	100
NO _x	14.6	15.1	0.5	100
CO	17.4	17.5	0.1	100
VOC	0.8	0.8	0.0	50

This modification is determined to be a minor modification and has been processed as such.

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 C.M.R. ch. 100. 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 C.M.R. ch. 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.

B. Front Street Generator

UMF has requested that the Front Street Generator be added to their Air Emission License. The emergency generator is a generator set consisting of an engine and an electrical generator. The Front Street Generator has an engine rated at 2.22 MMBtu/hr which fires distillate fuel. The Front Street Generator was manufactured in 2003.

1. BACT Findings

The BACT emission limits for the Front Street Generator are based on the following:

- PM/PM₁₀ - 0.12 lb/MMBtu from 06-096 C.M.R. ch. 115, BACT
- SO₂ - combustion of distillate 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 Table 3.3-1 dated 10/96
- CO - 0.95 lb/MMBtu from AP-42 Table 3.3-1 dated 10/96
- VOC - 0.36 lb/MMBtu from AP-42 Table 3.3-1 dated 10/96
- Visible Emissions - 06-096 C.M.R. ch. 101

The BACT emission limits for the Front Street 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)
Front Street Generator	0.27	0.27	neg	9.79	2.11	0.80

Visible emissions from the Front Street Generator shall not exceed 20% opacity on a six-minute block average basis except for periods of startup during which time UMF may comply with the following work practice standards in lieu of the numerical visible emissions standard.

- a. Maintain a log (written or electronic) of the date, time, and duration of all engine startups.
- b. Operate the engine in accordance with the manufacturer's emission-related operating instructions.
- c. Minimize the engine's time spent at idle during startup and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations shall apply.
- d. Operate the engine, including any associated air pollution control equipment, at all times in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Department that may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the unit.

The Front Street Generator shall be limited to 100 hours of operation per calendar year, excluding operating hours during emergency situations. There is no limit on emergency operation. The Front Street Generator engine shall be equipped with a non-resettable hour-meter to record operating time. To demonstrate compliance with the operating hours limit, UMF shall keep records of the total hours of operation and the hours of emergency operation for the unit.

Emergency engines 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 engines 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 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.

2. New Source Performance Standards (NSPS)

Due to the date of manufacture of the compression ignition emergency engine listed above, the engine is not subject to the New Source Performance Standards (NSPS) *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (CIICE)*, 40 C.F.R. Part 60, Subpart IIII since the unit was manufactured prior to April 1, 2006. [40 C.F.R. § 60.4200]

3. National Emission Standards for Hazardous Air Pollutants (NESHAP):
40 C.F.R. Part 63, Subpart ZZZZ

National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines, 40 C.F.R. Part 63, Subpart ZZZZ is not applicable to the emergency engine listed above. The unit is considered an existing, emergency stationary reciprocating internal combustion engine at an area HAP source. However, it is considered exempt from the requirements of 40 C.F.R. Part 63, Subpart ZZZZ since it is categorized as a residential, commercial, or institutional emergency engine and it does not operate or is not contractually obligated to be available in a demand response program, during a period of deviation from standard voltage or frequency, or for supplying power during a non-emergency situation as part of a financial arrangement with another entity as specified in 40 C.F.R. § 63.6640(f)(4)(ii).

Operation of any emergency engine in a demand response program, during a period of deviation from standard voltage or frequency, or for supplying power during a non-emergency situation as part of a financial arrangement with another entity as specified in 40 C.F.R. § 63.6640(f)(4)(ii), would cause the engine to be subject to 40 C.F.R. Part 63, Subpart ZZZZ and require compliance with all applicable requirements.

C. Annual Emissions

The table below provides an estimate of facility-wide annual emissions for the purposes of calculating the facility’s annual air license fee. Only licensed equipment is included, i.e., emissions from insignificant activities are excluded. Similarly, unquantifiable fugitive particulate matter emissions are not included. Maximum potential emissions were calculated based on the following assumptions:

- Firing 4,500 ton/year of wood with a heating value of 5,160 Btu/lb at 40% moisture;
- Firing 600,000 gal/year of distillate fuel in the facility’s boilers;
- Firing 500,000 gal/year of propane in the facility’s boilers;
- Operating the Olsen Generator and the Front Street Generator for 100 hr/year each.

Please note, this information provides the basis for fee calculation only and should not be construed to represent a comprehensive list of license restrictions or permissions. That information is provided in the Order section of this license.

**Total Licensed Annual Emissions for the Facility
 Tons/year**

(used to calculate the annual license fee)

	PM	PM ₁₀	SO ₂	NO _x	CO	VOC
Wood	1.6	1.6	0.6	5.1	13.9	0.4
Distillate Fuel	3.4	3.4	21.2	6.0	1.5	0.1
Propane	1.1	1.1	--	3.3	1.9	0.3
Olsen Generator	--	--	--	0.2	0.1	--
Front Street Generator	--	--	--	0.5	0.1	--
Total TPY	6.1	6.1	21.8	15.1	17.5	0.8

Pollutant	Tons/year
Single HAP	9.9
Total HAP	24.9

III. AMBIENT AIR QUALITY ANALYSIS

The level of ambient air quality impact modeling required for a minor source is determined by the Department on a case-by case basis. In accordance with 06-096 C.M.R. ch. 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:

Pollutant	Tons/Year
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 amendment.

ORDER

Based on the above Findings and subject to conditions listed below, the Department concludes that the emissions from this source:

- will receive Best Practical Treatment,
- will not violate applicable emission standards, and
- will not violate applicable ambient air quality standards in conjunction with emissions from other sources.

The Department hereby grants Air Emission License Amendment A-603-71-L-A subject to the conditions found in Air Emission License A-603-71-I-R/A, in amendments A-603-71-J-A and A-603-71-K-A, and the following conditions.

Severability. The invalidity or unenforceability of any provision of this License Amendment or part thereof shall not affect the remainder of the provision or any other provisions. This License Amendment shall be construed and enforced in all respects as if such invalid or unenforceable provision or part thereof had been omitted.

The following shall replace Condition (16) of Air Emission Licenses A-603-71-I-R/A, A-603-71-J-A, and A-603-71-K-A:

(16) **Small Boilers**

A. Fuel

1. Facility-wide use of distillate fuel shall not exceed 600,000 gal/year based on a 12-month rolling total basis. [06-096 C.M.R. ch. 115, BPT]
2. Facility-wide use of propane shall not exceed 500,000 gal/year based on a 12-month rolling total basis. [06-096 C.M.R. ch. 115, BPT]
3. The facility shall not purchase or otherwise obtain distillate fuel with a maximum sulfur content that exceeds 0.0015% by weight (15 ppm). [06-096 C.M.R. ch. 115, BPT]
4. Compliance shall be demonstrated by fuel records showing the quantity, type, and the percent sulfur (for distillate fuel) of the fuel delivered. Records of annual fuel use shall be kept on a monthly and 12-month rolling total basis. Fuel sulfur content compliance shall be demonstrated by fuel delivery receipts from the supplier, fuel supplier certification, certificate of analysis, or testing of the tank containing the fuel to be fired. [06-096 C.M.R. ch. 115, BPT]

B. Emissions shall not exceed the following [06-096 C.M.R. ch. 115, BPT]:

Emission Unit	PM (lb/hr)	PM₁₀ (lb/hr)	SO₂ (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
H011573	0.13	0.13	0.82	0.23	0.06	–
H011574	0.13	0.13	0.82	0.23	0.06	–
H011583	0.09	0.09	0.59	0.17	0.04	–
H011584	0.09	0.09	0.59	0.17	0.04	–
H011586	0.09	0.09	0.59	0.17	0.04	–
H012874	0.12	0.12	–	0.33	0.19	0.03
H012875	0.12	0.12	–	0.33	0.19	0.03

- C. Visible emissions from the distillate fuel-fired boilers shall not exceed 20% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 115, BPT]
- D. Visible emissions from the propane-fired boilers shall not exceed 10% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 115, BPT]
- E. UMF shall comply with all requirements of 40 C.F.R. Part 63, Subpart JJJJJ applicable to boilers H011573 and H011574 including, but not limited to, the following: [incorporated under 06-096 C.M.R. ch. 115, BPT]

1. The facility shall implement a boiler tune-up program. [40 C.F.R. § 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
Oil fired boilers with a heat input capacity of ≤ 5 MMBtu/hr	Every 5 years

[40 C.F.R. § 63.11223(a) and Table 2]

- 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 for up to 72 months from the previous inspection. [40 C.F.R. § 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 C.F.R. § 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 for up to 72 months from the previous inspection. [40 C.F.R. § 63.11223(b)(3)]
 - (4) Optimize total emissions of CO, consistent with manufacturer's specifications. [40 C.F.R. § 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 C.F.R. § 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 C.F.R. § 63.11223(b)(7)]
- c. Tune-Up Report: A tune-up report shall be maintained onsite and, if requested, submitted to EPA. The report shall contain the following information:
- (1) The concentration of CO in the effluent stream (ppmv) and oxygen (volume percent) measured at high fire or typical operating load both **before** and **after** the boiler tune-up;
 - (2) A description of any corrective actions taken as part of the tune-up of the boiler; and

- (3) The types and amounts of fuels used over the 12 months prior to the tune-up of the boiler, but only if the unit was physically and legally capable of using more than one type of fuel during that period. Units sharing a fuel meter may estimate the fuel use by each unit. [40 C.F.R. § 63.11223(b)(6)]
 - d. After conducting the initial boiler tune-up, a Notification of Compliance Status shall be submitted to EPA. [40 C.F.R. § 63.11225(a)(4) and 40 C.F.R. § 63.11214(b)]
2. Compliance Report

A compliance report shall be prepared by March 1st every five years which covers the previous five calendar years. The report shall be maintained by the source and submitted to the Department and/or to the EPA upon request. The report must include the items contained in §§ 63.11225(b)(1) and (2), including the following: [40 C.F.R. § 63.11225(b)]

 - a. Company name and address;
 - b. A statement of whether the source has complied with all the relevant requirements of this Subpart;
 - c. A statement certifying truth, accuracy, and completeness of the notification and signed by a responsible official and containing the official's name, title, phone number, email address, and signature;
 - d. The following certifications, as applicable:
 - (1) "This facility complies with the requirements in 40 C.F.R. § 63.11223 to conduct tune-ups of each boiler in accordance with the frequency specified in this Subpart."
 - (2) "No secondary materials that are solid waste were combusted in any affected unit."
 - (3) "This facility complies with the requirement in §§ 63.11214(d) and 63.11223(g) to minimize the boiler's time spent during startup and shutdown and to conduct startups and shutdowns according to the manufacturer's recommended procedures or procedures specified for a boiler of similar design if manufacturer's recommended procedures are not available."
3. Records shall be maintained consistent with the requirements of 40 C.F.R. Part 63, Subpart JJJJJ including the following [40 C.F.R. § 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.
[40 C.F.R. § 63.11225(a)(4)(vi)]

Condition (17) of Air Emission License A-603-71-I-R/A is hereby removed.

The following shall replace Condition (20) of Air Emission Licenses A-603-71-I-R/A and A-603-71-J-A:

(20) Olsen Generator and Front Street Generator

- 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 C.M.R. ch. 115, BPT/BACT]
- B. UMF 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 number of hours each unit operated for emergency purposes, the number of hours each unit operated for non-emergency purposes, and the reason the engine was in operation during each time.
[06-096 C.M.R. ch. 115, BPT/BACT]
- C. The fuel sulfur content for the Olsen Generator and the Front Street Generator shall be limited to 0.0015% sulfur by weight. Compliance shall be demonstrated by fuel delivery receipts from the supplier, fuel supplier certification, certificate of analysis, or testing of the tank containing the fuel to be fired. [06-096 C.M.R. ch. 115, BPT/BACT]
- D. Emissions shall not exceed the following [06-096 C.M.R. ch. 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)
Olsen Generator	0.12	0.12	neg	4.32	0.93	0.34
Front Street Generator	0.27	0.27	neg	9.79	2.11	0.80

E. Visible Emissions

Visible emissions from each of the emergency generators shall not exceed 20% opacity on a six-minute block average basis except for periods of startup during which time UMF may comply with the following work practice standards in lieu of the numerical visible emissions standard. [06-096 C.M.R. ch. 101]

1. UMF shall maintain a log (written or electronic) of the date, time, and duration of all generator startups.
2. The generators shall be operated in accordance with the manufacturer's emission-related operating instructions.
3. UMF shall minimize the engine's time spent at idle during startup and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations shall apply.
4. The generators, including any associated air pollution control equipment, shall be operated at all times in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Department that may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the unit.

F. 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 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 C.M.R. ch. 115, BPT/BACT]

DONE AND DATED IN AUGUSTA, MAINE THIS 22nd DAY OF APRIL, 2020.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: _____ for
GERALD D. REID, COMMISSIONER

The term of this amendment shall be concurrent with the term of Air Emission License A-603-71-I-R/A.

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: January 27, 2020

Date of application acceptance: February 4, 2020

Date filed with the Board of Environmental Protection:

This Order prepared by Benjamin Goundie, Bureau of Air Quality.

FILED
APR 22, 2020
State of Maine
Board of Environmental Protection