



DEPARTMENT ORDER

**The Jackson Laboratory
Hancock County
Bar Harbor, Maine
A-93-71-AD-A**

**Departmental
Findings of Fact and Order
Air Emission License
Amendment #6**

FINDINGS OF FACT

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

I. REGISTRATION

A. Introduction

The Jackson Laboratory (JAX) was issued Air Emission License A-93-71-X-R on November 24, 2014, for the operation of emission sources associated with their biomedical facility. The license was subsequently amended on March 20, 2015 (A-93-71-Y-A), October 2, 2015 (A-93-71-Z-A), March 9, 2016 (A-93-71-AA-A), November 7, 2016 (A-93-71-AB-A), and October 12, 2018 (A-93-71-AC-M).

JAX has requested an amendment to their license in order to replace Incinerator #1, ethylene oxide (EtO) Sterilizers #1 and #2, and Generator #2 with new equipment of similar sizes. JAX has also requested removal of a portable emergency generator now considered an insignificant activity.

The equipment addressed in this license amendment is located at 600 Main Street, Bar Harbor, Maine.

B. Emission Equipment

The following equipment is being removed by this air emission license amendment:

Process Equipment

Equipment	Process Rate	Pollution Control Equipment
EtO Sterilizer #1	170 g EtO/batch	Catalytic Oxidizer (Abator)
EtO Sterilizer #2	170 g EtO/batch	Catalytic Oxidizer (Abator)

Incinerators

	Incinerator #1
Class Incinerator	IV-B
No. of Chambers	2
Type of Waste	Types 0-5, 7
Max. Design (Combustion/Feed) Rate	175 lb/hr
Auxiliary Fuel Input	Distillate, 0.0015% S
Primary Chamber	0.7 MMBtu/hr
Secondary Chamber	4.0 MMBtu/hr
Emission Control	Afterburner

Stationary Engines

Equipment	Max. Input Capacity (MMBtu/hr)	Firing Rate (gal/hr)	Rated Output Capacity (KW)	Fuel Type, % sulfur	Date of Manuf.
Generator #2	2.33	17.0	230	distillate fuel, 0.0015%	pre-2006
Portable Emergency Generator	2.1	15.4	211	distillate fuel, 0.0015%	2000

The following new equipment is being added by in this air emission license amendment:

Process Equipment

Equipment	Process Rate	Pollution Control Equipment
EtO Sterilizer #4	170 g EtO/batch	Catalytic Oxidizer (Abator)
EtO Sterilizer #5	170 g EtO/batch	Catalytic Oxidizer (Abator)

Incinerators

	Incinerator #4
Class Incinerator	IV-B
No. of Chambers	2
Type of Waste	Types 0-5, 7
Max. Design (Combustion/Feed) Rate	220 lb/hr
Auxiliary Fuel Input	Propane
Primary Chamber	4.0 MMBtu/hr
Secondary Chamber	2.0 MMBtu/hr
Emission Control	Afterburner

Stationary Engines

Equipment	Max. Input Capacity (MMBtu/hr)	Firing Rate (gal/hr)	Rated Output Capacity (KW)	Fuel Type, % sulfur	Date of Manuf.
Generator #11	2.66	19.4	250	distillate fuel, 0.0015%	2021

C. Definitions

Distillate Fuel means the following:

- Fuel oil that complies with the specifications for fuel oil numbers 1 or 2, as defined by the American Society for Testing and Materials (ASTM) in ASTM D396;
- Diesel fuel oil numbers 1 or 2, as defined in ASTM D975;
- Kerosene, as defined in ASTM D3699;
- Biodiesel, as defined in ASTM D6751; or
- Biodiesel blends, as defined in ASTM D7467.

D. Application Classification

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

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

Pollutant	Current License (TPY)	Future License (TPY)	Net Change (TPY)	Significant Emission Levels
PM	20.3	20.7	+0.4	100
PM ₁₀	20.3	20.7	+0.4	100
SO ₂	13.5	6.5	-7.0	100
NO _x	83.2	75.0	-8.2	100
CO	56.4	60.3	+3.9	100
VOC	5.9	7.1	+1.2	50

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

E. Facility Classification

With the annual heat input limit on the boilers and vaporizers and the limits on the annual hours of operation for the generators, the facility is licensed as follows:

- As a synthetic minor source of air emissions, because JAX is subject to license restrictions that 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. EtO Sterilizers #4 and #5

JAX has proposed replacing two of their three existing ethylene oxide (EtO) sterilization units. The manufacturer no longer offers maintenance support or parts for the 3M™ Steri-Vac XL Series such as EtO Sterilizers #1 and #2. JAX plans to replace these units with newer 3M™ Steri-Vac GS8X sterilizers (EtO Sterilizers #4 and #5). EtO Sterilizer #3 is already a GS8X model. The new units will utilize the same size EtO cartridge and volume as the previous units.

EtO Sterilizers #4 and #5 will use sealed EtO cartridges that are only punctured once the cartridge is inside the locked and sealed sterilization chamber, minimizing the potential for EtO leaks. The EtO cartridges are single-use and contain 170 grams of EtO each.

1. BACT Findings

EtO Sterilizers #4 and #5 will emit 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 and has an EtO destruction efficiency of 99.9%. The minimum cycle time for a batch is one hour. Operating continuously (8,760 batches/year) with the catalytic oxidizer, EtO Sterilizers #4 and #5 each has the potential to emit less than 10 pounds per year of EtO.

Visible emissions from EtO Sterilizers #4 and #5 shall each not exceed 10% opacity on a six (6) minute block average basis.

BACT for EtO Sterilizers #4 and #5 shall be operation and maintenance of the units and their catalytic oxidizer according to the manufacturer's specifications.

JAX shall keep records for EtO Sterilizers #4 and #5 and the associated catalytic oxidizers of all maintenance performed including dates and details of what work was performed. JAX shall also keep records of the number of batches processed in each sterilizer between catalytic oxidizer replacements.

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 it is a research or laboratory facility as defined in the *Clean Air Act Amendments of 1990*, § 112(C)(7).

C. Incinerator #4

Incinerator #4 is a new dual-combustion chamber Mathews Surefire 100 incineration unit which will be used for the disposal of type 0 – 5 and 7 wastes. This unit will replace Incinerator #1.

Incinerator #4 has a maximum combustion rate of 220 lb/hr and fires propane. The primary combustion chamber has two (2) propane-fired burners each rated at 2.0 MMBtu/hr. The secondary combustion chamber has one (1) propane-fired burner rated at 2.0 MMBtu/hr, for a total maximum heat input from the auxiliary fuel of 6.0 MMBtu/hr. However, the maximum heat input is only used during ignition and pre-heat phase. During normal

operation, it is anticipated the burners will fire fuel equating approximately 0.7 MMBtu/hr each.

1. BACT Findings

The BACT emission limits for Incinerator #4 were based on the following:

PM/PM ₁₀	–	0.10 gr/dscf @ 7% O ₂ based on 06-096 C.M.R. ch 115, BACT and 7.00 lb/ton based on AP-42 Table 2.1-12 dated 10/96
SO ₂	–	2.50 lb/ton based on AP-42 Table 2.1-12 dated 10/96
NO _x	–	3.00 lb/ton based on AP-42 Table 2.1-12 dated 10/96
CO	–	10.0 lb/ton based on AP-42 Table 2.1-12 dated 10/96
VOC	–	3.00 lb/ton based on AP-42 Table 2.1-12 dated 10/96
Visible Emissions	–	06-096 CMR 115, BACT

To meet the requirements of BACT, Incinerator #4 shall be operated according to the following specifications:

- a. The operating temperature in the secondary chamber shall be maintained at or above 1,560 °F with a stack gas retention time of at least 2.0 seconds at or above 1,560 °F.
- b. To ensure an efficient burn and to prevent odors and visible emissions, the secondary chamber shall be preheated, as specified by the manufacturer.
- c. The temperature in the secondary chamber shall be maintained at or above 1,560 °F for the duration of the burn cycle.
- d. A pyrometer and a ¼-inch test port shall be installed and maintained at the location of the incinerator which provides sufficient volume to ensure a flue gas retention time of not less than 2.0 seconds at a minimum of 1,560 °F.
- e. A log shall be maintained recording the dates and times of operation, type (e.g., pathological) and weight of the waste charged, preheat time, charging time, and the temperature of the secondary chamber every 60 minutes after start-up until, and including, final shutdown time. The start time, date, and weight of waste charged may be logged electronically or manually on a chart.
- f. The ash shall be disposed of in accordance with the Bureau of Remediation and Waste Management, Solid Waste Management rules.
- g. The incinerator operator(s) shall receive adequate training annually to operate the incinerator in accordance with the manufacturer's specifications and shall be familiar with the terms of the Air Emission License.

- h. Emissions from Incinerator #4 shall be limited to the following:

Pollutant	gr/dscf	lb/hr
PM	0.10 (@ 7% O ₂)	0.77
PM ₁₀	n/a	0.77
SO ₂	n/a	0.28
NO _x	n/a	0.33
CO	n/a	1.10
VOC	n/a	0.33

- i. Visible emissions from Incinerator #4 shall not exceed 10% opacity based on a six (6) minute block average.

2. 06-096 C.M.R. ch. 104: *Incinerator Particulate Emission Standard*

Incinerator #4 is subject to a particulate emission standard (0.2 gr/dscf) and opacity standard contained in *Incinerator Particulate Emission Standard*, 06-096 C.M.R. ch. 104. The BACT emission standards contained in this license have been determined to be more stringent than those contained in the rule.

3. New Source Performance Standards

Solid waste incinerators constructed after June 4, 2010, are subject to *Standards of Performance for Commercial and Industrial Solid Waste Incineration Units*, 40 C.F.R. Part 60, Subpart CCCC. Pursuant to § 60.2020, units which burn 90% or more by weight of pathological waste are not subject to Subpart CCCC provided the source (1) notifies the Administrator that the unit meets this criteria and (2) keeps records on a calendar quarter basis of the weight of all pathological waste burned and the weight of all other fuels and waste burned in the unit. Incinerator #4 meets these requirements and is therefore not subject to Subpart CCCC. [40 C.F.R. § 60.2020(a)]

Hospital, medical, and infectious waste incinerators constructed after December 1, 2008, are subject to *Standards of Performance for New Stationary Sources: Hospital/Medical/Infectious Waste Incinerators*, 40 C.F.R. Part 60, Subpart Ec. JAX has proposed an enforceable requirement limiting Incinerator #4 to combusting 10% or less of medical/infectious waste on a calendar quarter basis. (Pathological waste is not considered medical/infectious waste.) Therefore, Incinerator #4 meets the definition of *co-fired combustor* and is not subject to Subpart Ec provided the source (1) notifies the Administrator that the unit meets this criteria and (2) keeps records on a calendar quarter basis of the weight of all medical/infectious waste burned and the weight of all other fuels and waste burned in the unit. [40 C.F.R. § 60.50c(c)]

D. Generator #11

JAX proposes to replace existing Generator #2 with a new emergency generator (Generator #11). Generator #11 has an engine rated at 2.66 MMBtu/hr firing distillate fuel.

1. BACT Findings

The BACT emission limits for Generator #11 are based on the following:

- PM/PM₁₀ - 0.31 lb/MMBtu from AP-42 dated 10/96
- SO₂ - combustion of distillate fuel with a maximum sulfur content not to exceed 15 ppm (0.0015% sulfur by weight)
- NO_x - 4.41 lb/MMBtu from AP-42 dated 10/96
- CO - 0.95 lb/MMBtu from AP-42 dated 10/96
- VOC - 0.36 lb/MMBtu from AP-42 dated 10/96
- Visible Emissions - 06-096 C.M.R. ch. 115, BACT

The BACT emission limits for Generator #11 are the following:

Unit	PM (lb/hr)	PM ₁₀ (lb/hr)	SO ₂ (lb/hr)	NO _x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Generator #11	0.82	0.82	–	11.73	2.53	0.96

Visible emissions from Generator #11 shall not exceed 20% opacity on a six-minute block average basis.

The Department has determined that the proposed BACT visible emission limit is more stringent than the applicable limit in 06-096 C.M.R. ch. 101. Therefore, the visible emission limit for Generator #11 has been streamlined to the more stringent BACT limit, and only this more stringent limit shall be included in the air emission license.

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 Generator #11 since it 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 meets 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 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 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. 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 an emergency engine, the unit shall be limited to 100 hours/year for maintenance checks and readiness testing. Up to 50 hours/year of the 100 hours/year may be used in non-emergency situations (this does not include peak shaving, demand response, or to generate income for a facility by providing power to an electric grid or otherwise supply power as part of a financial arrangement with another entity). [40 C.F.R. § 60.4211(f)]

(6) Initial Notification Requirement

No initial notification is required under 40 C.F.R. Part 60, Subpart III for emergency engines. [40 C.F.R. § 60.4214(b)]

(7) Recordkeeping

JAX 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)]

E. Portable Emergency Generator

The Portable Emergency Generator was previously addressed in Air Emission License A-93-71-AA-A (3/9/2016). Although this generator is still used on site, it is a portable unit used for maintenance and emergency purposes only. This engine is considered an insignificant activity which is not required to be included in the air emissions license. Therefore, JAX has requested its removal from the license. The Department agrees with this request.

F. Annual Emissions

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

- A combined annual fuel heat input for the boilers and vaporizers of 315,000 MMBtu/year for all fuels combined and selecting the fuel with the worst-case emissions for each pollutant;
- Firing distillate fuel with a sulfur content not to exceed 0.0015% by weight;
- Operating Generators #6, #8, and #9 for 300 hr/year each;
- Operating all other engines for 100 hr/year each;
- Operating the each incinerator for 8,760 hr/year; and
- Operating each ethylene oxide sterilizer and associated catalytic oxidizer for 8,760 hr/year.

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

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

	PM	PM ₁₀	SO ₂	NO _x	CO	VOC	Single HAP	Total HAP
Boilers & Vaporizers	12.6	12.6	3.9	47.3	47.3	2.7	–	–
Generator #3	–	–	–	0.5	0.1	–	–	–
Generator #6	0.2	0.2	–	5.9	0.5	0.2	–	–
Generator #8	0.3	0.3	–	7.3	0.6	0.4	–	–
Generator #9	0.3	0.3	–	7.3	0.6	0.4	–	–
Generator #10	0.1	0.1	–	3.0	0.8	0.1	–	–
Generator #11	–	–	–	0.6	0.1	0.1	–	–
Incinerator #3	3.8	3.8	1.4	1.6	5.5	1.6	–	–
Incinerator #4	3.4	3.4	1.2	1.5	4.8	1.5	–	–
Sterilizers	–	–	–	–	–	0.1	–	–
Total TPY	20.7	20.7	6.5	75.0	60.3	7.1	9.9	24.9

III. AMBIENT AIR QUALITY ANALYSIS

JAX previously submitted an ambient air quality impact analysis for air emission license A-93-71-V-A (dated February 18, 2011) demonstrating that emissions from the facility, in conjunction with all other sources, do not violate Ambient Air Quality Standards (AAQS). An additional air quality impact analysis is not required for this license amendment.

ORDER

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

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

The Department hereby grants Air Emission License Amendment A-93-71-AD-A subject to the conditions found in Air Emission License A-93-71-X-R; in amendments A-93-71-Y-A, A-93-71-Z-A, A-93-71-AA-A, A-93-71-AB-A, and A-93-71-AC-M; and the following conditions.

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

SPECIFIC CONDITIONS

The following shall replace Condition (20) of Air Emission License A-93-71-AB-A as amended in A-93-71-AC-M: (Included to remove Generator #2)

(20) **Generator #3**

- A. Generator #3 shall be limited to 100 hours of operation per calendar year, excluding operating hours during emergency situations.
[06-096 C.M.R. ch. 115, BPT]
- B. The fuel sulfur content for Generator #3 shall be limited to 0.0015% sulfur by weight. Compliance shall be demonstrated by fuel records from the supplier documenting the type of fuel delivered and the sulfur content of the fuel. [06-096 C.M.R. ch. 115, BPT]
- C. Emissions shall not exceed the following [06-096 C.M.R. ch. 115, BPT]:

Unit	PM (lb/hr)	PM ₁₀ (lb/hr)	SO ₂ (lb/hr)	NO _x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Generator #3	0.30	0.30	–	10.85	2.34	0.86

- D. Visible emissions from Generator #3 shall not exceed 20% opacity on a six-minute block average basis, except for periods of startup and shutdown during which time JAX may comply with the following work practice standards in lieu of the numerical visible emissions standard.
 - 1. Maintain a log (written or electronic) of the date, time, and duration of all generator startups.
 - 2. Operate the generator in accordance with the manufacturer's emission-related operating instructions.
 - 3. Minimize the engine's time spent at idle during startup and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations shall apply.
 - 4. Operate the generator, including any associated air pollution control equipment, at all times in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Department that may include, but is not limited to, monitoring results, review

of operation and maintenance procedures, review of operation and maintenance records, and inspection of the unit.

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

E. Generator #3 shall meet the applicable requirements of 40 C.F.R. Part 63, Subpart ZZZZ, including the following:

1. JAX shall meet the following operational limitations for Generator #3:

- a. Change the oil and filter annually,
- b. Inspect the air cleaner annually and replace as necessary, and
- c. Inspect the hoses and belts annually and replace as necessary.

Records shall be maintained documenting compliance with the operational limitations.

[40 C.F.R. § 63.6603(a) and Table 2(d) and 06-096 C.M.R. ch. 115]

2. Oil Analysis Program Option

JAX has the option of utilizing an oil analysis program which complies with the requirements of § 63.6625(i) in order to extend the specified oil change requirement. If this option is used, JAX must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil changes for each engine. The analysis program must be part of the maintenance plan for each engine. [40 C.F.R. § 63.6625(i)]

3. Non-Resettable Hour Meter

A non-resettable hour meter shall be installed and operated on each engine.

[40 C.F.R. § 63.6625(f)]

4. Maintenance, Testing, and Non-Emergency Operating Situations

a. As an emergency engine, Generator #3 shall be limited to 100 hours/year for maintenance checks and readiness testing, emergency demand response, and periods of voltage or frequency deviation from standards. Up to 50 hours/year of the 100 hours/year may be used in non-emergency situations (this does not include peak shaving, demand response, or to generate income for a facility by providing power to an electric grid or otherwise to 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 logs) of all engine operating hours.

[40 C.F.R. § 63.6640(f) and 06-096 C.M.R. ch. 115]

b. JAX shall keep records that include maintenance conducted on Generator #3 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. §§ 63.6655(e) and (f)]

5. Operation and Maintenance

Generator #3 shall be operated and maintained according to the manufacturer's emission-related written instructions, or JAX shall develop a maintenance plan which provides to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions. [40 C.F.R. § 63.6625(e)]

6. Startup Idle and Startup Time Minimization

During periods of startup, the facility must minimize each engine's time spent at idle and minimize each engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes.

[40 C.F.R. § 63.6625(h) & 40 C.F.R. Part 63, Subpart ZZZZ Table 2d]

Condition (21) of Air Emission License A-93-71-X-R is Deleted.

(Removes Incinerator #1)

The following shall replace Condition (27) of Air Emission License A-93-71-AC-M:

(27) EtO Sterilizers #3, #4, and #5

- A. EtO Sterilizers #3, #4, and #5 and the associated catalytic oxidizers shall be operated and maintained according to the manufacturer's specifications. [06-096 C.M.R. ch. 115, BACT]
- B. The associated catalytic oxidizer shall be operated at all times EtO Sterilizers #3, #4, and #5 are in operation. [06-096 C.M.R. ch. 115, BACT]
- C. JAX shall keep records for EtO Sterilizers #3, #4, and #5 and the associated catalytic oxidizers of all maintenance performed including dates and details of what work was performed. JAX shall also keep records of the number of batches processed in each machine between catalytic oxidizer replacements. [06-096 C.M.R. ch. 115, BACT]
- D. JAX shall calculate VOC and HAP emissions on a calendar year basis based on the number of batches processed in each machine, ethylene oxide usage, and an oxidizer conversion efficiency of 99%. [06-096 C.M.R. ch. 115, BACT]
- E. Visible emissions from EtO Sterilizers #3, #4, and #5 shall each not exceed 10% opacity on a six (6) minute block average basis. [06-096 C.M.R. ch. 115, BACT]

Condition (29) of Air Emission License A-93-71-AA-A is Deleted.
(Removes Portable Emergency Generator)

The following are New Conditions:

(33) Generator #11

- A. Generator #11 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]
- B. Emissions shall not exceed the following [06-096 C.M.R. ch. 115, BACT]:

Unit	PM (lb/hr)	PM ₁₀ (lb/hr)	SO ₂ (lb/hr)	NO _x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Generator #11	0.82	0.82	–	11.73	2.53	0.96

C. Visible Emissions

Visible emissions from Generator #11 shall not exceed 20% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 115, BACT]

D. Generator #11 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 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. JAX 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. JAX may only change those emission-related settings that are permitted by the manufacturer. [40 C.F.R. § 60.4211(a)]

(34) **Incinerator #4**

- A. Incinerator #4 (co-fired combustor) shall be used for the disposal of type 0 through 5 and type 7 waste only. [06-096 C.M.R. ch. 115, BACT]
- B. JAX shall submit to the Department and EPA notification that Incinerator #4 meets the criteria in 40 C.F.R. § 60.2020(a). [40 C.F.R. § 60.2020(a)(1)]
- C. JAX shall keep records on a calendar quarter basis of the weight of medical/infectious waste combusted and the weight of all other fuels and wastes combusted in Incinerator #4. JAX shall not combust more than 10% medical/infectious waste by weight. Incinerator #4 shall burn at least 90% or more by weight of pathological waste (type 4) on a quarterly basis excluding auxiliary fuel and combustion air. [06-096 C.M.R. ch. 115, BACT and 40 C.F.R. § 60.2020(a)(2)]
- D. Incinerator #4 shall not exceed the maximum design charging rate of 220 pounds per hour. Auxiliary fuel input to the primary and secondary chamber shall be propane. [06-096 C.M.R. ch. 115, BACT]

- E. A log shall be maintained recording the dates and times of operation, type (e.g., pathological) and weight of the waste charged, preheat time, charging time and the temperature of the secondary chamber every 60 minutes after start-up until, and including, final shutdown time. The start time, date and weight of waste charged may be logged manually or electronically. [06-096 C.M.R. ch. 115, BACT]
- F. The secondary chamber of Incinerator #4 shall be preheated as specified by the manufacturer to a minimum of 1,560 °F prior to combusting any waste and shall be maintained at a minimum of 1,560 °F for the duration of the burn. [06-096 C.M.R. ch. 115, BACT]
- G. Once the burn cycle has commenced by introduction of primary chamber combustion, Incinerator #4 shall be operated in an efficient manner and as specified by the manufacturer for the period of time between preheat and reaching the set operational temperature of a minimum of 1,560 °F in the secondary chamber. [06-096 C.M.R. ch. 115, BACT]
- H. A pyrometer and a ¼-inch test port shall be installed and maintained at the location of the incinerator or refractory lined stack which provides sufficient volume to ensure a flue gas retention time of not less than 2.0 seconds at the minimum 1,560 °F. [06-096 C.M.R. ch. 115, BACT]
- I. Emissions from Incinerator #4 shall be limited to the following [06-096 CMR 115, BACT]:

Pollutant	gr/dscf	lb/hr
PM	0.10 (@ 7% O ₂)	0.77
PM ₁₀	n/a	0.77
SO ₂	n/a	0.28
NO _x	n/a	0.33
CO	n/a	1.10
VOC	n/a	0.33

- J. Visible emissions from Incinerator #4 shall not exceed an opacity limit of 10% based on a six (6) minute block average basis. [06-096 C.M.R. ch. 115, BACT]
- K. The ash from Incinerator #4 shall be disposed of in accordance with the requirements of the Bureau of Remediation and Waste Management. [06-096 C.M.R. ch. 115, BACT]

- L. The incinerator operator(s) shall receive annual training to operate the incinerator in accordance with the manufacturer's specifications, and shall be familiar with the terms of this Air Emission License as it pertains to the operation of the incinerator.
[06-096 C.M.R. ch. 115, BACT]

DONE AND DATED IN AUGUSTA, MAINE THIS 4th DAY OF JUNE, 2021.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY:  for
MELANIE LOYZIM, COMMISSIONER

The term of this amendment shall be concurrent with the term of Air Emission License A-93-71-X-R.

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: 4/28/2021

Date of application acceptance: 4/28/2021

Date filed with the Board of Environmental Protection:

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

FILED
JUN 04, 2021
State of Maine
Board of Environmental Protection