



DEPARTMENT ORDER

University of Maine System
 University of Maine at Fort Kent
 Aroostook County
 Fort Kent, Maine
 A-604-71-J-R/M

Departmental
 Findings of Fact and Order
 Air Emission License
 Renewal/Minor Revision

FINDINGS OF FACT

After review of the air emission license renewal/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 at Fort Kent (UMFK) has applied to renew its Air Emission License for the operation of emission sources associated with its campus facilities. UMFK has also requested an amendment to remove Boilers 7 POW1, 7POW2, 8NOW, and generator KGEN1 from its license:

The equipment addressed in this license is located on University Drive, Fort Kent, Maine.

B. Emission Equipment

The following equipment is addressed in this air emission license:

Boilers

Equipment	Max. Input Capacity (MMBtu/hr)	Maximum Firing Rate	Fuel Type, % sulfur	Date of Manuf.	Date of Install.	Stack #
1PE1 previously 3K001-B2	2.20	400 lb/hr	Wood Pellets	2011	2012	1PE
1PE2	3.22	22.9 gal/hr	Distillate fuel, 0.0015% by weight	1975	1975	2PE
2CYR	3.08	22.0 gal/hr	Distillate fuel, 0.0015% by weight*	1980	1980	2CYR
2AUD	1.40	10 gal/hr	Distillate fuel, 0.0015% by weight*	1970	1970	2CYR
5BL1	1.54	11 gal/hr	Distillate fuel, 0.0015% by weight*	1988	1988	5BL

Equipment	Max. Input Capacity (MMBtu/hr)	Maximum Firing Rate	Fuel Type, % sulfur	Date of Manuf.	Date of Install.	Stack #
5BL2	1.33	9.5 gal/hr	Distillate fuel, 0.0015% by weight*	1988	1988	5BL
LDG1	1.40	10.8 gal/hr	Distillate fuel, 0.0015% by weight*	2003	2003	1LDG
009-B2 previously 3K009-B2	4.94	625 lb/hr	Wood Pellets	2013	2013	009-S1
009-B3 previously 3K009-B3	4.94	625 lb/hr	Wood Pellets	2013	2013	009-S1

* All fuel purchased or otherwise obtained for use at the facility prior to July 1, 2018 with a fuel sulfur content not to exceed 0.5% by weight may be used.

Stationary Engines

Equipment	Max. Input Capacity (MMBtu/hr)	Rated Output Capacity (kW)	Fuel Type, % sulfur	Firing Rate (gal/hr)	Date of Manuf.	Date of Install.
Generator #2	3.0	300	Distillate fuel, 0.0015% by weight	21.8	2014	2014

UMFK operates small stationary engines smaller than 0.5 MMBtu/hr. These engines are considered insignificant activities and are not required to be included in this license. However, they are still subject to applicable State and Federal regulations. More information regarding requirements for small stationary engines is available on the Department's website at the link below.

<http://www.maine.gov/dep/air/publications/docs/SmallRICEGuidance.pdf>

Additionally, UMFK operates portable engines used for maintenance or emergency-only purposes, including KGEN 1 which was last licensed in A-604-71-G-R/A (04/13/2012). These engines are considered insignificant activities and are not required to be included in this license. However, they may still be subject to applicable State and Federal regulations.

C. Definitions

Distillate Fuel. For the purposes of this license, *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.

Portable Engine. For the purposes of this license, *portable engine* means an internal combustion engine which is portable or transportable, meaning designed to be and capable of being carried or moved from one location to another. Indicia of transportability include, but are not limited to, wheels, skids, carrying handles, dolly, trailer, or platform. This definition does NOT include engines which remain or will remain at a location (excluding storage locations) for more than 12 consecutive months or a shorter period of time for an engine located at a seasonal source. A location is any single site at a building, structure, facility, or installation. Any engine that replaces an engine at a location and that is intended to perform the same or similar function as the engine replaced will be included in calculating the consecutive time period.

D. Application Classification

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

The application for UMFK does not include the installation of new or modified equipment or licensing of increased emissions¹, but does include the removal of several emission units. Therefore, the license is considered to be 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 (C.M.R.) ch. 115.

The amendment of this license to remove equipment will not increase emissions of any pollutant. Therefore, this amendment is determined to be a minor revision and has been processed as such.

Due to low potential emissions from licensed units and with the annual fuel limit on the boilers and the operating hours restriction on the emergency generator, the facility is licensed below the major source thresholds for criteria pollutants (CAP) and is considered a minor source for CAP. The facility is also 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

¹ Allowable Annual Emissions increases of 0.1 tons per year each for PM and PM₁₀ are a result of a calculation change, not an increase in licensed limits.

Definitions Regulation, 06-096 C.M.R. ch. 100. Separate control requirement categories exist for new and 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.

B. Wood-Fired Boilers

UMFK operates the following three wood pellet fired boilers for heat and hot water on campus:

Equipment	Campus Location	Max. Input Capacity (MMBtu/hr)	Date of Manuf.	Stack #
1PE1	Sports Center	2.20	2011	1PE
009-B2	Armory Building	4.94	2013	009-S1
009-B3	Armory Building	4.94	2013	009-S1

1. BPT Findings

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

Wood Pellets

PM/PM ₁₀	0.3 lb/MMBtu 06-096 C.M.R. ch. 115, BPT (1PE1) 06-096 C.M.R. ch. 103 (009-B2 and B3)
SO ₂	0.025 lb/MMBtu AP-42 Table 1.6-2, dated 09/03
NO _x	0.49 lb/MMBtu AP-42 Table 1.6-2, dated 09/03
CO	0.6 lb/MMBtu AP-42 Table 1.6-2, dated 09/03
VOC	0.017 lb/MMBtu AP-42 Table 1.6-3, dated 09/03
Visible Emissions	06-096 C.M.R. ch. 115, BPT

The BPT emission limits for the boilers are the following:

Unit	PM (lb/MMBtu)
009-B2	0.30
009-B3	0.30

Unit	PM (lb/hr)	PM ₁₀ (lb/hr)	SO ₂ (lb/hr)	NO _x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
1PE1	0.66	0.66	0.06	1.08	1.32	0.04
009-B2	1.48	1.48	0.12	2.42	2.96	0.08
009-B3	1.48	1.48	0.12	2.42	2.96	0.08

Visible Emissions

Visible emissions from 1PE1 shall not exceed 20% opacity on a six-minute block average basis.

Visible emissions from the shared stack of 009-B2 and B3, stack 009-S1, shall not exceed 20% opacity on a six-minute block average basis.

Fuel Use Limitations

UMFK is limited to a combined total of 3,000 tons of wood pellets burned in the boilers on a calendar year total basis.

Federal Rule Applicability

- a. New Source Performance Standards (NSPS): 40 C.F.R. Part 60, Subpart Dc

Due to the sizes of the boilers, none are subject to *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units* 40 C.F.R. Part 60, Subpart Dc for units greater than 10 MMBtu/hr manufactured after June 9, 1989. [40 C.F.R. § 60.40c]

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

The wood pellet-fired boilers are all subject to 40 C.F.R. Part 63, Subpart JJJJJ. The units are considered new biomass boilers rated less than 10 MMBtu/hr. [40 C.F.R. § 63.11193]

Requirements for this subpart are detailed in the “Boiler NESHAP Requirements” section of the Findings of Fact of this license.

2. Periodic Monitoring

Periodic monitoring for the boilers shall include recordkeeping to document fuel use on a calendar year total basis.

C. Oil-Fired Boilers

UMFK operates the following six oil-fired boilers rated above minimum licensing thresholds for heat and hot water on campus:

Equipment	Campus Location	Max. Input Capacity (MMBtu/hr)	Date of Manuf.	Stack #
1PE2	Sports Center	3.22	1975	2PE
2CYR	Cyr Hall	3.08	1980	2CYR
2AUD	Cyr Hall	1.40	1970	2CYR
5BL1	Blake Library	1.54	1988	5BL
5BL2	Blake Library	1.33	1988	5BL
LDG1	Lodge	1.40	2003	1LDG

1. BPT Findings

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

Distillate Fuel

PM/PM ₁₀	1PE 2, 2CYR → 0.12 lb/MMBtu 06-096 C.M.R. ch. 103
	2AUD, 5BL1, 5BL2, LDG1 → 2 lb/1000gal AP-42 Table 1.3-1, dated 05/10
SO ₂	0.5 lb/MMBtu based on the combustion of distillate fuel with a maximum sulfur content of 0.5% sulfur by weight ²
NO _x	20 lb/1000 gal from AP-42 Table 1.3-1, dated 05/10
CO	5 lb/1000 gal from AP-42 Table 1.3-1, dated 05/10
VOC	0.34 lb/1000 gal from AP-42 Table 1.3-3, dated 05/10
Visible Emissions	06-096 C.M.R. ch. 115, BPT

The BPT emission limits for the boilers are the following:

Unit	PM (lb/MMBtu)
1PE2	0.12
2CYR	0.12

Unit	PM (lb/hr)	PM ₁₀ (lb/hr)	SO ₂ (lb/hr)	NO _x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
1PE2	0.39	0.39	1.61	0.46	0.12	0.01
2CYR	0.37	0.37	1.54	0.44	0.11	0.01
2AUD	0.02	0.02	0.70	0.20	0.05	0.01
5BL1	0.02	0.02	0.77	0.22	0.06	0.01
5BL2	0.02	0.02	0.67	0.19	0.05	0.01
LDG1	0.02	0.02	0.70	0.22	0.05	0.01

² Because UMFK is permitted to fire distillate fuel purchased or otherwise obtained for use at the facility prior to July 1, 2018 with a fuel sulfur content not to exceed 0.5% by weight, the lb/hr limit will remain consistent with the highest emission scenario.

Visible Emissions

Visible emissions from 1PE2 and LDG1 shall not exceed 20% opacity on a six-minute block average basis.

Visible emissions from the shared stacks, 2CYR (Boilers 2CYR and 2AUD) and 5BL (Boilers 5BL1 and 5BL2), shall each not exceed 30% opacity on a six-minute block average basis.

Fuel Use Limitations

UMFK is limited to 500,000 gallons of distillate fuel use in the oil-fired boilers on a calendar year total basis.

2. Federal Rule Applicability

a. New Source Performance Standards (NSPS): 40 C.F.R. Part 60, Subpart Dc

Due to the sizes of the boilers, none are subject to *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units* 40 C.F.R. Part 60, Subpart Dc for units greater than 10 MMBtu/hr manufactured after June 9, 1989. [40 C.F.R. § 60.40c]

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

2AUD, 5BL1, 5BL2, LDG1

2AUD, 5BL1, 5BL2, and LDG1 are all not subject to the *National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources*, 40 C.F.R. Part 63, Subpart JJJJJ because they are classified as hot water heaters, all being rated below 1.6 MMBtu/hr. [40 C.F.R. § 63.11195]

1PE2, 2CYR

1PE2 and 2CYR are both subject 40 C.F.R. Part 63, Subpart JJJJJ. The units are considered existing oil boilers rated less than 10 MMBtu/hr. [40 C.F.R. § 63.11193]

Requirements for this subpart are detailed in the “Boiler NESHAP Requirements” section of the Findings of Fact.

3. Fuel Sulfur Content Requirements

Per 38 M.R.S. § 603-A(2)(A)(3), as of July 1, 2018, no person shall import, distribute, or offer for sale any distillate fuel with a sulfur content greater than 0.0015% by weight (15 ppm). Therefore, beginning July 1, 2018, the distillate fuel purchased or otherwise obtained for use in the boilers shall not exceed 0.0015% by weight (15 ppm).

UMFK may still fire distillate fuel in the boilers which, by definition, has a sulfur content of 0.5% or less by weight as long as it was purchased or otherwise obtained for use at the facility by July 1, 2018. This higher sulfur fuel may be fired alone or blended with 15ppm or lower sulfur fuel purchased by the facility.

4. Periodic Monitoring

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

D. Boiler NESHAP Requirements

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

The following boilers are subject to the *National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources*, 40 C.F.R. Part 63, Subpart JJJJJ:

- 1PE1
- 1PE2
- 2CYR
- 009-B2
- 009-B3

The oil-fired units are considered existing boilers and the biomass units are considered new boilers, all rated below 10 MMBtu/hr. [40 C.F.R. §§63.11193 and 63.11195]

A summary of the currently applicable federal 40 C.F.R. Part 63, Subpart JJJJJ requirements is listed below. Notification forms and additional rule information can be found on the following website: <https://www.epa.gov/stationary-sources-air-pollution/compliance-industrial-commercial-and-institutional-area-source>.

a. Compliance Dates, Notifications, and Work Practice Requirements

(1) Initial Notification of Compliance

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

UMFK submitted their Initial Notification to EPA on September 9, 2011, for the oil fired boilers and on May 21, 2018, for the biomass boilers.

(2) Boiler Tune-Up Program

(i) A boiler tune-up program shall be implemented. [40 C.F.R. § 63.11223]

(ii) 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 table below for the requirements for each boiler.

Boilers	Boiler Category	Tune-Up Frequency
1PE1, 009-B2 009-B3	New biomass fired boilers equipped with oxygen trim system	Every 5 years
1PE2, 2CYR	Oil fired boilers with a heat input capacity of $\leq 5\text{MMBtu/hr}$	Every 5 years

[40 C.F.R. § 63.11223(a) and Table 2]

(iii) 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), (c), and (e)]
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), (c), and (e)]

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)]

(iv) 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)]

(v) After conducting the initial boiler tune-up, a Notification of Compliance Status for the oil-fired boilers shall be submitted to EPA no later than July 19, 2014. [40 C.F.R. § 63.11225(a)(4) and 40 C.F.R. § 63.11214(b)]

UMFK submitted their Notification of Compliance Status to EPA on July 25, 2018.

(3) Compliance Report

A compliance report shall be prepared by March 1st every five years for the boilers 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)]

- (i) Company name and address;
- (ii) A statement of whether the source has complied with all the relevant requirements of this Subpart;
- (iii) 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;
- (iv) 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."

b. Recordkeeping

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)]:

- (1) Copies of notifications and reports with supporting compliance documentation;
- (2) 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;
- (3) Records of the occurrence and duration of each malfunction of each applicable boiler; and
- (4) 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 and energy assessments through their electronic reporting system. [40 C.F.R. § 63.11225(a)(4)(vi)]

E. Generator #2

UMFK operates one stationary emergency generator rated above the minimum licensing threshold of 0.5 MMBtu/hr. Generator #2 is a generator set consisting of an engine and an electrical generator. It has an engine rated at 3.0 MMBtu/hr which fires distillate fuel, and it was manufactured in 2014.

1. BPT Findings

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

Distillate Fuel

PM	0.12 lb/MMBtu 06-096 C.M.R. ch. 103
PM ₁₀	0.12 lb/MMBtu 06-096 C.M.R. ch. 115, BPT
SO ₂	0.0015 lb/MMBtu Firing of distillate fuel with a sulfur content of 0.015% by weight
NO _x	4.41 lb/MMBtu AP-42 table 3.3-1, dated 10/96
CO	0.95 lb/MMBtu AP-42 table 3.3-1, dated 10/96
VOC	0.36 lb/MMBtu AP-42 table 3.3-1, dated 10/96
Visible Emissions	06-096 C.M.R. ch. 115, BPT

The BPT emission limits for Generator #2 are the following:

Unit	PM (lb/MMBtu)
Generator #2	0.12

Unit	PM (lb/hr)	PM ₁₀ (lb/hr)	SO ₂ (lb/hr)	NO _x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Generator #2	0.36	0.36	--	13.23	2.85	1.08

Visible Emissions

Visible emissions from Generator #2 shall not exceed 20% opacity on a six-minute block average basis.

2. 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 applicable to Generator #2. The unit is considered a new, emergency stationary reciprocating internal combustion engine at an area HAP source. As a new unit, the engine meets the requirements of Subpart ZZZ by meeting the applicable requirements of 40 C.F.R. Part 60, Subpart IIII.

3. New Source Performance Standards (NSPS):
40 C.F.R. Part 60, Subpart IIII

Standards of Performance for Stationary Compression Ignition Internal Combustion Engines, 40 C.F.R. Part 60, Subpart IIII is applicable to Generator #2 since the unit was ordered after July 11, 2005, and manufactured after April 1, 2006. [40 C.F.R. § 60.4200]

A summary of the currently applicable federal 40 C.F.R. Part 60, Subpart IIII requirements is listed below.

- a. Emergency Engine Designation and Operating Criteria

Under 40 C.F.R. Part 60, Subpart IIII, a stationary reciprocating internal combustion engine (ICE) is considered an **emergency** stationary ICE (emergency engine) as long as the engine is operated in accordance with the following criteria. Operation of an engine outside of the criteria specified below may cause the engine to no longer be considered an emergency engine under 40 C.F.R. Part 60, Subpart IIII, resulting in the engine being subject to requirements applicable to **non-emergency** engines.

- (1) Emergency Situation Operation (On-Site)

There is no operating time limit on the use of an emergency engine to provide electrical power or mechanical work during an emergency situation. Examples of use of an emergency engine during emergency situations include the following:

- Use of an engine to produce power for critical networks or equipment (including power supplied to portions of a facility) because of failure or

interruption of electric power from the local utility (or the normal power source, if the facility runs on its own power production);

- Use of an engine to mitigate an on-site disaster or equipment failure;
- Use of an engine to pump water in the case of fire, flood, natural disaster, or severe weather conditions; and
- Similar instances.

(2) Non-Emergency Situation Operation

An emergency engine may be operated up to a maximum of 100 hours per calendar year for maintenance checks, readiness testing, and other non-emergency situations as described below.

- (i) An emergency engine may be operated for a maximum of 100 hours per calendar year for 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 more than 100 hours per calendar year.
- (ii) An emergency engine may be operated for up to 50 hours per calendar year for other non-emergency situations. **However, these operating hours are counted as part of the 100 hours per calendar year operating limit described in paragraph (2) and (2) (i) above.**

The 50 hours per calendar year operating limit for other non-emergency situations cannot be used for peak shaving, 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.

[40 C.F.R. §§ 60.4211(f) and 60.4219]

b. 40 C.F.R. Part 60, Subpart IIII Requirements

(1) Manufacturer Certification Requirement

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

- (2) **Ultra-Low Sulfur Fuel Requirement**
The fuel fired in the engine(s) 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 C.F.R. § 60.4207(b)]
- (3) **Non-Resettable Hour Meter Requirement**
A non-resettable hour meter shall be installed and operated on the engine.
[40 C.F.R. § 60.4209(a)]
- (4) **Operation and Maintenance Requirements**
The engine shall be operated and maintained according to the manufacturer's emission-related written instructions. UMFK may only change those emission-related settings that are permitted by the manufacturer. [40 C.F.R. § 60.4211(a)]
- (5) **Annual Time Limit for Maintenance and Testing**
As an emergency engine, the unit shall be limited to 100 hours/year for maintenance checks and readiness testing. Up to 50 hours/year of the 100 hours/year may be used in non-emergency situations (this does not include peak shaving, 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). [40 C.F.R. § 60.4211(f)]
- (6) **Initial Notification Requirement**
No initial notification is required under 40 C.F.R. Part 60, Subpart IIII for emergency engines. [40 C.F.R. § 60.4214(b)]
- (7) **Recordkeeping**
UMFK shall keep records that include maintenance conducted on the engine and the hours of operation of the engine recorded through the non-resettable hour meter. Documentation shall include the number of hours the unit operated for emergency purposes, the number of hours the unit operated for non-emergency purposes, and the reason the engine was in operation during each time. [40 C.F.R. § 60.4214(b)]

F. Annual Emissions

1. Total Annual Emissions

UMFK shall be restricted to the following annual emissions, on a calendar year total basis. The tons per year limits were calculated based on 100 hours of operation of the emergency generator and annual boiler fuel use limits of 500,000 gallons of distillate fuel and 3,000 tons of wood pellets at 12% moisture content by weight:

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
Oil Boilers	4.20	4.20	17.50	5.0	1.25	0.09
Wood Boilers	7.13	7.13	0.59	11.64	14.26	0.40
Generator #2	0.02	0.02	--	0.66	0.14	0.05
Total TPY	11.4	11.4	18.1	17.3	15.7	0.6

Pollutant	Tons/year
Single HAP	9.9
Total HAP	24.9

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 C.F.R. Part 52, Subpart A, § 52.21, *Prevention of Significant Deterioration of Air Quality* rule. Greenhouse gases, as defined in 06-096 C.M.R. ch. 100, 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 *Mandatory Greenhouse Gas Reporting*, 40 C.F.R. Part 98; and
- global warming potentials contained in 40 C.F.R. Part 98.

No additional licensing actions to address GHG emissions are required at this time.

As defined in 06-096 C.M.R. ch. 100, any source emitting 100,000 tons/year or more of CO₂e is a major source for GHG. This license includes applicable requirements addressing GHG emissions from this source, as appropriate.

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.

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-604-71-J-R/M subject to the following conditions.

Severability. The invalidity or unenforceability of any provision of this License or part thereof 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. § 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 C.M.R. ch. 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 C.M.R. ch. 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 C.M.R. ch. 115]
- (5) The licensee shall pay the annual air emission license fee to the Department, calculated pursuant to Title 38 M.R.S. § 353-A. [06-096 C.M.R. ch. 115]

- (6) The license does not convey any property rights of any sort, or any exclusive privilege. [06-096 C.M.R. ch. 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 C.M.R. ch. 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 C.M.R. ch. 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 C.M.R. ch. 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 C.M.R. ch. 115]
- (11) In accordance with the Department's air emission compliance test protocol and 40 C.F.R. 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 C.F.R. 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 C.M.R. ch. 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 C.F.R. 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 C.M.R. ch. 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 C.M.R. ch. 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 C.M.R. ch. 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 C.M.R. ch. 115]

SPECIFIC CONDITIONS

(16) Wood-Fired Boilers

A. Fuel

1. Total combined fuel use for 1PE1, 009-B2, and 009-B3 shall not exceed 3,000 ton/yr of wood pellets on a calendar year basis. [06-096 C.M.R. ch. 115, BPT]
2. UMFK shall demonstrate compliance with the wood pellet limit by documenting fuel use in the boilers on a calendar year total basis with a usage log or by maintaining records from the supplier of annual fuel orders. [06-096 C.M.R. ch. 115, BPT]

B. Emissions shall not exceed the following [06-096 C.M.R. ch. 103 § (2)(B)(4)(a)]:

Unit	PM (lb/MMBtu)
009-B2	0.30
009-B3	0.30

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

Unit	PM (lb/hr)	PM ₁₀ (lb/hr)	SO ₂ (lb/hr)	NO _x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
1PE1	0.66	0.66	0.06	1.08	1.32	0.04
009-B2	1.48	1.48	0.12	2.42	2.96	0.08
009-B3	1.48	1.48	0.12	2.42	2.96	0.08

D. Visible Emissions [06-096 C.M.R. ch. 115, BPT]

Visible emissions from 1PE1 shall not exceed 20% opacity on a six-minute block average basis.

Visible emissions from the shared stack of 009-B2 and B3, Stack 009-S1, shall not exceed 20% opacity on a six-minute block average basis.

(17) **Oil-Fired Boilers**

A. Fuel

1. Total combined fuel use for the oil-fired boilers shall not exceed 500,000 gal/yr of distillate fuel on a calendar year basis. [06-096 C.M.R. ch. 115, BPT]
2. UMFK shall not purchase or otherwise obtain distillate fuel with a maximum sulfur content that exceeds 0.0015% by weight (15 ppm). The boilers may fire distillate fuel with a maximum sulfur content not to exceed 0.5% by weight that was purchased or otherwise obtained for use at the facility prior to July 1, 2018. This higher sulfur fuel may be fired alone or blended with 15ppm or lower sulfur fuel purchased by the facility. [06-096 C.M.R. ch. 115, BPT]
3. Compliance shall be demonstrated by fuel records from the supplier showing the quantity, type, and the percent sulfur of the fuel delivered. Records of annual fuel use shall be kept on a calendar year total basis. [06-096 C.M.R. ch. 115, BPT]

B. Emissions shall not exceed the following [06-096 C.M.R. ch. 103 § (2)(B)(1)(a)]:

Unit	PM (lb/MMBtu)
1PE2	0.12
2CYR	0.12

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

Unit	PM (lb/hr)	PM ₁₀ (lb/hr)	SO ₂ (lb/hr)	NO _x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
1PE2	0.39	0.39	1.61	0.46	0.12	0.01
2CYR	0.37	0.37	1.54	0.44	0.11	0.01
2AUD	0.02	0.02	0.70	0.20	0.05	0.01
5BL1	0.02	0.02	0.77	0.22	0.06	0.01
5BL2	0.02	0.02	0.67	0.19	0.05	0.01
LDG1	0.02	0.02	0.70	0.22	0.05	0.01

D. Visible Emissions [06-096 C.M.R. ch. 115, BPT]

Visible emissions from 1PE2 and LDG1 shall not exceed 20% opacity on a six-minute block average basis.

Visible emissions from the shared stacks, 2CYR (Boilers 2CYR and 2AUD) and 5BL (Boilers 5BL1 and 5BL2), shall each not exceed 30% opacity on a six-minute block average basis.

(18) **Boiler NESHAP Requirements**

UMFK shall comply with all requirements of 40 C.F.R. Part 63, Subpart JJJJJ applicable to 1PE1, 1PE2, 2CYR, 009-B2, and 009-B3 including, but not limited to, the following [incorporated under 06-096 C.M.R. ch. 115, BPT]:

A. The facility shall implement a boiler tune-up program. [40 C.F.R. § 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 the chart below for the requirements for each boiler:

Boilers	Boiler Category	Tune-Up Frequency
1PE1, 009-B2 009-B3	New Biomass fired boilers equipped with oxygen trim systems	Every 5 years
1PE2, 2CYR	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]

2. 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 for up to 72 months from the previous inspection. [40 C.F.R. § 63.11223(b)(1), (c), and (e)]
 - 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 C.F.R. § 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 for up to 72 months from the previous inspection. [40 C.F.R. § 63.11223(b)(3), (c) and (e)]
 - d. Optimize total emissions of CO, consistent with manufacturer's specifications. [40 C.F.R. § 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 C.F.R. § 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 C.F.R. § 63.11223(b)(7)]

3. Tune-Up Report: A tune-up report shall be maintained onsite and, if requested, submitted to EPA. The report shall contain the following information:
- 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;
 - 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, 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)]

B. Compliance Report

A compliance report shall be prepared by March 1st every five years for boilers 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)]

- Company name and address;
- A statement of whether the source has complied with all the relevant requirements of this Subpart;
- 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;
- The following certifications, as applicable:
 - "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."
 - "No secondary materials that are solid waste were combusted in any affected unit."
 - "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."

- C. 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)]:
1. Copies of notifications and reports with supporting compliance documentation;
 2. 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;
 3. Records of the occurrence and duration of each malfunction of each applicable boiler; and
 4. 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 and energy assessments through their electronic reporting system. [40 C.F.R. § 63.11225(a)(4)(vi)]

(19) **Generator #2**

- A. Generator #2 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]
- B. Emissions shall not exceed the following [06-096 C.M.R. ch. 103 § (2)(B)(1)(a)]:

Unit	PM (lb/MMBtu)
Generator #2	0.12

- C. Emissions shall not exceed the following [06-096 C.M.R. ch. 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 #2	0.36	0.36	--	13.23	2.85	1.08

- D. Visible Emissions from Generator #2 shall not exceed 20% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 115, BPT]
- E. Generator #2 shall meet the applicable requirements of 40 C.F.R. Part 60, Subpart IIII, including the following [incorporated under 06-096 C.M.R. ch. 115, BPT]:

1. **Manufacturer Certification**

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

2. **Ultra-Low Sulfur Fuel**

The fuel fired in the engine 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 C.F.R. § 60.4207(b) and 06-096 C.M.R. ch. 115]

3. **Non-Resettable Hour Meter**

A non-resettable hour meter shall be installed and operated on the engine. [40 C.F.R. § 60.4209(a)]

4. **Annual Time Limit for Maintenance and Testing**

a. As an emergency engine, the unit shall be limited to 100 hours/year for maintenance checks and readiness testing. Up to 50 hours/year of the 100 hours/year may be used in non-emergency situations (this does not include peak shaving, 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). These limits are based on a calendar year. Compliance shall be demonstrated by records (electronic or written log) of all engine operating hours. [40 C.F.R. § 60.4211(f) and 06-096 C.M.R. ch. 115]

b. UMFK shall keep records that include maintenance conducted on the engine and the hours of operation of the engine recorded through the non-resettable hour meter. Documentation shall include the number of hours the unit operated for emergency purposes, the number of hours the unit operated for non-emergency purposes, and the reason the engine was in operation during each time. [40 C.F.R. § 60.4214(b)]

5. **Operation and Maintenance**

The engine shall be operated and maintained according to the manufacturer's emission-related written instructions. UMFK may only change those emission-related settings that are permitted by the manufacturer. [40 C.F.R. § 60.4211(a)]

University of Maine System
University of Maine at Fort Kent
Aroostook County
Fort Kent, Maine
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Departmental
Findings of Fact and Order
Air Emission License
Renewal/Minor Revision

- (20) UMFK 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. § 605).

DONE AND DATED IN AUGUSTA, MAINE THIS 13 DAY OF August, 2018.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: Paul Mercer
PAUL MERCER, COMMISSIONER

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

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

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: 04/03/2017

Date of application acceptance: 04/18/2017

Date filed with the Board of Environmental Protection:

This Order prepared by Colby Fortier-Brown, Bureau of Air Quality.

