



DEPARTMENT ORDER

**The Jackson Laboratory
 Hancock County
 Ellsworth, Maine
 A-1127-71-A-N (SM)**

**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

The Jackson Laboratory (JAX) has applied for an Air Emission License for the operation of emission sources associated with their mouse production facility.

The equipment addressed in this license is located at 21 Kingsland Crossing, Ellsworth, Maine.

B. Emission Equipment

The following equipment is addressed in this air emission license:

Boilers

Equipment	Max. Capacity (MMBtu/hr)	Maximum Firing Rate (gal/hr)	Fuel Type, % sulfur	Date of Manuf.	Stack #
Boiler #1	25.0	178.6	distillate fuel, 0.0015%	2017	B1
		276.2	propane, negligible		
Boiler #2	25.0	178.6	distillate fuel, 0.0015%	2017	B2
		276.2	propane, negligible		
Boiler #3	8.0	57.1	distillate fuel, 0.0015%	2017	B3
		88.4	propane, negligible		

Vaporizers

Equipment	Max. Input Capacity (MMBtu/hr)	Maximum Firing Rate (gal/hr)	Fuel Type, % sulfur	Date of Manuf.
Vaporizer #1	1.4	15.5	propane, negligible	2017
Vaporizer #2	1.4	15.5	propane, negligible	2017

Generators

Equipment	Max. Input Capacity (MMBtu/hr)	Rated Output Capacity	Fuel Type, % sulfur	Maximum Firing Rate (gal/hr)	Date of Manuf.	Stack #
Generator #1	12.6	1250 kW	distillate fuel, 0.0015%	90.5	2017	G1
Generator #2	12.6	1250 kW	distillate fuel, 0.0015%	90.5	2017	G2

Process Equipment

Equipment	Process Rate	Pollution Control Equipment
EtO Sterilizer #1	127 g EtO/batch	Catalytic Oxidizer (Abator)

The facility will also include two (2) 40,000 gallon fuel storage tanks, one for distillate fuel and one for propane. These tanks are not subject to any federal air regulations and have the potential to emit less than one ton per year of regulated pollutants. The fuel tanks are therefore considered insignificant activities and mentioned for completeness purposes only.

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.

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.

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	8.3	100
PM ₁₀	8.3	100
PM _{2.5}	8.3	100
SO ₂	0.5	100
NO _x	37.0	100
CO	19.4	100
VOC	5.1	50
CO _{2e}	< 100,000	100,000

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.

With the operating hours restriction on the emergency generators and the use of controls on the sterilizer, the facility is licensed as follows:

- As a synthetic minor source of air emissions, because the licensed emissions are limited to below the 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. Boilers #1, #2, and #3

JAX plans to install three boilers for facility heating and hot water. Boilers #1 and #2 are rated at 25.0 MMBtu/hr, and Boiler #3 is rated at 8.0 MMBtu/hr. All three boilers are capable of firing either distillate fuel or propane, and JAX intends to utilize both fuels. The sulfur content of the distillate fuel fired shall not exceed 0.0015% by weight. Each boiler exhausts through its own stack.

1. BACT Findings

JAX submitted a BACT analysis for control of emissions from Boilers #1, #2, and #3.

a. Particulate Matter (PM, PM₁₀, PM_{2.5})

JAX has proposed to burn only low-ash content fuels (propane and distillate fuel) in the boilers and to optimize combustion using oxygen trim systems. Additional add-on pollution controls are not economically feasible.

BACT for PM/PM₁₀ emissions from the boilers is the use of oxygen trim systems on each boiler and the emission limits listed in the tables below.

b. Sulfur Dioxide (SO₂)

JAX has proposed to fire only propane and distillate fuel with a sulfur content not to exceed 0.0015% by weight. The use of these fuels results in minimal emissions of SO₂, and additional add-on pollution controls are not economically feasible.

BACT for SO₂ emissions from the boilers is the use of propane and ultra-low-sulfur distillate fuel and the emission limits listed in the tables below.

c. Nitrogen Oxides (NO_x)

JAX considered several control strategies for the control of NO_x from the boilers including Selective Catalytic Reduction (SCR), Selective Non-Catalytic Reduction (SNCR), water/steam injection, flue gas recirculation (FGR), and use of oxygen trim systems.

Both SCR and SNCR are technically feasible control technologies for minimizing NO_x. 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 greater than 50 MMBtu/hr.

Water/steam injection and FGR have similar NO_x reduction efficiencies. However, water/steam injection results in reduced boiler efficiency of approximately 5%.

The use of FGR on Boiler #1 and Boiler #2 as well as oxygen trim systems on all boilers has been determined to be feasible and has been selected as part of the BACT strategy. The use of FGR on Boiler #3 is not available due to the unit's size.

BACT for NO_x emissions from the boilers is the use of FGR on Boilers #1 and #2, oxygen trim systems on all three boilers, and the emission limits listed in the tables below.

d. Carbon Monoxide (CO) and Volatile Organic Compounds (VOC)

JAX considered several control strategies for the control of CO and VOC from the boilers including oxidation catalysts, thermal oxidizers, and use of oxygen trim systems.

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

An oxygen trim system monitors the O₂ content in the exhaust gas and automatically adjusts the fuel valve or air damper to optimize the air-to-fuel ratio. The use of oxygen trim systems has been determined to be feasible and has been selected as part of the BACT strategy for all three boilers.

BACT for CO and VOC emissions from the boilers is the use of oxygen trim systems on each boiler and the emission limits listed in the tables below.

e. Emission Limits

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

Distillate Fuel

PM/PM ₁₀ /PM _{2.5}	– 0.03 lb/MMBtu based on 06-096 C.M.R. ch. 115, BACT
SO ₂	– based on firing distillate fuel with a maximum sulfur content of 0.0015% by weight
NO _x	– 0.110 lb/MMBtu based on 06-096 C.M.R. ch. 115, BACT and manufacturer's specifications
CO	– 0.036 lb/MMBtu based on 06-096 C.M.R. ch. 115, BACT and manufacturer's specifications
VOC	– 0.016 lb/MMBtu based on 06-096 C.M.R. ch. 115, BACT and manufacturer's specifications
Visible Emissions	– 06-096 C.M.R. ch. 115, BACT

Propane

- PM/PM₁₀/PM_{2.5} – 0.03 lb/MMBtu based on 06-096 C.M.R. ch. 115, BACT
- SO₂ – 0.001 lb/MMBtu based on 06-096 C.M.R. ch. 115, BACT and manufacturer's specifications
- NO_x – 0.049 lb/MMBtu based on 06-096 C.M.R. ch. 115, BACT and manufacturer's specifications
- CO – 0.073 lb/MMBtu based on 06-096 C.M.R. ch. 115, BACT and manufacturer's specifications
- VOC – 0.008 lb/MMBtu based on 06-096 C.M.R. ch. 115, BACT and manufacturer's specifications
- Visible Emissions – 06-096 C.M.R. ch. 115, BACT

The BACT emission limits for Boiler #3 were based on the following:

Distillate Fuel

- PM/PM₁₀/PM_{2.5} – 0.03 lb/MMBtu based on 06-096 C.M.R. ch. 115, BACT
- SO₂ – based on firing distillate fuel with a maximum sulfur content of 0.0015% by weight
- NO_x – 0.20 lb/MMBtu based on 06-096 C.M.R. ch. 115, BACT and manufacturer's specifications
- CO – 0.039 lb/MMBtu based on 06-096 C.M.R. ch. 115, BACT and manufacturer's specifications
- VOC – 0.03 lb/MMBtu based on 06-096 C.M.R. ch. 115, BACT and manufacturer's specifications
- Visible Emissions – 06-096 C.M.R. ch. 115, BACT

Propane

- PM/PM₁₀/PM_{2.5} – 0.03 lb/MMBtu based on 06-096 C.M.R. ch. 115, BACT
- SO₂ – 0.001 lb/MMBtu based on 06-096 C.M.R. ch. 115, BACT and manufacturer's specifications
- NO_x – 0.053 lb/MMBtu based on 06-096 C.M.R. ch. 115, BACT and manufacturer's specifications
- CO – 0.038 lb/MMBtu based on 06-096 C.M.R. ch. 115, BACT and manufacturer's specifications
- VOC – 0.008 lb/MMBtu based on 06-096 C.M.R. ch. 115, BACT and manufacturer's specifications
- Visible Emissions – 06-096 C.M.R. ch. 115, BACT

The BACT emission limits for the boilers are the following:

Unit	Pollutant	lb/MMBtu
Boiler #1	PM	0.03
Boiler #2	PM	0.03
Boiler #3	PM	0.03

Unit	PM (lb/hr)	PM ₁₀ (lb/hr)	PM _{2.5} (lb/hr)	SO ₂ (lb/hr)	NO _x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Boiler #1 distillate fuel	0.75	0.75	0.75	0.04	2.75	0.90	0.40
Boiler #1 propane	0.75	0.75	0.75	0.03	1.23	1.83	0.21
Boiler #2 distillate fuel	0.75	0.75	0.75	0.04	2.75	0.90	0.40
Boiler #2 propane	0.75	0.75	0.75	0.03	1.23	1.83	0.21
Boiler #3 distillate fuel	0.24	0.24	0.24	0.01	1.60	0.31	0.24
Boiler #3 propane	0.24	0.24	0.24	0.01	0.42	0.31	0.07

Visible emissions from any boiler firing distillate fuel shall not exceed 20% opacity on a six-minute block average basis.

Visible emissions from any boiler firing propane shall not exceed 10% opacity on a six-minute block average basis.

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

Due to its size, Boiler #3 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]

Boilers #1 and #2 are subject to 40 C.F.R. Part 60, Subpart Dc. JAX shall comply with all requirements of 40 C.F.R. Part 60, Subpart Dc applicable to Boilers #1 and #2 including, but not limited to, the following:

- a. JAX shall submit notification to EPA and the Department of the date of construction and initial start-up. This notification shall include the design heat input capacity of the boiler and the type of fuel to be combusted.

[40 C.F.R. § 60.48c(a)]

- b. JAX shall perform and submit to EPA and the Department an initial performance test within 30 days after achieving the maximum production rate at which the facility will be operated but not later than 180 days after the initial start-up of the facility. The performance test shall consist of fuel supplier certification of the sulfur content of the fuel fired in each boiler. The fuel supplier certification must contain the name of the oil supplier, the sulfur content (or maximum sulfur content) of the oil, and a statement from the oil supplier that the oil complies with the specifications under the definition of distillate oil as contained in this license. [40 C.F.R. §§ 60.44c(h) and 60.48c(f)]
- c. JAX shall record and maintain records of the amounts of each fuel combusted in each boiler during each calendar month. [40 C.F.R. § 60.48c(g)]
- d. JAX shall submit semi-annual reports to EPA and to the Department. These reports shall include the calendar dates covered in the reporting period, records of fuel supplier certifications, and a certified statement signed by the owner or operator of the facility that the records of fuel supplier certifications submitted represent all of the fuel combusted during the reporting period. The semi-annual reports are due within 30 days of the end of each six-month period. [40 C.F.R. §§ 60.48c(d), (e), (f), and (j)]
- e. The following address for EPA and Maine DEP shall be used for any reports or notifications required to be copied to them:

U.S. Environmental Protection Agency, Region I
5 Post Office Square, Suite 100 (OES04-2)
Boston, MA 02109-3912
Attn: Air Compliance Clerk

Maine DEP, Bureau of Air Quality
106 Hogan Rd, Suite 6
Bangor, ME 04401
Attn: Air Compliance Inspector

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

Boilers #1, #2, and #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. The units are considered new oil-fired boilers.
[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. At this time, the Department has not taken delegation of this federal rule promulgated by EPA; however, JAX is still subject to the

requirements. Notification forms and additional rule information can be found on the following website: <http://www.epa.gov/ttn/atw/boiler/boilerpg.html>.

a. Compliance Dates and Notifications

- (1) Boilers #1, #2, and #3 shall become subject to Subpart JJJJJ upon startup. [40 C.F.R. § 63.11196(c)]
- (2) An Initial Notification submittal to EPA is due within 120 days of startup. [40 C.F.R. § 63.11225(a)(2)]
- (3) JAX is not required to submit a Notification of Compliance Status for Boilers #1, #2, or #3. [40 C.F.R. § 63.11225(a)(4)]

b. Emission Limits and Work Practice Requirements

- (1) New oil-fired boilers that combust only gaseous fuel and ultra-low-sulfur liquid fuel (i.e. distillate fuel with a sulfur content not to exceed 0.0015% by weight) are exempt from the PM emission limits of Subpart JJJJJ. [40 C.F.R. § 63.11210(f)]
- (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 chart below:

Boiler Category	Tune-Up Frequency
New oil-fired boilers with oxygen trim system which maintains an optimum air-to-fuel ratio that would otherwise be subject to a biennial tune-up	Every 5 years

[40 C.F.R. § 63.11223(a) and Table 2]

- (iii) Boilers #1, #2, and #3 are not required to complete an initial performance tune-up. However, the first tune-up is due no later than 61 months after initial startup. [40 C.F.R. § 63.11210(g)]

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

1. As applicable, inspect the burner, and clean or replace any component of the burner as necessary. Delay of the burner inspection until the next scheduled shutdown is permitted for up to 72 months from the previous inspection. [40 C.F.R. § 63.11223(b)(1)]
2. Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern, consistent with the manufacturer's specifications. [40 C.F.R. § 63.11223(b)(2)]
3. Inspect the system controlling the air-to-fuel ratio, as applicable, and ensure it is correctly calibrated and functioning properly. Delay of the inspection until the next scheduled shutdown is permitted for up to 72 months from the previous inspection. [40 C.F.R. § 63.11223(b)(3)]
4. Optimize total emissions of CO, consistent with manufacturer's specifications. [40 C.F.R. § 63.11223(b)(4)]
5. Measure the concentration in the effluent stream of CO in parts per million by volume (ppmv), and oxygen in volume percent, before and after adjustments are made (measurements may be either on a dry or wet basis, as long as it is the same basis before and after the adjustments are made). Measurements may be taken using a portable CO analyzer. [40 C.F.R. § 63.11223(b)(5)]
6. If a unit is not operating on the required date for a tune-up, the tune-up must be conducted within 30 days of start-up. [40 C.F.R. § 63.11223(b)(7)]

(v) 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)]

(3) Compliance Report

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

- (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."

c. 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-ups, procedures followed for tune-up, and the manufacturer's specifications to which the boiler was tuned;
- (3) Records, on a monthly basis, of the type(s) of fuel combusted in each boiler;
- (4) Records of the occurrence and duration of each malfunction of each applicable boiler; and
- (5) 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.

C. Vaporizers #1 and #2

The propane used in the boilers is stored as a liquid that must be vaporized prior to use. Two direct-fired liquefied propane gas vaporizers will be installed for this purpose. Operating on temperature control, the vaporizers function only as-needed to create enough vapor to replace that being consumed. A small portion of the propane gas being supplied to the boilers will be used to supply the vaporizer burners which are each rated at 1.4 MMBtu/hr.

BACT Findings

The BACT emission limits for the vaporizers were based on the following:

- PM/PM₁₀/PM_{2.5} – 0.03 lb/MMBtu based on 06-096 C.M.R. ch. 115, BACT
- SO₂ – 0.018 lb/1000 gal based on AP-42 Table 1.5-1 dated 7/08
- NO_x – 13 lb/1000 gal based on AP-42 Table 1.5-1 dated 7/08
- CO – 7.5 lb/1000 gal based on AP-42 Table 1.5-1 dated 7/08
- VOC – 1 lb/1000 gal based on AP-42 Table 1.5-1 dated 7/08
- Visible Emissions – 06-096 C.M.R. ch. 115, BACT

The BACT emission limits for the vaporizers are the following:

Unit	PM (lb/hr)	PM ₁₀ (lb/hr)	PM _{2.5} (lb/hr)	SO ₂ (lb/hr)	NO _x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Vaporizer #1	0.04	0.04	0.04	–	0.20	0.12	0.02
Vaporizer #2	0.04	0.04	0.04	–	0.20	0.12	0.02

Visible emissions from each vaporizer shall not exceed 10% opacity on a six-minute block average basis.

D. Generators #1 and #2

JAX plans to install two new emergency generators. The emergency generators are generator sets with each gen set consisting of an engine and an electrical generator. Generators #1 and #2 each have engines rated at 12.6 MMBtu/hr which fire distillate fuel.

1. BACT Findings

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

- PM/PM₁₀/PM_{2.5} - 0.12 lb/MMBtu from 06-096 C.M.R. ch. 103
- SO₂ - combustion of distillate fuel with a maximum sulfur content not to exceed 15 ppm (0.0015% sulfur by weight)
- NO_x - 3.2 lb/MMBtu from AP-42 dated 10/96
- CO - 0.85 lb/MMBtu from AP-42 dated 10/96
- VOC - 0.09 lb/MMBtu from AP-42 dated 10/96
- Opacity - 06-096 C.M.R. ch. 115, BACT

The BACT emission limits for the generators are the following:

Unit	Pollutant	lb/MMBtu
Generator #1	PM	0.12
Generator #2	PM	0.12

Unit	PM (lb/hr)	PM ₁₀ (lb/hr)	PM _{2.5} (lb/hr)	SO ₂ (lb/hr)	NO _x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Generator #1	1.51	1.51	1.51	0.02	40.26	10.69	1.13
Generator #2	1.51	1.51	1.51	0.02	40.26	10.69	1.13

Visible emissions from each of the generators shall not exceed 20% opacity on a six-minute block average basis.

2. 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 the emergency engines listed above since the units were 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 units 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. At this time, the Department has not taken delegation of this federal rule promulgated by EPA; however, JAX is still subject to the requirements.

a. Emergency Engine Designation and Operating Criteria

Under 40 C.F.R. Part 60, Subpart III, 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 III, 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 engines 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 engines 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 each engine. [40 C.F.R. § 60.4209(a)]

(4) Operation and Maintenance Requirements

The engines shall be operated and maintained according to the manufacturer's emission-related written instructions or procedures developed by JAX that are approved by the engine manufacturer. JAX 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 engines, the units shall each 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

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

E. EtO Sterilizer #1

JAX proposes to install a 3M™ Steri-VAC GS5X ethylene oxide (EtO) sterilizer with a chamber capacity of 4.8 cubic feet. EtO Sterilizer #1 will use sealed EtO cartridges that are only punctured once the cartridge is inside the locked, sealed sterilization chamber, minimizing the potential for EtO leaks. The EtO cartridges are single-use and contain 127 grams of EtO each.

1. BACT Findings

The proposed sterilization unit emits EtO which is both a VOC and a HAP.

EtO emissions can be controlled using add-on pollution control equipment such as wet scrubbers, catalytic oxidizers, or condensers, all three of which can achieve control efficiencies greater than 99%. Wet scrubbers produce a wastewater effluent that requires disposal and/or treatment. Condensers also produce a by-product ethylene oxide stream which would require disposal and treatment.

JAX proposes to install a catalytic oxidizer known as an abator. The 3M™ EtO Abator Model 50AN converts the EtO exhausted from the sterilization unit into carbon dioxide and water vapor. The exothermic reaction occurs in the presence of a proprietary catalyst with a lifetime of 930 batches and has an EtO destruction efficiency of 99.9%. Operating continuously with the catalytic oxidizer, EtO Sterilizer #1 has the potential to emit less than 10 pounds per year of EtO which is half of the insignificant emissions threshold for EtO as identified in 06-096 C.M.R. ch. 115, Appendix B(C).

BACT for EtO Sterilizer #1 shall be operation and maintenance of the unit according to the manufacturer's specifications. The catalytic oxidizer shall not be used for more than 930 batches without replacement. JAX shall keep records of all maintenance performed on EtO Sterilizer #1 and the associated catalytic oxidizer as well as the number of batches processed between catalytic oxidizer replacement.

Visible emissions from EtO Sterilizer #1 shall not exceed 10% opacity on a six (6)-minute block average basis.

2. National Emission Standards for Hazardous Air Pollutants

JAX is not subject to *National Emission Standards for Hospital Ethylene Oxide Sterilizers*, 40 C.F.R. Part 63, Subpart WWWW as JAX does not provide medical care and treatment for patients under supervision of licensed physicians or under nursing care. Therefore, JAX does not meet the definition of a hospital and is not subject to this subpart.

JAX is not subject to *Ethylene Oxide Emissions Standards for Sterilization Facilities*, 40 C.F.R. Part 63, Subpart O as JAX does not have the potential to use more than 1.0 ton/year of EtO. In addition, JAX is further exempt from this regulation as it is a research or laboratory facility as defined in the *Clean Air Act Amendments of 1990*, § 112(C)(7).

F. Emission Statements

JAX is subject to emissions inventory requirements contained in *Emission Statements*, 06-096 C.M.R. ch. 137. JAX shall keep the following records in order to comply with this rule:

1. The amount of each fuel fired in each boiler on a monthly basis;
2. The amount of distillate fuel fired in each generator on a monthly basis;
3. The sulfur content of the distillate fuel fired in the boilers and generators
4. The amount of propane fired in the vaporizers on a monthly basis;
5. Emissions of EtO from the sterilizer based on the number of batches processed and a catalytic oxidizer efficiency of 99.9%; and
6. Hours of operation for each emission unit on a monthly basis.

G. Annual Emissions

1. Total Annual Emissions

JAX shall be restricted to the following annual emissions, based on a 12-month rolling total. The tons per year limits were calculated based on the following:

- Operating each boiler for 8760 hr/year and selecting the highest emissions from each fuel;
- Operating each vaporizer for 8760 hr/year;
- Operating each generator for 100 hr/year; and
- Operating the sterilizer for 8760 hr/year.

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

	PM	PM ₁₀	PM _{2.5}	SO ₂	NO _x	CO	VOC
Boiler #1	3.3	3.3	3.3	0.2	12.1	8.0	1.8
Boiler #2	3.3	3.3	3.3	0.2	12.1	8.0	1.8
Boiler #3	1.1	1.1	1.1	0.1	7.0	1.4	1.1
Vaporizer #1	0.2	0.2	0.2	–	0.9	0.5	0.1
Vaporizer #2	0.2	0.2	0.2	–	0.9	0.5	0.1
Generator #1	0.1	0.1	0.1	0.1	2.0	0.5	0.1
Generator #2	0.1	0.1	0.1	0.1	2.0	0.5	0.1
Total TPY	8.3	8.3	8.3	0.7	37.0	19.4	5.1

Pollutant	Tons/year
Total HAP	1.0

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;
- 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.

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
PM _{2.5}	15
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-1127-71-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 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) **Boilers #1, #2, and #3**

A. Fuel

- Boilers #1, #2, and #3 are each licensed to fire propane and distillate fuel. [06-096 C.M.R. ch. 115, BACT]
- JAX shall fire distillate fuel with a maximum sulfur content not to exceed 0.0015% by weight. [06-096 C.M.R. ch. 115, BACT]

B. JAX shall operate FGR on Boilers #1 and #2 and oxygen trim systems on all boilers to control emissions. [06-096 C.M.R. ch. 115, BACT]

C. Emissions shall not exceed the following:

Emission Unit	Pollutant	lb/MMBtu	Origin and Authority
Boiler #1	PM	0.03	06-096 C.M.R. ch. 115, BACT
Boiler #2	PM	0.03	06-096 C.M.R. ch. 115, BACT
Boiler #3	PM	0.03	06-096 C.M.R. ch. 115, BACT

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

Emission Unit	PM (lb/hr)	PM₁₀ (lb/hr)	PM_{2.5} (lb/hr)	SO₂ (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Boiler #1 distillate fuel	0.75	0.75	0.75	0.04	2.75	0.90	0.40
Boiler #1 propane	0.75	0.75	0.75	0.03	1.23	1.83	0.21
Boiler #2 distillate fuel	0.75	0.75	0.75	0.04	2.75	0.90	0.40
Boiler #2 propane	0.75	0.75	0.75	0.03	1.23	1.83	0.21
Boiler #3 distillate fuel	0.24	0.24	0.24	0.01	1.60	0.31	0.24
Boiler #3 propane	0.24	0.24	0.24	0.01	0.42	0.31	0.07

- E. Visible emissions from any boiler firing distillate fuel shall not exceed 20% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 115, BACT]
- F. Visible emissions from any boiler firing propane shall not exceed 10% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 115, BACT]
- G. JAX shall comply with all requirements of 40 C.F.R. Part 60, Subpart Dc applicable to Boilers #1 and #2 including, but not limited to, the following:
- a. JAX shall submit notification to EPA and the Department of the date of construction and initial start-up. This notification shall include the design heat input capacity of the boiler and the type of fuel to be combusted. [40 C.F.R. § 60.48c(a)]
 - b. JAX shall perform and submit to EPA and the Department an initial performance test within 30 days after achieving the maximum production rate at which the facility will be operated but not later than 180 days after the initial start-up of the facility. The performance test shall consist of fuel supplier certification of the sulfur content of the fuel fired in each boiler. The fuel supplier certification must contain the name of the oil supplier, the sulfur content (or maximum sulfur content) of the oil, and a statement from the oil supplier that the oil complies with the specifications under the definition of distillate oil as contained in this license. [40 C.F.R. §§ 60.44c(h) and 60.48c(f)]
 - c. JAX shall record and maintain records of the amounts of each fuel combusted in each boiler during each calendar month. [40 C.F.R. § 60.48c(g)]

- d. JAX shall submit semi-annual reports to EPA and to the Department. These reports shall include the calendar dates covered in the reporting period, records of fuel supplier certifications, and a certified statement signed by the owner or operator of the facility that the records of fuel supplier certifications submitted represent all of the fuel combusted during the reporting period. The semi-annual reports are due within 30 days of the end of each six-month period.
[40 C.F.R. §§ 60.48c(d), (e), (f), and (j)]

H. JAX shall comply with all requirements of 40 C.F.R. Part 63, Subpart JJJJJ applicable to Boilers #1, #2, and #3 including, but not limited to, the following: [incorporated under 06-096 C.M.R. ch. 115, BACT]

1. An Initial Notification submittal to EPA is due within 120 days of startup.
[40 C.F.R. § 63.11225(a)(2)]
2. The facility shall implement a boiler tune-up program. [40 C.F.R. § 63.11223]
 - a. Each tune-up shall be conducted at a frequency specified by the rule and based on the size, age, and operations of the boiler. See chart below:

Boiler Category	Tune-Up Frequency
New oil-fired boilers with oxygen trim system which maintains an optimum air-to-fuel ratio that would otherwise be subject to a biennial tune-up	Every 5 years

[40 C.F.R. § 63.11223(a) and Table 2]

- b. Boilers #1, #2, and #3 are not required to complete an initial performance tune-up. However, the first tune-up is due no later than 61 months after initial startup. [40 C.F.R. § 63.11210(g)]
- c. The boiler tune-up program, conducted to demonstrate continuous compliance, shall be performed as specified below:
 - (1) As applicable, inspect the burner, and clean or replace any component of the burner as necessary. Delay of the burner inspection until the next scheduled shutdown is permitted for up to 72 months from the previous inspection. [40 C.F.R. § 63.11223(b)(1)]
 - (2) Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern, consistent with the manufacturer's specifications. [40 C.F.R. § 63.11223(b)(2)]
 - (3) Inspect the system controlling the air-to-fuel ratio, as applicable, and ensure it is correctly calibrated and functioning properly. Delay of the inspection until the next scheduled shutdown is permitted for up to 72 months from the previous inspection. [40 C.F.R. § 63.11223(b)(3)]

- (4) Optimize total emissions of CO, consistent with manufacturer's specifications. [40 C.F.R. § 63.11223(b)(4)]
- (5) Measure the concentration in the effluent stream of CO in parts per million by volume (ppmv), and oxygen in volume percent, before and after adjustments are made (measurements may be either on a dry or wet basis, as long as it is the same basis before and after the adjustments are made). Measurements may be taken using a portable CO analyzer.
[40 C.F.R. § 63.11223(b)(5)]
- (6) If a unit is not operating on the required date for a tune-up, the tune-up must be conducted within 30 days of start-up.
[40 C.F.R. § 63.11223(b)(7)]

d. 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)]

3. Compliance Report

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

- a. Company name and address;
- b. A statement of whether the source has complied with all the relevant requirements of this Subpart;
- c. A statement certifying truth, accuracy, and completeness of the notification and signed by a responsible official and containing the official's name, title, phone number, email address, and signature;
- d. The following certifications, as applicable:
 - (1) "This facility complies with the requirements in 40 C.F.R. § 63.11223 to conduct tune-ups of each boiler in accordance with the frequency specified in this Subpart."

- (2) "No secondary materials that are solid waste were combusted in any affected unit."
 - (3) "This facility complies with the requirement in §§ 63.11214(d) and 63.11223(g) to minimize the boiler's time spent during startup and shutdown and to conduct startups and shutdowns according to the manufacturer's recommended procedures or procedures specified for a boiler of similar design if manufacturer's recommended procedures are not available."
4. Records shall be maintained consistent with the requirements of 40 C.F.R. Part 63, Subpart JJJJJ including the following [40 C.F.R. § 63.11225(c)]:
- a. Copies of notifications and reports with supporting compliance documentation;
 - b. Identification of each boiler, the date of tune-up, procedures followed for tune-up, and the manufacturer's specifications to which the boiler was tuned;
 - c. Records, on a monthly basis, of the type(s) of fuel combusted in each boiler;
 - d. Records of the occurrence and duration of each malfunction of each applicable boiler; and
 - e. 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.

(17) **Vaporizers #1 and #2**

- A. Vaporizers #1 and #2 are each licensed to fire propane. [06-096 C.M.R. ch. 115, BACT]
- B. Emissions shall not exceed the following [06-096 C.M.R. ch. 115, BACT]:

Unit	PM (lb/hr)	PM ₁₀ (lb/hr)	PM _{2.5} (lb/hr)	SO ₂ (lb/hr)	NO _x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Vaporizer #1	0.04	0.04	0.04	—	0.20	0.12	0.02
Vaporizer #2	0.04	0.04	0.04	—	0.20	0.12	0.02

- C. Visible emissions from each vaporizer shall not exceed 10% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 115, BACT]

(18) **Generators #1 and #2**

- A. Generators #1 and #2 shall each be limited to 100 hours of operation per calendar year, excluding operating hours during emergency situations.
[06-096 C.M.R. ch. 115, BACT]

B. 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)
Generator #2	PM	0.12	06-096 C.M.R. ch. 103, § (2)(B)(1)(a)

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

Unit	PM (lb/hr)	PM ₁₀ (lb/hr)	PM _{2.5} (lb/hr)	SO ₂ (lb/hr)	NO _x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Generator #1	1.51	1.51	1.51	0.02	40.26	10.69	1.13
Generator #2	1.51	1.51	1.51	0.02	40.26	10.69	1.13

D. Visible emissions from Generators #1 and #2 shall each not exceed 20% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 115, BACT]

E. Generators #1 and #2 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, BACT]

1. **Manufacturer Certification**

The engines 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 engines shall not exceed 15 ppm sulfur (0.0015% sulfur). 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 each engine. [40 C.F.R. § 60.4209(a)]

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

a. As emergency engines, the units shall each be limited to 100 hours/year for maintenance checks and readiness testing, emergency demand response, and periods of voltage or frequency deviation from standards. Up to 50 hours/year of the 100 hours/year may be used in non-emergency situations (this does not include peak shaving, 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. JAX shall keep records that include maintenance conducted on each engine and the hours of operation of each engine recorded through the non-resettable hour meter. Documentation shall include the number of hours each unit operated for emergency purposes, the number of hours each unit operated for non-emergency purposes, and the reason each engine was in operation during each time. [40 C.F.R. § 60.4214(b)]

5. Operation and Maintenance

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

(19) **EtO Sterilizer #1**

- A. EtO Sterilizer #1 and the associated catalytic oxidizer shall be operated and maintained according to the manufacturer's specifications. [06-096 C.M.R. ch. 115, BACT]
- B. The catalytic oxidizer shall be operated at all times EtO Sterilizer #1 is in operation. [06-096 C.M.R. ch. 115, BACT]
- C. The catalytic oxidizer shall not be used for more than 930 batches without replacement. [06-096 C.M.R. ch. 115, BACT]
- D. JAX shall keep records of all maintenance performed on EtO Sterilizer #1 and the associated catalytic oxidizer as well as the number of batches processed between catalytic oxidizer replacement. [06-096 C.M.R. ch. 115, BACT]
- E. Visible emissions from EtO Sterilizer #1 shall not exceed 10% opacity on a six (6)-minute block average basis. [06-096 C.M.R. ch. 115, BACT]

(20) **Annual Emission Statement**

- A. In accordance with *Emission Statements*, 06-096 C.M.R. ch. 137, JAX shall annually report to the Department, in a format prescribed by the Department, the information necessary to accurately update the State's emission inventory. The emission statement shall be submitted as specified by the date in 06-096 C.M.R. ch. 137.

B. JAX shall keep the following records in order to comply with 06-096 C.M.R. ch. 137:

1. The amount of each fuel fired in each boiler on a monthly basis;
 2. The amount of distillate fuel fired in each generator on a monthly basis;
 3. The sulfur content of the distillate fuel fired in the boilers and generators;
 4. The amount of propane fired in the vaporizers on a monthly basis;
 5. Emissions of EtO from the sterilizer based on the number of batches processed and a catalytic oxidizer efficiency of 99.9%; and
 6. Hours of operation for each emission unit on a monthly basis.
- [06-096 C.M.R. ch. 137]

(21) JAX 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 28 DAY OF April, 2017.

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: 4/3/17
Date of application acceptance: 4/4/17

Date filed with the Board of Environmental Protection:

This Order prepared by Lynn Muzzey, Bureau of Air Quality.

