



DEPARTMENT ORDER

**RSU #39  
Eastern Aroostook School District  
Aroostook County  
Caribou, Maine  
A-1132-71-A-N**

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

**FINDINGS OF FACT**

After review of the air emission license 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

RSU #39 has applied for an Air Emission License for the operation of emission sources associated with their educational facility.

The equipment addressed in this license is located at 21 Glenn Street, Caribou, Maine.

B. Title, Right, or Interest

In their application, RSU #39 submitted copies of a property deed demonstrating ownership of the facility. RSU #39 has provided sufficient evidence of title, right, or interest in the facility for purposes of this air emission license.

C. Emission Equipment

The following equipment is addressed in this air emission license:

**Boilers**

<b>Equipment</b>	<b>Max. Capacity (MMBtu/hr)</b>	<b>Maximum Firing Rate</b>	<b>Fuel Type, % sulfur</b>	<b>Date of Manuf.</b>	<b>Date of Install.</b>	<b>Stack #</b>
Boiler #1	4.8	0.54 ton/hr	Wood chips, negligible	2018	2020	1
Boiler #2	2.3	16.6 gal/hr	Distillate fuel, 0.0015%	2018	2020	2
Boiler #3	2.3	16.6 gal/hr	Distillate fuel, 0.0015%	2018	2020	2

### 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 #1	3.05	300	Distillate fuel, 0.0015%	22.1	2017	2018

RSU #39 may operate 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, RSU #39 may operate portable engines used for maintenance or emergency-only purposes. 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.

#### D. Definitions

Biomass means any biomass-based solid fuel that is not a solid waste. This includes, but is not limited to, wood residue and wood products (e.g., trees, tree stumps, tree limbs, bark, lumber, sawdust, sander dust, chips, scraps, slabs, millings, and shavings). This definition also includes wood chips and processed pellets made from wood or other forest residues. Inclusion in this definition does not constitute a determination that the material is not considered a solid waste. RSU #39 should consult with the Department before adding any new biomass type to its fuel mix.

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.

Records or Logs mean either hardcopy or electronic records.

E. 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.

RSU #39 is classified as an existing source that is applying for its first air emission license, after-the-fact. The Department has determined the facility is a minor source and the application has been processed through *Major and Minor Source Air Emission License Regulations*, 06-096 Code of Maine Rules (C.M.R.) ch. 115.

A new source is considered a major source based on whether or not total licensed annual emissions exceed the “Significant Emission” levels as defined in the Department’s *Definitions Regulation*, 06-096 Code of Maine Rules (C.M.R.) ch. 100.

Pollutant	Total Licensed Annual Emissions (TPY)	Significant Emission Levels
PM	6.3	100
PM <sub>10</sub>	6.3	100
SO <sub>2</sub>	0.7	100
NO <sub>x</sub>	8.2	100
CO	4.1	100
VOC	0.6	50

The Department has determined the facility is a minor source and the application has been processed through *Major and Minor Source Air Emission License Regulations*, 06-096 C.M.R. ch. 115.

F. Facility Classification

The facility is licensed as follows:

- As a natural minor source of air emissions, because no license restrictions are necessary to keep facility emissions below major source thresholds for criteria pollutants; and
- As an area source of hazardous air pollutants (HAP), because the licensed emissions are below the major source thresholds for HAP.

II. **BEST PRACTICAL TREATMENT (BPT)**

A. Introduction

In order to receive a license, the applicant must control emissions from each unit to a level considered by the Department to represent Best Practical Treatment (BPT), as defined in *Definitions Regulation*, 06-096 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 *Definitions Regulation*, 06-096 C.M.R. ch. 100. BACT is a top-down approach to selecting air emission controls considering economic, environmental, and energy impacts.

B. Description

RSU #39 proposes to install and operate emission sources associated with a new elementary school. The elementary school will be heated by a new wood-fired boiler (Boiler #1) with a heat input capacity of 4.8 MMBtu/hr, and two distillate fuel fired boilers (Boilers #2 and #3) with heat input capacities of 2.3 MMBtu/hr each. A distillate fuel fired generator (Generator #1) with a heat input capacity of 3.05 MMBtu/hr will provide emergency power.

C. Boiler #1

RSU #39 has proposed to install Boiler #1, which is rated at 4.8 MMBtu/hr and fires wood chips, to provide heat and hot water to the new Elementary School. The boiler will exhaust through its own stack, designated as Stack #1, at a height of 45 feet above ground level and with an inside diameter of 1.75 feet.

The proposed boiler system will consist of a Messersmith stoker combustor coupled with a Hurst boiler. The combustor is separated from the boiler by a refractory shelf which maximizes the temperature in the combustion chamber (1,500 °F to 2,000 °F), increases the flame path, and improves the mixing of combustion gases and secondary air. Combustion air is injected through four under-fire ducts and one over-fire duct. Each of the ducts has an automatically controlled damper to modulate the air supply.

The combustion system is controlled by a program logic controller-based operator control system which monitors inputs such as water and stack temperature, and adjusts fuel feed and air flow accordingly.

1. BACT Findings

Following is a BACT analysis for control of emissions from Boiler #1.

a. Particulate Matter (PM, PM<sub>10</sub>)

Particulate matter emissions from fuel combustion are formed from incomplete combustion of fuel and non-combustible material in the fuel. Potential PM controls for biomass boilers consist of add-on controls, combustion of clean fuel, good combustion practices, or a combination of options. Potential add-on controls for

biomass boilers include electrostatic precipitators (ESPs), wet scrubbers, fabric filters, and multiclones.

Due to the relatively small size of the boiler, the \$200,000 initial capital costs and annual costs of \$20,000 associated with an ESP make that option economically infeasible. A wet scrubber is not feasible based on significant environmental impacts due to water management, along with not being justifiable for economic and energy considerations. Fabric filters are technically infeasible due to the risk of fires from smoldering particulates that may be carried over from the combustion process.

RSU #39 proposes to install a multi cyclone with a recirculation duct on Boiler #1 to control PM emissions.

The Department finds that BACT for PM emissions from Boiler #1 is good boiler combustion practices; the use of a multiclone; and a PM emission limit of 0.22 lb/MMBtu (1.06 lb/hr).

b. Sulfur Dioxide (SO<sub>2</sub>)

Sulfur dioxide is formed from the combustion of sulfur present in the fuel. Control options identified for SO<sub>2</sub> emissions include the use of a fuel with a low sulfur content such as biomass, use of fuels that produce alkali ash which absorbs SO<sub>2</sub> (use of biomass may have some absorbing potential), sorbent injections, and SO<sub>2</sub> scrubbing technologies, including flue gas desulfurization or packed-bed scrubbers. All the potential add-on controls are technically and economically infeasible for a boiler of this size and fuel type due to the increased energy use from fan and pump electrical requirements as well as additional environmental impacts such as chemical transport to the site and storage on-site, potential chemical release risks, and waste water discharge and solid waste disposal.

The Department finds that BACT for sulfur dioxide emissions from Boiler #1 is the use of biomass as a fuel and an emission limit of 0.12 lb/hr based on an emission factor of 0.025 lb/MMBtu from AP-42, Table 1.6-2, dated 9/03.

c. Nitrogen Oxides (NO<sub>x</sub>), Carbon Monoxide (CO), and Volatile Organic Compounds (VOC)

Emissions of NO<sub>x</sub>, CO, and VOC from biomass-fired boilers of this size are typically controlled through proper operation and maintenance per the manufacturer's emission-related instructions. Additional controls for NO<sub>x</sub> such as Selective Catalytic Reduction (SCR) and Selective Non-Catalytic Reduction (SNCR) were also considered. Add on controls available for of CO and VOC include oxidation catalysts and thermal oxidizers.

Both SCR and SNCR are technically feasible control technologies for minimizing NO<sub>x</sub>. However, they have a negative environmental impact of emissions of unreacted ammonia. In addition, due to the initial capital cost and the annual operating costs, these systems are typically only considered cost effective for units larger than Boiler #1.

Oxidation catalysts and thermal oxidizers both have high capital, maintenance, and operational costs considering the size of the boiler in question. These controls were determined to not be economically feasible.

The Department finds that BACT for NO<sub>x</sub>, CO, and VOC emissions for Boiler #1 is proper operation and maintenance of the unit and lb/hr emission limits of 1.06 lb/hr, 0.72 lb/hr, and 0.08 lb/hr, respectively, based on emission factors contained in AP-42, Tables 1.6-2 and 1.6-3, dated 9/03 for NO<sub>x</sub> and VOC, and the applicant's proposed emission rate for CO.

The BACT emission limits for Boiler #1 were based on the following:

- PM/PM<sub>10</sub> – 0.22 lb/MMBtu based on 06-096 C.M.R. ch. 115, BACT
- SO<sub>2</sub> – 0.025 lb/MMBtu based on AP-42 Table 1.6-2 dated 9/03
- NO<sub>x</sub> – 0.22 lb/MMBtu based on AP-42 Table 1.6-2 dated 9/03
- CO – 0.15 lb/MMBtu based on 06-096 C.M.R. ch. 115, BACT
- VOC – 0.017 lb/MMBtu based on AP-42 Table 1.6-3 dated 9/03
- Visible Emissions – 06-096 C.M.R. ch. 101

The BACT emission limits for Boiler #1 are the following:

Unit	Pollutant	lb/MMBtu
Boiler #1	PM	0.22

Unit	PM (lb/hr)	PM <sub>10</sub> (lb/hr)	SO <sub>2</sub> (lb/hr)	NO <sub>x</sub> (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Boiler #1	1.06	1.06	0.12	1.06	0.72	0.08

## 2. Visible Emissions

Visible emissions from Boiler #1 shall not exceed 30% opacity on a six-minute block average basis, except for periods of startup, shutdown, or malfunction during which time RSU #39 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 operating time, startups, shutdowns, and malfunctions for the boiler.
  - b. Develop and implement a written startup and shutdown plan for the boiler.
  - c. Limit the duration of unit startups, shutdowns, or malfunctions to not exceed one hour per occurrence.
  - d. Operate the boiler 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.
3. New Source Performance Standards (NSPS): 40 C.F.R. Part 60, Subpart Dc

Due to its size, Boiler #1 is not 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]

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

Boiler #1 is subject to *National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources*, 40 C.F.R. Part 63, Subpart JJJJJ, and the specific requirements are detailed in the section below along with the Subpart JJJJJ requirements for Boilers #2 and #3.

D. Boilers #2 and #3

RSU #39 plans to operate Boilers #2 and #3 to provide backup heat to the new elementary school. The boilers are rated at 2.3 MMBtu/hr each and will fire distillate fuel. Boilers #2 and #3 will exhaust through a common stack, designated Stack #2, at a height of 32 feet above ground level and with an inside diameter of one foot.

1. BACT Findings

RSU #39 submitted a BACT analysis for control of emissions from Boilers #2 and #3. Due to the size of the boilers, add-on pollution controls were not considered to be economically feasible. BACT for Boilers #2 and #3 shall be the use of good combustion practices, periodic tune-ups, the use of distillate fuel with a maximum sulfur content of 0.0015% by weight, and the emission limits listed in the table below.

The BACT emission limits for Boilers #2 and #3 were based on the following:

- PM/PM<sub>10</sub> – 0.08 lb/MMBtu based on 06-096 C.M.R. ch. 115, BACT
- SO<sub>2</sub> – based on firing distillate fuel with a maximum sulfur content of 0.0015% by weight
- NO<sub>x</sub> – 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
- Visible Emissions – 06-096 C.M.R. ch. 115, BACT

The BACT emission limits for Boilers #2 and #3 are the following:

Unit	PM (lb/hr)	PM <sub>10</sub> (lb/hr)	SO <sub>2</sub> (lb/hr)	NO <sub>x</sub> (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Boiler #2	0.18	0.18	0.01	0.33	0.08	0.01
Boiler #3	0.18	0.18	0.01	0.33	0.08	0.01

2. Visible Emissions

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

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

Due to the size of the Boilers #2 and #3, they are not 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]

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

Boilers #1-#3 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. Boilers #1-#3 are considered new boilers rated less than 10 MMBtu/hr.

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>.



1. Compliance Dates, Notifications, and Work Practice Requirements

a. Initial Notification of Compliance

An Initial Notification submittal to EPA for Boilers #1-#3 is due no later than 120 days after startup. [40 C.F.R. § 63.11225(a)(2)]

b. Boiler Tune-Up Program

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

Completion of an initial performance tune-up is not required for Boilers #1-3, because they are considered new units with applicable work practice standards or management practices. The applicable biennial tune-up specified below for Boiler #1 must be completed no more than 25 months after startup of the unit. The applicable five-year tune-ups specified below for Boilers #2 and #3 must be completed no more than 61 months after startup of the units. [40 C.F.R. §§ 63.11210(g) and 63.11214(a)]

(2) 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:

<b>Boiler Category</b>	<b>Tune-Up Frequency</b>
New or Existing Oil and Biomass boilers that are not designated as "Boilers with Less Frequent Tune-up Requirements" listed below <b>(Boiler #1)</b>	Every 2 years
<b>New and Existing Oil and Biomass Boilers with Less Frequent Tune-up Requirements</b>	
Oil fired boilers with a heat input capacity of $\leq 5$ MMBtu/hr <b>(Boilers #2 and #3)</b>	Every 5 years

[40 C.F.R. § 63.11223(a) and Table 2]

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

(i) 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. Delay of the burner inspection until the next scheduled shutdown is permitted for up to 72 months from the previous inspection for oil fired boilers less than or equal to 5 MMBtu/hour, boilers with oxygen trim systems, seasonal boilers, and limited use boilers.

[40 C.F.R. § 63.11223(b)(1)]

- (ii) 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)]
- (iii) 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. Delay of the inspection until the next scheduled shutdown is permitted for up to 72 months from the previous inspection for oil fired boilers less than or equal to 5 MMBtu/hour, boilers with oxygen trim systems, seasonal boilers, and limited use boilers. [40 C.F.R. § 63.11223(b)(3)]
- (iv) Optimize total emissions of CO, consistent with manufacturer's specifications. [40 C.F.R. § 63.11223(b)(4)]
- (v) 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)]
- (vi) 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)]
- (4) Tune-Up Report: A tune-up report shall be maintained onsite and, if requested, submitted to EPA. The report shall contain the following information:
  - (i) 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;
  - (ii) A description of any corrective actions taken as part of the tune-up of the boiler; and
  - (iii) 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)]

Per EPA, new boilers that only have the requirement to conduct regular tune-ups do not need to submit a NOCS. Therefore, a NOCS is not required for Boilers #1-#3.

c. Compliance Report

A compliance report for Boiler #1 shall be prepared by March 1<sup>st</sup> biennially which covers the previous two calendar years. A compliance report for Boilers #2 and #3 shall be prepared by March 1<sup>st</sup> every five years which covers the previous five calendar years. The reports shall be maintained by the source and submitted to the Department and/or to the EPA upon request. The reports must include the items contained in §§ 63.11225(b)(1) and (2), including the following:  
[40 C.F.R. § 63.11225(b)]

- (1) Company name and address;
- (2) A statement of whether the source has complied with all the relevant requirements of this Subpart;
- (3) 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;
- (4) The following certifications, as applicable:
  - (i) "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."
  - (ii) "No secondary materials that are solid waste were combusted in any affected unit."
  - (iii) "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."

2. Recordkeeping

Records shall be maintained consistent with the requirements of 40 C.F.R. Part 63, Subpart JJJJJJ 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.

EPA requires submission of Notification of Compliance Status reports for tune-ups through their electronic reporting system. [40 C.F.R. § 63.11225(a)(4)(vi)]

F. Generator #1

RSU #39 plans to operate one emergency generator, Generator #1. The emergency generator is a generator set consisting of an engine and an electrical generator. Generator #1 has an engine rated at 3.05 MMBtu/hr which fires distillate fuel. Generator #1 was manufactured in 2017.

1. BACT Findings

The BACT emission limits for Generator #1 are based on the following:

- PM/PM<sub>10</sub> - 0.12 lb/MMBtu from 06-096 C.M.R. ch. 103
- SO<sub>2</sub> - combustion of distillate fuel with a maximum sulfur content not to exceed 15 ppm (0.0015% sulfur by weight)
- NO<sub>x</sub> - 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 - 0.35 lb/MMBtu from AP-42 table 3.3-1 dated 10/96
- Visible Emissions - 06-096 C.M.R. ch. 115, BACT

The BACT emission limits for Generator #1 are the following:

Unit	Pollutant	lb/MMBtu
Generator #1	PM	0.12

Unit	PM (lb/hr)	PM <sub>10</sub> (lb/hr)	SO <sub>2</sub> (lb/hr)	NO <sub>x</sub> (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Generator #1	0.37	0.37	0.01	13.45	2.90	1.07

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

2. New Source Performance Standards (NSPS)

*Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*, 40 C.F.R. Part 60, Subpart IIII is applicable to the emergency engine listed above since the unit was ordered after July 11, 2005, and manufactured after April 1, 2006. [40 C.F.R. § 60.4200] By meeting the requirements of 40 C.F.R. Part 60, 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 C.F.R. Part 63, Subpart ZZZZ. [40 C.F.R. § 63.6590(c)]

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 III 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 shall not exceed 15 ppm sulfur (0.0015% sulfur). [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. RSU #39 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 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

RSU #39 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)]

G. Fugitive Emissions

Visible emissions from a fugitive emission source (including stockpiles and roadways) shall not exceed 20% opacity on a five-minute block average basis.

H. General Process Emissions

Visible emissions from any general process source shall not exceed 20% opacity on a six-minute block average basis.

I. 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:

- Operating Boilers #1, #2, and #3 for 8,760 hrs/yr each;
- Operating Generator #1 for 100 hrs/yr.

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 <sub>10</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO	VOC
Boiler #1	4.6	4.6	0.5	4.6	3.2	0.4
Boilers #2 and #3	1.6	1.6	0.1	2.9	0.7	0.1
Generator #1	0.1	0.1	0.1	0.7	0.1	0.1
<b>Total TPY</b>	<b>6.3</b>	<b>6.3</b>	<b>0.7</b>	<b>8.2</b>	<b>4.1</b>	<b>0.6</b>

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 <sub>10</sub>	25
SO <sub>2</sub>	50
NO <sub>x</sub>	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-1132-71-A-N 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 the written test report by the Department, or another alternative timeframe approved by the Department, 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 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]

- (16) The licensee 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). [06-096 C.M.R. ch. 115]

**SPECIFIC CONDITIONS**

(17) **Boiler #1**

A. Boiler #1 is licensed to fire biomass fuel. [06-096 C.M.R. ch. 115, BACT]

B. Emissions shall not exceed the following:

Emission Unit	Pollutant	lb/MMBtu	Origin and Authority
Boiler #1	PM	0.22	06-096 C.M.R. ch. 115, BACT

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

Emission Unit	PM (lb/hr)	PM <sub>10</sub> (lb/hr)	SO <sub>2</sub> (lb/hr)	NO <sub>x</sub> (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Boiler #1	1.06	1.06	0.12	1.06	0.72	0.08

D. Visible emissions from the boiler shall not exceed 30% opacity on a six-minute block average basis, except for periods of startup, shutdown, or malfunction during which time RSU #39 may comply with the following work practice standards in lieu of the numerical visible emissions standard. [06-096 C.M.R. ch. 101 (3)(A)(5)]

1. Maintain a log (written or electronic) of the date, time, and duration of all operating time, startups, shutdowns, and malfunctions for the boiler.
2. Develop and implement a written startup and shutdown plan for the boiler.
3. Limit the duration of unit startups, shutdowns, or malfunctions to not exceed one hour per occurrence.
4. Operate the boiler 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.

(18) **Boilers #2 and #3**

- A. Boilers #2 and #3 are licensed to fire distillate fuel as defined in this license. [06-096 C.M.R. ch. 115, BACT]
- B. Emissions shall not exceed the following [06-096 C.M.R. ch. 115, BACT]:

<b>Emission Unit</b>	<b>PM (lb/hr)</b>	<b>PM<sub>10</sub> (lb/hr)</b>	<b>SO<sub>2</sub> (lb/hr)</b>	<b>NO<sub>x</sub> (lb/hr)</b>	<b>CO (lb/hr)</b>	<b>VOC (lb/hr)</b>
Boiler #2	0.18	0.18	0.01	0.33	0.08	0.01
Boiler #3	0.18	0.18	0.01	0.33	0.08	0.01

- C. Visible emissions from Stack #2 shall not exceed 20% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 115, BACT]

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

RSU #39 shall comply with all requirements of 40 C.F.R. Part 63, Subpart JJJJJ applicable to Boilers #1-#3 including, but not limited to, the following:  
 [incorporated under 06-096 C.M.R. ch. 115, BACT]

- A. An Initial Notification submittal to EPA is due within 120 days after the startup of Boilers #1-#3. [40 C.F.R. § 63.11225(a)(2)]
- B. The facility shall implement a boiler tune-up program. [40 C.F.R. § 63.11223]

The applicable biennial tune-up specified below must be completed no more than 25 months after startup of Boiler #1. The applicable five-year tune-ups specified below must be completed no more than 61 months after startup for Boilers #2 and #3.

- 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:

<b>Boiler Category</b>	<b>Tune-Up Frequency</b>
New or Existing Oil, Biomass and Coal fired boilers that are not designated as "Boilers with less frequent tune up requirements" listed below <b>(Boiler #1)</b>	Every 2 years
<b><u>New and Existing Oil, Biomass, and Coal fired Boilers with Less Frequent Tune-up Requirements</u></b>	
Oil fired boilers with a heat input capacity of ≤5MMBtu/hr <b>(Boilers #2 and #3)</b>	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, not to exceed 36 months from the previous inspection. Delay of the burner inspection until the next scheduled shutdown is permitted for up to 72 months from the previous inspection for oil fired boilers less than or equal to 5 MMBtu/hour, boilers with oxygen trim systems, seasonal boilers, and limited use boilers. [40 C.F.R. § 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 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, not to exceed 36 months from the previous inspection. Delay of the inspection until the next scheduled shutdown is permitted for up to 72 months from the previous inspection for oil fired boilers less than or equal to 5 MMBtu/hour, boilers with oxygen trim systems, seasonal boilers, and limited use boilers. [40 C.F.R. § 63.11223(b)(3)]
  - 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 submitted to the Department and EPA upon request. The report shall contain the following information:
  - a. 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;

- b. A description of any corrective actions taken as part of the tune-up of the boiler; and
- c. 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)]

### C. Compliance Report

A compliance report for Boiler #1 shall be prepared by March 1<sup>st</sup> biennially which covers the previous two calendar years. A compliance report for Boilers #2 and #3 shall be prepared by March 1<sup>st</sup> 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)]

1. Company name and address;
2. A statement of whether the source has complied with all the relevant requirements of this Subpart;
3. 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;
4. The following certifications, as applicable:
  - a. "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."
  - b. "No secondary materials that are solid waste were combusted in any affected unit."
  - c. "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."

D. 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)]

(20) **Generator #1**

- A. Generator #1 is licensed to fire distillate fuel as defined in this license. [06-096 C.M.R. ch. 115, BACT]
- B. Generator #1 shall be limited to 100 hours of operation per calendar year, excluding operating hours during emergency situations. [06-096 C.M.R. ch. 115, BACT]
- C. Emissions shall not exceed the following:

Unit	Pollutant	lb/MMBtu	Origin and Authority
Generator #1	PM	0.12	06-096 C.M.R. ch. 103, § (2)(B)(1)(a)

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

Unit	PM (lb/hr)	PM <sub>10</sub> (lb/hr)	SO <sub>2</sub> (lb/hr)	NO <sub>x</sub> (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Generator #1	0.37	0.37	0.01	13.45	2.90	1.07



**E. Visible Emissions**

Visible emissions from Generator #1 shall not exceed 20% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 115, BACT]

**F. Generator #1 shall meet the applicable requirements of 40 C.F.R. Part 60, Subpart III, including the following: [incorporated under 06-096 C.M.R. ch. 115, BPT/BACT]**

**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). Compliance with the fuel sulfur content limit 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. [40 C.F.R. § 60.4207(b) and 06-096 C.M.R. ch. 115, BPT]

**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, BPT]

b. RSU #39 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. RSU #39 may only change those emission-related settings that are permitted by the manufacturer. [40 C.F.R. § 60.4211(a)]

(21) **Fugitive Emissions**

Visible emissions from a fugitive emission source (including stockpiles and roadways) shall not exceed 20% opacity on a five-minute block average basis. [06-096 C.M.R. ch. 115, BACT]

(22) **General Process Sources**

Visible emissions from any general process source shall not exceed 20% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 115, BACT]

DONE AND DATED IN AUGUSTA, MAINE THIS 28<sup>th</sup> DAY OF OCTOBER, 2021.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY:  for  
MELANIE LOYZIM, 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: 12/13/17

Date of application acceptance: 12/18/17

Date filed with the Board of Environmental Protection:

This Order prepared by Chris Ham, Bureau of Air Quality.

