STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION
17 STATE HOUSE STATION AUGUSTA, MAINE 04333-0017

DEPARTMENT ORDER

The Jackson Laboratory **Hancock County** **Bar Harbor, Maine** **A-93-71-AB-A (SM)**	**Departmental** **Findings of Fact and Order** **Air Emission License** **Amendment #4**

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) and March 9, 2016 (A-93-71-AA-A).

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

1. Convert three existing emergency generators to non-emergency usage;
2. Correct short-term emission limits for Boiler #12; and
3. Correct and update Area Source Boiler MACT language as it applies to Boiler #12.

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

B. Emission Equipment

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

Boilers

Equipment	Max. Capacity (MMBtu/hr)	Maximum Firing Rate	Fuel Type, % Sulfur	Date of Manuf.	Date of Install.	Stack #
Boiler #12	44.4	5482 lb/hr	Wood Pellets, negligible	2011	2011	6
	49.9	356 gal/hr	Distillate Fuel, 0.05%			
		48,921 scf/hr	Natural Gas, negligible			
		551 gal/hr	Propane, negligible			

Generators

Equipment	Max. Input Capacity (MMBtu/hr)	Rated Output Capacity (kW)	Maximum Firing Rate (gal/hr)	Fuel Type, % Sulfur	Date of Manuf.	Date of Install.
Generator #6	12.3	1250	89.7	Distillate Fuel, 0.0015%	1992	1992
Generator #8	15.2	1500	111.2	Distillate Fuel, 0.0015%	2003	2003
Generator #9	15.2	1500	111.2	Distillate Fuel, 0.0015%	2003	2003

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.

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

Pollutant	Current License (TPY)	Future License (TPY)	Net Change (TPY)	Significant Emission Levels
PM	20.0	20.3	+0.3	100
PM_{10}	20.0	20.3	+0.3	100
SO_2	18.3	13.5	-4.8	100
NO_x	69.7	83.2	+13.5	100
CO	56.5	56.4	-0.1	100
VOC	5.9	5.9	-0-	50

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

II. BEST PRACTICAL TREATMENT (BPT)

A. Introduction

In order to receive a license, the applicant must control emissions from each unit to a level considered by the Department to represent Best Practical Treatment (BPT), as defined in *Definitions Regulation*, 06-096 C.M.R. ch. 100. Separate control requirement categories exist for new and existing equipment.

BPT for existing emissions equipment means that method which controls or reduces emissions to the lowest possible level considering:

- the existing state of technology;
- the effectiveness of available alternatives for reducing emissions from the source being considered; and
- the economic feasibility for the type of establishment involved.

B. Boiler #12

This section replaces the Findings of Fact for Boiler #12 set forth in Air Emissions License A-93-71-X-R in order to make the following changes:

- Correct mis-calculated short-term emission limits;
- Correct the requirements of *National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources*, 40 C.F.R. Part 63, Subpart JJJJJJ listed for Boiler #12; and
- Incorporate recent changes made to 40 C.F.R. Part 63, Subpart JJJJJJ that apply to Boiler #12.

JAX operates Boiler #12 for facility heating. The boiler is a Babcock & Wilcox water tube FM 1-79 LH package boiler. Boiler #12 primarily fires pulverized wood pellets (maximum moisture content of 10%) but is also able to fire distillate fuel (maximum sulfur content 0.05%), natural gas, and propane. The boiler is rated at 44.4 MMBtu/hr when firing wood and 49.9 MMBtu/hr when firing distillate fuel, natural gas, or propane.

Wood pellets are delivered to the facility by truck and blown into a storage silo. A small baghouse controls particulate emissions from the silo during the loading process. The pellets are conveyed to dual hammer mill pulverizers, which convert the wood pellets to flour, which is conveyed and blown into the boiler nozzles.

Emissions from Boiler #12 are controlled by a baghouse before exiting through a 60-foot stack (Stack #6).

1. BPT Findings

The BPT emission limits for Boiler #12 were based on the following:

Wood Pellets

PM/PM_{10}	–	0.030 lb/MMBtu based on 40 C.F.R. Part 63, Subpart JJJJJJ and 40 C.F.R. Part 60, Subpart Dc
SO_2	–	0.025 lb/MMBtu based on AP-42 Table 1.6-2 dated 9/03
NO_x	–	0.19 lb/MMBtu based on 06-096 C.M.R. ch. 115, BPT (A-93-71-V-A)
CO	–	0.30 lb/MMBtu based on 06-096 C.M.R. ch. 115, BPT (A-93-71-V-A)
VOC	–	0.017 lb/MMBtu based on AP-42 Table 1.6-3 dated 9/03
Visible Emissions	–	40 C.F.R. Part 60, Subpart Dc

Distillate Fuel

PM/PM_{10}	–	0.030 lb/MMBtu based on 40 C.F.R. Part 63, Subpart JJJJJJ and 40 C.F.R. Part 60, Subpart Dc
SO_2	–	based on firing distillate fuel with a maximum sulfur content of 0.05% by weight
NO_x	–	0.30 lb/MMBtu based on 06-096 C.M.R. ch. 115, BPT (A-93-71-V-A)
CO	–	0.30 lb/MMBtu based on 06-096 C.M.R. ch. 115, BPT (A-93-71-V-A)
VOC	–	0.2 lb/1000 gal based on AP-42 Table 1.3-3 dated 5/10
Visible Emissions	–	40 C.F.R. Part 60, Subpart Dc

Natural Gas

PM/PM_{10}	–	0.030 lb/MMBtu based on 06-096 C.M.R. ch. 115, BPT
SO_2	–	0.6 lb/MMscf based on AP-42 Table 1.4-2 dated 7/98
NO_x	–	100 lb/MMscf based on AP-42 Table 1.4-1 dated 7/98
CO	–	84 lb/MMscf based on AP-42 Table 1.4-1 dated 7/98
VOC	–	5.5 lb/MMscf based on AP-42 Table 1.4-2 dated 7/98
Visible Emissions	–	40 C.F.R. Part 60, Subpart Dc

Propane

PM/PM_{10}	–	0.030 lb/MMBtu based on 06-096 C.M.R. ch. 115, BPT
SO_2	–	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	–	40 C.F.R. Part 60, Subpart Dc

The BPT emission limits for Boiler #12 are the following:

Unit	Pollutant	lb/MMBtu
Boiler #12 (all fuels)	PM	0.030

Unit	PM (lb/hr)	PM_{10} (lb/hr)	SO_2 (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Boiler #12 (wood)	1.33	1.33	1.11	8.44	13.32	0.75
Boiler #12 (distillate fuel)	1.50	1.50	2.51	14.97	14.97	0.07
Boiler #12 (natural gas)	1.50	1.50	0.03	4.89	4.11	0.27
Boiler #12 (propane)	1.50	1.50	0.01	7.17	4.14	0.55

See discussion of New Source Performance Standards (below) for visible emission limits.

JAX shall not exceed a facility-wide fuel use in all boilers and vaporizers combined equivalent to 315,000 MMBtu/year of heat input on a 12-month rolling total basis. This limit is applicable to all fuels fired in the boilers and vaporizers including distillate fuel, natural gas, propane, and wood pellets. When calculating the facility's monthly heat input, the following heating values shall be used:

Fuel	Heat Input
Wood Pellets	16.2 MMBtu/ton
Distillate Fuel	0.14 MMBtu/gal
Natural Gas	0.00102 MMBtu/scf
Propane	0.0905 MMBtu/gal

Fuel Sulfur Content Requirements

Boiler #12 is licensed to fire distillate fuel with a sulfur content not to exceed 0.05% by weight. Per 38 M.R.S. § 603-A(2)(A)(3), as of July 1, 2018, no person shall import, distribute, or offer for sale any distillate fuel with a sulfur content greater than 0.0015% by weight (15 ppm). Therefore, beginning July 1, 2018, the distillate fuel purchased or otherwise obtained for use in Boiler #12 shall not exceed 0.0015% by weight (15 ppm).

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

   Boiler #12 is 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]

   JAX is exempt from the requirement to install a Continuous Opacity Monitor (COM) on the exhaust of Boiler #12 provided the facility continues to use a baghouse as the primary PM control device and operates a bag leak detection system in accordance with 40 C.F.R. § 60.48a. [40 C.F.R. § 60.47c(f)]

   JAX shall comply with all requirements of 40 C.F.R. Part 60, Subpart Dc applicable to Boiler #12 including, but not limited to, the following:

   a. Visible emissions from Boiler #12 shall not exceed 20% opacity on a six (6) minute block average basis, except for no more than one (1) six (6) minute period per hour of not more than 27% opacity. [40 C.F.R § 60.43c(c)]

   b. JAX shall record and maintain records of the amounts of each fuel combusted during each calendar month. [40 C.F.R. § 60.48c(g)]

   c. JAX shall submit semi-annual reports to EPA and to the Department. These reports shall include the calendar dates covered in the reporting period and records of fuel supplier certifications. The semi-annual reports are due within 30 days of the end of each six-month period. [40 C.F.R. § 60.48c(j) and 06-096 C.M.R. ch. 115, BPT]

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

   Boiler #12 is 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 JJJJJJ. The unit is considered a new biomass-fired boiler with an oxygen trim system. [40 C.F.R. §§ 63.11193 and 63.11195]

   A summary of the currently applicable federal 40 C.F.R. Part 63, Subpart JJJJJJ requirements is listed below. At this time, the Department has not taken delegation of this area source MACT (Maximum Achievable Control Technology) 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. Emission Limits and Work Practice Requirements

(1) Boiler #12 is subject to the following requirements:

	Operating Limitations
New biomass-fired boilers with heat input capacity of 30 MMBtu/hr or greater (Boiler #12)	- Limit emissions of PM (filterable) to less than or equal to 0.030 lb/MMBtu except for periods of startup and shutdown (40 C.F.R. Part 63, Subpart JJJJJJ, Table 1); - Minimize the boiler's startup and shutdown periods and conduct startups and shutdowns according to the manufacturer's recommended procedures. (40 C.F.R. Part 63, Subpart JJJJJJ, Table 2); - Install and operate a bag leak detection system according to § 63.11224 and operate the fabric filter such that the bag leak detection system alarm does not sound more than 5 percent of the operating time during each 6-month period; (40 C.F.R. Part 63, Subpart JJJJJJ, Table 3); - Maintain the 30-day rolling average operating load of the boiler such that it does not exceed 110 percent of the average operating load recorded during the most recent performance stack test. (40 C.F.R. Part 63, Subpart JJJJJJ, Table 3)

(2) Boiler Tune-Up Program

(i) A boiler tune-up program shall be implemented. The first tune-up is due no later than 61 months after the initial startup. [40 C.F.R. § 63.11223]

(ii) Tune-ups for Boiler #12 shall be conducted every five years with no more than 61 months between tune-ups. [40 C.F.R. § 63.11223(c) and 40 C.F.R. Part 63, Subpart JJJJJJ, Table 2]

(iii)The boiler tune-up program 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; not to exceed 72 months from the previous inspection. [40 C.F.R. § 63.11223(b)(1) & (c)]
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; not to exceed 72 months from the previous inspection. [40 C.F.R. § 63.11223(b)(3) & (c)]

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

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

1. The concentration of CO in the effluent stream (ppmv) and oxygen (volume percent) measured at high fire or typical operating load both **before** and **after** the boiler tune-up;
2. A description of any corrective actions taken as part of the tune-up of the boiler; and
3. The types and amounts of fuels used over the 12 months prior to the tune-up of the boiler, but only if the unit was physically and legally capable of using more than one type of fuel during that period. Units sharing a fuel meter may estimate the fuel use by each unit.

[40 C.F.R. § 63.11223(b)(6)]

b. Continuous Monitoring System (CMS) and Continuous Parameter Monitoring System (CPMS)

(1) JAX shall install, operate, and maintain a CPMS for Boiler #12. The CPMS includes a bag leak detection system and boiler operating load. [40 C.F.R. § 63.11222(a)]

(2) JAX shall establish a unit-specific limit for maximum operating load (fuel feed rate or steam generation data) in accordance with 40 C.F.R. Part 63, Subpart JJJJJJ, Table 6.

(3) The bag leak detection system shall:

(i) Be installed, operated, calibrated, and maintained in a manner consistent with the manufacturer's written specifications and recommendations and in accordance with EPA-454/R-98-015. [40 C.F.R. § 63.11224(f)(2)]

(ii) Be certified by the manufacturer to be capable of detecting particulate matter emissions at concentrations of 10 milligrams per actual cubic meter or less. [40 C.F.R. § 63.11224(f)(3)]

(iii) Have a sensor which shall provide output of relative or absolute particulate matter loadings. [40 C.F.R. § 63.11224(f)(4)]

(iv) Be equipped with a device to continuously record the output signal from the sensor. [40 C.F.R. § 63.11224(f)(5)]

(v) Be equipped with an audible or visual alarm system that will activate automatically when an increase in relative particulate matter emissions over a preset level is detected. The alarm shall be located where it is easily heard or seen by facility personnel. [40 C.F.R. § 63.11224(f)(6)]

(4) JAX shall initiate corrective action within 1 hour of a bag leak detection system alarm. [40 C.F.R. § 63.11222(a)(4)]

(5) JAX shall continuously monitor the boiler operating load and reduce this data to 30-day rolling averages to demonstrate compliance with the limitations on the maximum operating load in accordance with 40 C.F.R. Part 63, Subpart JJJJJJ, Table 7.

(6) JAX shall prepare a site-specific monitoring plan that addresses the requirements outlined in 40 C.F.R. §§ 63.11205(c) and 63.11224(c).

(7) The CPMS shall be continuously operated in accordance with the site-specific monitoring plan at all times that Boiler #12 is operating and firing wood except for periods of monitoring system malfunctions or out-of-control periods, repairs associated with monitoring system malfunctions or out-of-control periods, and required monitoring system quality assurance or quality control activities including, as applicable, calibration checks, required zero and span adjustments, and scheduled CMS maintenance as defined in your site-specific monitoring plan. [40 C.F.R. § 63.11221(b)]

(8) The CPMS shall complete a minimum of one cycle of operation every 15 minutes. JAX shall have data values from a minimum of four successive cycles of operation representing each of the four 15-minute periods in an hour, or at least two 15-minute data values during an hour when CMS calibration, quality assurance, or maintenance activities are being performed, to have a valid hour of data. [40 C.F.R. § 63.11224(d)(1)]

(9) JAX shall calculate hourly arithmetic averages from each hour of CPMS data and determine the 30-day rolling average of all recorded readings. [40 C.F.R. § 63.11224(d)(2)]

c. Performance Tests

JAX conducted an initial performance test on Boiler #12 in accordance with 40 C.F.R. Part 63, Subpart JJJJJJ, Table 4 on October 5, 2011. The results of the initial performance test showed emissions which were in compliance but more than half of the PM emission limit (i.e. >0.015 lb/MMBtu). Therefore, JAX is required to perform triennial performance testing with no more than 37 months between tests.

JAX performed a subsequent performance test on March 18-19, 2014. Although the test was successful, operational difficulties on the days testing was performed limited the operating load to approximately 75%. JAX therefore elected to perform another performance test at a higher operating load on January 21, 2015.

The January 21, 2015 test was successful and removed the 75% operating restriction. Therefore, as outlined below, the next performance test for Boiler #12 is due no later than February 21, 2018.

(1) JAX shall conduct triennial performance stack tests in accordance with 40 C.F.R. Part 63, Subpart JJJJJJ, Table 4 with no more than 37 months between tests. [40 C.F.R. § 63.11220(a)]
(2) JAX shall conduct performance stack tests at the representative operating load conditions while burning the type of fuel (or mixture of fuels) that have the highest emissions potential. [40 C.F.R. § 63.11212(c)]
(3) JAX shall conduct a minimum of three separate test runs for each performance stack test. [40 C.F.R. § 63.11212(d)]

d. Notifications and Reports

JAX shall submit to EPA all reports required by 40 C.F.R. Part 63, Subpart JJJJJJ including, but not limited to, the following:

(1) An Initial Notification was submitted to EPA. [40 C.F.R. § 63.11225(a)(2)]
(2) A Notification of Intent to conduct a performance test shall be submitted to EPA at least 60 days before the performance stack test is scheduled to begin. [40 C.F.R. § 63.11225(a)(3)] JAX shall also notify the Department of their intent to conduct a performance test at the same time notification is given to EPA.
(3) Within 60 days after the date of completing each performance test, JAX shall submit the results of the performance test to EPA's CEDRI database. [40 C.F.R. § 63.11225(e)(1)] JAX shall also submit results to the Department in accordance with Standard Condition (11)(C).
(4) Compliance Reports
A compliance report shall be prepared by March 1st of each year. The report shall be maintained by the source and submitted to the Department and to the EPA upon request, unless the source experiences any deviations from the applicable requirements of this Subpart during the previous calendar year, then the report must be submitted to the Department and to the EPA by March 15th. The report must include the items contained in §§ 63.11225(b)(1) – (4), 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."

(v) If the source experiences any deviations from the applicable requirements during the reporting period, include a description of deviations, the time periods during which the deviations occurred, and the corrective actions taken; and

(vi) The total fuel use by each affected boiler subject to an emission limit for each calendar month within the reporting period.

e. Recordkeeping

(1) The following records shall be maintained consistent with the requirements of 40 C.F.R. Part 63, Subpart JJJJJJ including the following [40 C.F.R. § 63.11225(c)]:

(i) Copies of notifications and reports with supporting compliance documentation;

(ii) Identification of the boiler, the date of tune-up, procedures followed for tune-up, and the manufacturer's specifications to which the boiler was tuned;

(iii) Records of monthly fuel use including the type(s) of fuel and amount(s) used;

(iv) Records of the occurrence and duration of each malfunction of the boiler or its associated pollution control and monitoring equipment; and

(v) Records of actions taken during periods of malfunction to minimize emissions, including corrective actions to restore the malfunctioning boiler, air pollution control equipment, or monitoring equipment.

(vi) Records of the bag leak detection system output.

(vii) Records of bag leak detection system adjustments, including the date and time of the adjustment, the initial bag leak detection system settings, and the final bag leak detection system settings.

(2) JAX shall keep records of the date, time, and duration of all bag leak detection system alarms, and for each valid alarm, the date and time corrective action was initiated, a brief description of the cause of the alarm and the action taken, and date and time on which corrective action was completed. [40 C.F.R. §§ 63.11222(a)(4) and 63.11225(c)(7)(iii)]

(3) JAX shall record the percent of the operating time during each 6-month period that the bag leak detection system alarm sounds. If the alarm sounds and inspection of the fabric filter demonstrates that no corrective action is required, no alarm time is counted. If corrective action is required, each alarm is counted as a minimum of 1 hour. [40 C.F.R. § 63.11222(a)(4)]

(4) Records shall be in a form suitable and readily available for expeditious review. [40 C.F.R. § 63.11225(d)]

C. Generators #6, #8, and #9

JAX operates seven generators for emergency back-up power and maintenance needs. The facility has proposed converting three existing emergency generators (Generators #6, #8, and #9) to non-emergency units.

Historically, these units participated in a demand response program as allowed by *National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines,* 40 C.F.R. Part 63, Subpart ZZZZ. On May 1, 2015, the U.S. Court of Appeals issued a decision specifically vacating § 63.6640(f)(2), which had allowed for limited operation for emergency demand response purposes.

JAX wishes to continue participating in a formal peak shaving or demand response program and load shed during high demand periods. In order to do so, the generators would be classified as non-emergency. In order to comply with the non-emergency requirements of 40 C.F.R. Part 63, Subpart ZZZZ, JAX has proposed installing on each generator an oxidation catalyst designed to achieve a 70%+ reduction in carbon monoxide (CO) emissions. The catalyst system will be installed between the engine exhaust and silencer and will not require any modifications to the exhaust flow, the generator engine, the generator building, or the dedicated stacks. The system will be equipped with pre- and post-catalyst test ports for emissions testing. A continuous parameter monitoring system (CPMS) will also be installed.

JAX has proposed an operating hours restriction of 300 hours/year for each generator which is equivalent to the hours of operation limit these generators were subject to prior to the promulgation of 40 C.F.R. Part 63, Subpart ZZZZ.

1. BACT/BPT Findings

Installation of the oxidation catalyst will result in significantly lower emissions of CO. Therefore, BACT from Generators #6, #8, and #9 has been revised for that pollutant.

The BACT/BPT emission limits for Generators #6, #8, and #9 are based on the following:

PM/PM_{10}	–	0.12 lb/MMBtu from 06-096 C.M.R. ch. 103
SO_2	–	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	–	0.255 lb/MMBtu based on 70% control of uncontrolled emission rates from AP-42 dated 10/96
VOC	–	0.09 lb/MMBtu from AP-42 dated 10/96
Visible Emissions	–	06-096 C.M.R. ch. 101

The BACT/BPT emission limits for Generators #6, #8, and #9 are the following:

Unit	Pollutant	lb/MMBtu
Generator #6	PM	0.12
Generator #8	PM	0.12
Generator #9	PM	0.12

Unit	PM (lb/hr)	PM_{10} (lb/hr)	SO_2 (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Generator #6	1.47	1.47	0.02	39.33	3.13	1.11
Generator #8	1.83	1.83	0.02	48.77	3.89	2.90
Generator #9	1.83	1.83	0.02	48.77	3.89	2.90

Visible emissions from each generator (Generators #6, #8, and #9) shall not exceed 20% opacity on a six-minute block average basis, except for no more than two six-minute block averages in a three-hour period.

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

National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines, 40 C.F.R. Part 63, Subpart ZZZZ is applicable to the Generators #6, #8, and #9. The units are considered existing, non-emergency stationary reciprocating internal combustion engines at an area HAP source and are not subject to New Source Performance Standards regulations. EPA's August 9, 2010 memo (*Guidance Regarding Definition of Residential, Commercial, and Institutional Emergency Stationary RICE in the NESHAP for Stationary RICE*) specifically does not exempt these units from the federal requirements. [40 C.F.R. § 63.6585]

a. Operation Requirements

	Operating Limitations
Non-Emergency, non-black start CI stationary RICE >500 HP	- Limit concentration of CO in the exhaust to 23 ppmvd at 15% O_2 or reduce CO emissions by 70% or more (Table 2d); - Minimize the engine's time spent at idle and minimize the engine's startup time at startup 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 apply (Table 2d); - Maintain the catalyst so that the pressure drop across the catalyst does not change by more than 2 inches of water from the pressure drop across the catalyst that was measured during the initial performance test (Table 2b); and - Maintain the temperature of the exhaust so that the catalyst inlet temperature is 450°F – 1350°F. (Table 2b)

b. Crankcase Filtration
JAX shall operate on Generators #6, #8, and #9 either a closed crankcase ventilation system that prevents crankcase emissions from being emitted to the atmosphere or an open crankcase filtration emission control system that reduces emissions from the crankcase by filtering the exhaust stream to remove oil mist, particulates, and metals. [40 C.F.R. § 63.6625(g)]

c. Continuous Parameter Monitoring System (CPMS)
(1) JAX shall install, operate, and maintain a CPMS on Generators #6, #8, and #9.
(2) JAX shall monitor the catalyst inlet temperature and reduce this data to 4-hour rolling averages to demonstrate compliance with the limitations on the catalyst inlet temperature range.
(3) For any month in which the generator operated, JAX shall monitor the pressure drop across the catalyst once per month to demonstrate compliance with the operating limit established during the last performance test.
(4) JAX shall prepare a site-specific monitoring plan that addresses the requirements outlined in 40 C.F.R. § 63.6625(b)(1).
(5) The CPMS shall be continuously operated in accordance with the site-specific monitoring plan at all times that Generator #6, #8, or #9 are operating except for monitor malfunctions, associated repairs, required performance evaluations, and required quality assurance or control activities.
(6) The CPMS shall collect data at least once every 15 minutes.
(7) The minimum tolerance for a CPMS measuring temperature is 5°F (2.8°C) or 1% of the measurement range, whichever is larger.
(8) CPMS audit procedures shall be performed at least annually.
[40 C.F.R. § 63.6625(b), § 63.6635, and Table 6]

d. Performance Tests

(1) JAX shall conduct an initial performance test on each generator (Generators #6, #8, and #9) in accordance with 40 C.F.R. Part 63, Subpart ZZZZ, Table 4. [40 C.F.R. § 63.6612(a)]

(2) JAX shall perform performance tests on each generator every 8,760 hours of operation or 3 years, whichever comes first. (Due to the limit on hours of operation for each generator, the 3 years will always come first.) [40 C.F.R. § 63.6640(a), Table 3, and Table 6]

(3) JAX shall conduct three separate test runs for each performance test. Each test run must be at least 1 hour, unless otherwise specified. [40 C.F.R. § 63.6620(d)]

(4) During a performance test the facility must establish the pressure drop across the catalyst to be used to demonstrate compliance per the CPMS. [40 C.F.R. § 63.6630(b)]

(5) If the facility changes the catalyst, JAX shall reestablish the values of the operating parameters measured during the performance test. In order to reestablish the operating parameters, the facility shall conduct a performance test to demonstrate that the required emission limitation is being met. [40 C.F.R. § 63.6640(b)]

e. Ultra-Low Sulfur Diesel Fuel Requirement

The diesel fuel fired in Generators #6, #8, and #9 shall not exceed 15 ppm sulfur (0.0015% sulfur) by weight. [40 C.F.R. § 63.6604(a)]

f. General Requirement to Minimize Emissions

At all times JAX shall operate and maintain Generators #6, #8, and #9, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. [40 C.F.R. § 63.6605(b)]

g. Reporting

JAX shall submit to EPA all reports required by Subpart ZZZZ including, but not limited to, the following:

(1) Notification of Intent to conduct a performance test at least 60 days before a performance test is scheduled to begin. [40 C.F.R. § 63.6645(g)]

(2) Semiannual Compliance Reports shall cover the period between January 1 and June 30 or July 1 through December 31 of each year and shall be postmarked by July 31 or January 31 as applicable. The Semiannual Compliance Report shall include the following information:

(i) Company name and address;

(ii) Statement by a responsible official, with the official's name, title, and signature, certifying the accuracy of the content of the report;

(iii) Date of report and beginning and ending dates of the reporting period;

(iv) If there was a malfunction during the reporting period, the compliance report must include the number, duration, and a brief description for each

type of malfunction which occurred during the reporting period and which caused or may have caused any applicable emission limitation to be exceeded. The report must also include a description of actions taken by an owner or operator during a malfunction of an affected source to minimize emissions in accordance with § 63.6605(b), including actions taken to correct a malfunction.;

(v) If there are no deviations from any applicable emission or operating limitations, a statement that there were no deviations from the emission or operating limitations during the reporting period;

(vi) If there were no periods during which the continuous monitoring system (CMS), i.e. CPMS, was out-of-control, as specified in § 63.8(c)(7), a statement that there were no periods during which the CMS was out-of-control during the reporting period; and

(vii) If there were periods of deviation from an emission or operating limitation occurring where the CPMS is used to comply with the emission and operating limitation, the Semiannual Compliance Report shall also include the following information:

1. The date and time that each malfunction started and stopped;
2. The date, time, and duration that each CMS was inoperative, except for zero (low-level) and high-level checks;
3. The date, time, and duration that each CMS was out-of-control, including the information in § 63.8(c)(8);
4. The date and time that each deviation started and stopped, and whether each deviation occurred during a period of malfunction or during another period;
5. A summary of the total duration of the deviation during the reporting period, and the total duration as a percent of the total source operating time during that reporting period;
6. A breakdown of the total duration of the deviations during the reporting period into those that are due to control equipment problems, process problems, or other known causes, and other unknown causes;
7. A summary of the total duration of CMS downtime during the reporting period, and the total duration of CMS downtime as a percent of the total operating time of the associated generator during that reporting period;
8. An identification of each parameter and pollutant that was monitored;
9. A brief description of stationary RICE (Generators #6, #8, and #9);
10. A brief description of the CMS;
11. The date of the last CMS certification or audit; and
12. A description of any changes in CMS, processes, or controls since the last reporting period.

[40 C.F.R. § 63.6650 and Table 7]

h. Record Keeping

JAX shall keep all records required by Subpart ZZZZ including, but not limited to, the following:

(1) A copy of each notification and report that was submitted to comply with Subpart ZZZZ, including all supporting documentation;
(2) Records of the occurrence and duration of each malfunction of the engine, pollution control equipment, or monitoring equipment;
(3) Records of the occurrence and duration of each deviation;
(4) Records of performance tests and performance evaluations;
(5) Records of actions taken during periods of malfunction to minimize emissions, including corrective actions taken to restore normal operation;
(6) Monitoring data from the CPMS; and
(7) Records of maintenance conducted on Generators #6, #8, and #9 and associated control equipment to demonstrate the equipment was operated and maintained according to the maintenance plan.

[40 C.F.R. § 63.6655]

D. 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:

- 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.
- Operating Generators #6, #8, and #9 for 300 hr/year.
- Operating all other engines for 100 hr/year.
- Operating each ethylene oxide sterilizer and incinerator for 8760 hr/year.

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	HAP
Boilers & Vaporizers	12.6	12.6	7.9	47.3	47.3	2.7	–
Generator #2	–	–	–	0.5	0.1	–	–
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	–
Portable Generator	–	–	–	0.5	0.1	–	–
Incinerator #1	3.0	3.0	4.2	9.3	0.8	0.4	–
Incinerator #3	3.8	3.8	1.4	1.6	5.5	1.6	–
Sterilizers	–	–	–	–	–	0.1	0.1
Total TPY	**20.3**	**20.3**	**13.5**	**83.2**	**56.4**	**5.9**	**0.1**

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 (CO_2e).

The quantity of CO_2e emissions from this facility is less than 100,000 tons per year, based on the following:

- the facility's fuel use limits;
- worst case emission factors from the following sources: U.S. EPA's AP-42, the Intergovernmental Panel on Climate Change (IPCC), and *Mandatory Greenhouse Gas Reporting,* 40 C.F.R. Part 98; and
- global warming potentials contained in 40 C.F.R. Part 98.

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

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).

This license amendment restricts the hours of operation for Generators #6, #8, and #9 at or below the hours of operation allowed at the time the facility was last modeled. 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-AB-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, and A-93-71-AA-A, and the following conditions.

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

Conditions (16)(A)(2), (17)(A)(2), (18)(A)(2), and (19)(B) of Air Emission License A-93-71-X-R are Deleted and Replaced with the following New Condition:

(30) JAX shall not exceed a facility-wide fuel use in all boilers and vaporizers combined equivalent to 315,000 MMBtu/year of heat input on a 12-month rolling total basis. This limit is applicable to all fuels fired in the boilers and vaporizers including distillate fuel, natural gas, propane, and wood pellets. Compliance shall be demonstrated by records of fuel use and a log (electronic or paper) calculating the facility's heat input (for boilers and vaporizers) kept on a monthly and 12-month rolling total basis. When calculating the facility's monthly heat input, the following heating values shall be used:

Fuel	Heat Input
Wood Pellets	16.2 MMBtu/ton
Distillate Fuel	0.14 MMBtu/gal
Natural Gas	0.00102 MMBtu/scf
Propane	0.0905 MMBtu/gal

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

Conditions (16)(A)(3) – (6), (17)(A)(3) – (6), and (18)(A)(3) – (6) of Air Emission License A-93-71-X-R are Deleted and Replaced with the following New Condition:

(31) **Distillate Fuel Sulfur Limits for Boilers**

A. Prior to July 1, 2018, the facility shall fire distillate fuel with a maximum sulfur content not to exceed 0.05% by weight. [06-096 C.M.R. ch. 115, BPT]

B. Beginning July 1, 2018, the facility shall not purchase or otherwise obtain distillate fuel with a maximum sulfur content that exceeds 0.0015% by weight (15 ppm). [06-096 C.M.R. ch. 115, BPT]

C. Compliance shall be demonstrated by fuel records from the supplier showing the quantity, type, and the percent sulfur of the fuel delivered. [06-096 C.M.R. ch. 115, BPT]

The following shall replace Condition (17) of Air Emission License A-93-71-X-R:

(17) **Boiler #12**

A. Boiler #12 is licensed to fire distillate fuel, natural gas, propane, and pulverized wood pellets with a moisture content of 10%. [06-096 C.M.R. ch. 115, BPT]

B. Emissions shall not exceed the following:

Emission Unit	Pollutant	lb/MMBtu	Origin and Authority
Boiler #12 (all fuels)	PM	0.030	40 C.F.R. Part 60, Subpart Dc, 40 C.F.R. Part 63, Subpart JJJJJJ, and 06-096 C.M.R. ch. 115, BPT

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

Emission Unit	PM (lb/hr)	PM_{10} (lb/hr)	SO_2 (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Boiler #12 (wood)	1.33	1.33	1.11	8.44	13.32	0.75
Boiler #12 (distillate fuel)	1.50	1.50	2.51	14.97	14.97	0.07
Boiler #12 (natural gas)	1.50	1.50	0.03	4.89	4.11	0.27
Boiler #12 (propane)	1.50	1.50	0.01	7.17	4.14	0.55

D. New Source Performance Standards (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 Boiler #12 including, but not limited to, the following:

1. Visible emissions from Boiler #12 shall not exceed 20% opacity on a six (6) minute block average basis, except for no more than one (1) six (6) minute period per hour of not more than 27% opacity. [40 C.F.R § 60.43c(c)]

2. JAX shall record and maintain records of the amounts of each fuel combusted during each calendar month. [40 C.F.R. § 60.48c(g)]

3. JAX shall submit semi-annual reports to EPA and to the Department. These reports shall include the calendar dates covered in the reporting period and records of fuel supplier certifications. The semi-annual reports are due within 30 days of the end of each six-month period. [40 C.F.R. § 60.48c(j) and 06-096 C.M.R. ch. 115, BPT]

E. Boiler MACT (40 C.F.R. Part 63, Subpart JJJJJJ) Requirements for Boiler #12 [incorporated under 06-096 C.M.R. ch. 115, BPT]

1. Emission Limits and Work Practice Requirements

a. Boiler #12 is subject to the following requirements:

	Operating Limitations
New biomass-fired boilers with heat input capacity of 30 MMBtu/hr or greater (Boiler #12)	- Limit emissions of PM (filterable) to less than or equal to 0.030 lb/MMBtu except for periods of startup and shutdown (40 C.F.R. Part 63, Subpart JJJJJJ, Table 1); - Minimize the boiler's startup and shutdown periods and conduct startups and shutdowns according to the manufacturer's recommended procedures. (40 C.F.R. Part 63, Subpart JJJJJJ, Table 2); - Install and operate a bag leak detection system according to § 63.11224 and operate the fabric filter such that the bag leak detection system alarm does not sound more than 5 percent of the operating time during each 6-month period; (40 C.F.R. Part 63, Subpart JJJJJJ, Table 3); - Maintain the 30-day rolling average operating load of the boiler such that it does not exceed 110 percent of the average operating load recorded during the most recent performance stack test. (40 C.F.R. Part 63, Subpart JJJJJJ, Table 3)

b. Boiler Tune-Up Program:

(1) A boiler tune-up program shall be implemented. The first tune-up is due no later than 61 months after the initial startup. [40 C.F.R. § 63.11223]

(2) Tune-ups for Boiler #12 shall be conducted every five years with no more than 61 months between tune-ups. [40 C.F.R. § 63.11223(c) and 40 C.F.R. Part 63, Subpart JJJJJJ, Table 2]

(3) The boiler tune-up program shall be performed as specified below:

(i) As applicable, inspect the burner, and clean or replace any component of the burner as necessary. Delay of the burner inspection until the next scheduled shutdown is permitted; not to exceed 72 months from the previous inspection. [40 C.F.R. § 63.11223(b)(1) & (c)]

(ii) Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern, consistent with the manufacturer's specifications. [40 C.F.R. § 63.11223(b)(2)]

(iii) Inspect the system controlling the air-to-fuel ratio, as applicable, and ensure it is correctly calibrated and functioning properly. Delay of the inspection until the next scheduled shutdown is permitted; not to exceed 72 months from the previous inspection. [40 C.F.R. § 63.11223(b)(3) & (c)]

(iv) Optimize total emissions of CO, consistent with manufacturer's specifications. [40 C.F.R. § 63.11223(b)(4)]

(v) Measure the concentration in the effluent stream of CO in parts per million by volume (ppmv), and oxygen in volume percent, before and after adjustments are made (measurements may be either on a dry or wet basis, as long as it is the same basis before and after the adjustments are made). Measurements may be taken using a portable CO analyzer. [40 C.F.R. § 63.11223(b)(5)]

(vi) If a unit is not operating on the required date for a tune-up, the tune-up must be conducted within 30 days of start-up. [40 C.F.R. § 63.11223(b)(7)]

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

(i) The concentration of CO in the effluent stream (ppmv) and oxygen (volume percent) measured at high fire or typical operating load both **before** and **after** the boiler tune-up;

(ii) A description of any corrective actions taken as part of the tune-up of the boiler; and

(iii)The types and amounts of fuels used over the 12 months prior to the tune-up of the boiler, but only if the unit was physically and legally capable of using more than one type of fuel during that period. Units sharing a fuel meter may estimate the fuel use by each unit.
[40 C.F.R. § 63.11223(b)(6)]

2. Continuous Monitoring System (CMS) and Continuous Parameter Monitoring System (CPMS)

a. JAX shall install, operate, and maintain a CPMS for Boiler #12. The CPMS includes a bag leak detection system and boiler operating load.
[40 C.F.R. § 63.11222(a)]
b. JAX shall establish a unit-specific limit for maximum operating load (fuel feed rate or steam generation data) in accordance with 40 C.F.R. Part 63, Subpart JJJJJJ, Table 6.
c. The bag leak detection system shall:
(1) Be installed, operated, calibrated, and maintained in a manner consistent with the manufacturer's written specifications and recommendations and in accordance with EPA-454/R-98-015. [40 C.F.R. § 63.11224(f)(2)]
(2) Be certified by the manufacturer to be capable of detecting particulate matter emissions at concentrations of 10 milligrams per actual cubic meter or less. [40 C.F.R. § 63.11224(f)(3)]
(3) Have a sensor which shall provide output of relative or absolute particulate matter loadings. [40 C.F.R. § 63.11224(f)(4)]
(4) Be equipped with a device to continuously record the output signal from the sensor. [40 C.F.R. § 63.11224(f)(5)]
(5) Be equipped with an audible or visual alarm system that will activate automatically when an increase in relative particulate matter emissions over a preset level is detected. The alarm shall be located where it is easily heard or seen by facility personnel. [40 C.F.R. § 63.11224(f)(6)]
d. JAX shall initiate corrective action within 1 hour of a bag leak detection system alarm. [40 C.F.R. § 63.11222(a)(4)]
e. JAX shall continuously monitor the boiler operating load and reduce this data to 30-day rolling averages to demonstrate compliance with the limitations on the maximum operating load in accordance with 40 C.F.R. Part 63, Subpart JJJJJJ, Table 7.
f. JAX shall prepare a site-specific monitoring plan that addresses the requirements outlined in 40 C.F.R. §§ 63.11205(c) and 63.11224(c).
g. The CPMS shall be continuously operated in accordance with the site-specific monitoring plan at all times that Boiler #12 is operating and firing wood except for periods of monitoring system malfunctions or out-of-control periods, repairs associated with monitoring system malfunctions or out-of-control periods, and required monitoring system quality assurance or quality control activities including, as applicable, calibration checks, required zero

and span adjustments, and scheduled CMS maintenance as defined in your site-specific monitoring plan. [40 C.F.R. § 63.11221(b)]

h. The CPMS shall complete a minimum of one cycle of operation every 15 minutes. JAX shall have data values from a minimum of four successive cycles of operation representing each of the four 15-minute periods in an hour, or at least two 15-minute data values during an hour when CMS calibration, quality assurance, or maintenance activities are being performed, to have a valid hour of data. [40 C.F.R. § 63.11224(d)(1)]

i. JAX shall calculate hourly arithmetic averages from each hour of CPMS data and determine the 30-day rolling average of all recorded readings. [40 C.F.R. § 63.11224(d)(2)]

3. Performance Tests

a. JAX shall conduct triennial performance stack tests in accordance with 40 C.F.R. Part 63, Subpart JJJJJJ, Table 4 with no more than 37 months between tests. [40 C.F.R. § 63.11220(a)]

b. JAX shall conduct performance stack tests at the representative operating load conditions while burning the type of fuel (or mixture of fuels) that have the highest emissions potential. [40 C.F.R. § 63.11212(c)]

c. JAX shall conduct a minimum of three separate test runs for each performance stack test. [40 C.F.R. § 63.11212(d)]

4. Notifications and Reports

JAX shall submit to EPA all reports required by 40 C.F.R. Part 63, Subpart JJJJJJ including, but not limited to, the following:

a. A Notification of Intent to conduct a performance test shall be submitted to EPA at least 60 days before the performance stack test is scheduled to begin. [40 C.F.R. § 63.11225(a)(3)] JAX shall also notify the Department of their intent to conduct a performance test at the same time notification is given to EPA.

b. Within 60 days after the date of completing each performance test, JAX shall submit the results of the performance test to EPA's CEDRI database. [40 C.F.R. § 63.11225(e)(1)] JAX shall also submit results to the Department in accordance with Standard Condition (11)(C).

c. Compliance Reports
A compliance report shall be prepared by March 1st of each year. The report shall be maintained by the source and submitted to the Department and to the EPA upon request, unless the source experiences any deviations from the applicable requirements of this Subpart during the previous calendar year, then the report must be submitted to the Department and to the EPA by March 15th. The report must include the items contained in §§ 63.11225(b)(1) – (4), including the following: [40 C.F.R. § 63.11225(b)]

(1) Company name and address;
(2) A statement of whether the source has complied with all the relevant requirements of this Subpart;
(3) A statement certifying truth, accuracy, and completeness of the notification and signed by a responsible official and containing the official's name, title, phone number, email address, and signature;
(4) The following certifications, as applicable:
(i) "This facility complies with the requirements in 40 C.F.R. §63.11223 to conduct tune-ups of each boiler in accordance with the frequency specified in this Subpart."
(ii) "No secondary materials that are solid waste were combusted in any affected unit."
(iii)"This facility complies with the requirement in §§ 63.11214(d) and 63.11223(g) to minimize the boiler's time spent during startup and shutdown and to conduct startups and shutdowns according to the manufacturer's recommended procedures or procedures specified for a boiler of similar design if manufacturer's recommended procedures are not available."
(5) If the source experiences any deviations from the applicable requirements during the reporting period, include a description of deviations, the time periods during which the deviations occurred, and the corrective actions taken; and
(6) The total fuel use by each affected boiler subject to an emission limit for each calendar month within the reporting period.

5. Recordkeeping

a. The following records shall be maintained consistent with the requirements of 40 C.F.R. Part 63, Subpart JJJJJJ including the following
[40 C.F.R. § 63.11225(c)]:
(1) Copies of notifications and reports with supporting compliance documentation;
(2) Identification of the boiler, the date of tune-up, procedures followed for tune-up, and the manufacturer's specifications to which the boiler was tuned;

(3) Records of monthly fuel use including the type(s) of fuel and amount(s) used;
(4) Records of the occurrence and duration of each malfunction of the boiler or its associated pollution control and monitoring equipment; and
(5) Records of actions taken during periods of malfunction to minimize emissions, including corrective actions to restore the malfunctioning boiler, air pollution control equipment, or monitoring equipment.
(6) Records of the bag leak detection system output.
(7) Records of bag leak detection system adjustments, including the date and time of the adjustment, the initial bag leak detection system settings, and the final bag leak detection system settings.

b. JAX shall keep records of the date, time, and duration of all bag leak detection system alarms, and for each valid alarm, the date and time corrective action was initiated, a brief description of the cause of the alarm and the action taken, and date and time on which corrective action was completed. [40 C.F.R. §§ 63.11222(a)(4) and 63.11225(c)(7)(iii)]
c. JAX shall record the percent of the operating time during each 6-month period that the bag leak detection system alarm sounds. If the alarm sounds and inspection of the fabric filter demonstrates that no corrective action is required, no alarm time is counted. If corrective action is required, each alarm is counted as a minimum of 1 hour. [40 C.F.R. § 63.11222(a)(4)]
d. Records shall be in a form suitable and readily available for expeditious review. [40 C.F.R. § 63.11225(d)]

The following shall replace Condition (20) of Air Emission License A-93-71-X-R:
(Included to address the removal of Generators #6, #8, and #9 from this condition.)

(20) **Emergency Generators #2 and #3**

A. Generators #2 and #3 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, BPT]

B. The fuel sulfur content for Generators #2 and #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 #2	0.28	0.28	–	10.28	2.21	0.82
Generator #3	0.30	0.30	–	10.85	2.34	0.86

D. Visible emissions from Generators #2 and #3 shall each not exceed 20% opacity on a six-minute block average basis, except for no more than two six-minute block averages in a three-hour period. [06-096 C.M.R. ch. 101]

E. Generators #2 and #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 Generators #2 and #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 emergency engines, Generators #2 and #3 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 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 Generators #2 and #3 and the hours of operation of each engine recorded through the

non-resettable hour meter. Documentation shall include the number of hours each unit operated for emergency purposes, the number of hours each unit operated for non-emergency purposes, and the reason the engine was in operation during each time. [40 C.F.R. §§ 63.6655(e) and (f)]

5. Operation and Maintenance
   Generators #2 and #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 each 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]

The following is a New Condition:

(32) **Generators #6, #8, and #9**

A. Generators #6, #8, and #9 shall each be limited to 300 hours of operation per calendar year. [06-096 C.M.R. ch. 115, BACT]

B. The fuel sulfur content for Generators #6, #8, and #9 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	Pollutant	lb/MMBtu	Origin and Authority
Generator #6	PM	0.12	06-096 C.M.R. ch. 103, § (2)(B)(1)(a)
Generator #8	PM	0.12	06-096 C.M.R. ch. 103, § (2)(B)(1)(a)
Generator #9	PM	0.12	06-096 C.M.R. ch. 103, § (2)(B)(1)(a)

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

Unit	PM (lb/hr)	PM_{10} (lb/hr)	SO_2 (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Generator #6	1.47	1.47	0.02	39.33	3.13	1.11
Generator #8	1.83	1.83	0.02	48.77	3.89	2.90
Generator #9	1.83	1.83	0.02	48.77	3.89	2.90

E. Visible emissions from Generators #6, #8, and #9 shall each not exceed 20% opacity on a six-minute block average basis, except for no more than two six-minute block averages in a three-hour period. [06-096 C.M.R. ch. 101]

F. Generators #6, #8, and #9 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 each of the engines (Generators #6, #8, and #9):
   a. Limit the concentration of CO in the exhaust to 23 ppmvd at 15% O_2 or Reduce CO emissions by 70% or more;
   b. Minimize the engine's time spent at idle and minimize the engine's startup time at startup 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 apply;
   c. Maintain the catalyst so that the pressure drop across the catalyst does not change by more than 2 inches of water from the pressure drop across the catalyst that was measured during the last performance test; and
   d. Maintain the temperature of the exhaust so that the catalyst inlet temperature is 450°F – 1350°F.

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

2. Crankcase Filtration
   JAX shall operate on Generators #6, #8, and #9 either a closed crankcase ventilation system that prevents crankcase emissions from being emitted to the atmosphere or an open crankcase filtration emission control system that reduces emissions from the crankcase by filtering the exhaust stream to remove oil mist, particulates, and metals.
   [40 C.F.R. § 63.6625(g)(2) and 06-096 C.M.R. ch. 115, BPT]

3. Continuous Parameter Monitoring System (CPMS)
   a. JAX shall install, operate, and maintain a CPMS on Generators #6, #8, and #9.
   b. JAX shall monitor the catalyst inlet temperature and reduce this data to 4-hour rolling averages to demonstrate compliance with the limitations on the catalyst inlet temperature range.
   c. For any month in which the generator operated, JAX shall monitor the pressure drop across the catalyst once per month to demonstrate compliance with the operating limit established during the last performance test.
   d. JAX shall prepare a site-specific monitoring plan that addresses the requirements outlined in 40 C.F.R. § 63.6625(b)(1).
   e. The CPMS shall be continuously operated in accordance with the site-specific monitoring plan at all times that Generators #6, #8, or #9 are operating except for monitor malfunctions, associated repairs, required performance evaluations, and required quality assurance or control activities.

f. The CPMS shall collect data at least once every 15 minutes.
g. The minimum tolerance for a CPMS measuring temperature is 5°F (2.8°C) or 1% of the measurement range, whichever is larger.
h. CPMS audit procedures shall be performed at least annually.

[40 C.F.R. § 63.6625(b), § 63.6635, Table 6, and 06-096 C.M.R. ch. 115, BPT]

4. Performance Tests
   a. JAX shall conduct an initial performance test on each generator (Generators #6, #8, and #9) in accordance with 40 C.F.R. Part 63, Subpart ZZZZ, Table 4. [40 C.F.R. § 63.6612(a)]
   b. JAX shall perform performance tests every 8,760 hours of operation or 3 years, whichever comes first. (Due to the limit on hours of operation for each generator, the 3 years should always come first.) [40 C.F.R. § 63.6640(a), Table 3, and Table 6]
   c. JAX shall conduct three separate test runs for each performance test. Each test run must be at least 1 hour, unless otherwise specified. [40 C.F.R. § 63.6620(d)]
   d. During a performance test the facility must establish the pressure drop across the catalyst to be used to demonstrate compliance per the CPMS. [40 C.F.R. § 63.6630(b)]
   e. If the facility changes the catalyst, JAX shall reestablish the values of the operating parameters measured during the performance test. In order to reestablish the operating parameters, the facility shall conduct a performance test to demonstrate that the required emission limitation is being met. [40 C.F.R. § 63.6640(b)]

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

5. General Requirement to Minimize Emissions
   At all times JAX shall operate and maintain Generators #6, #8, and #9, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. [40 C.F.R. § 63.6605(b) and 06-096 C.M.R. ch. 115, BPT]

6. Reporting
   JAX shall submit to EPA all reports required by Subpart ZZZZ including, but not limited to, the following [06-096 C.M.R. ch. 115, BPT]:
   a. Notification of Intent to conduct a performance test at least 60 days before the performance test is scheduled to begin. [40 C.F.R. § 63.6645(g)]
   b. Semiannual Compliance Reports shall cover the period between January 1 and June 30 or July 1 through December 31 of each year and shall be postmarked by July 31 or January 31 as applicable. The Semiannual Compliance Report shall include the following information:
      (1) Company name and address;
      (2) Statement by a responsible official, with the official's name, title, and signature, certifying the accuracy of the content of the report;

(3) Date of report and beginning and ending dates of the reporting period;
(4) If there was a malfunction during the reporting period, the compliance report must include the number, duration, and a brief description for each type of malfunction which occurred during the reporting period and which caused or may have caused any applicable emission limitation to be exceeded. The report must also include a description of actions taken by an owner or operator during a malfunction of an affected source to minimize emissions in accordance with §63.6605(b), including actions taken to correct a malfunction.;
(5) If there are no deviations from any applicable emission or operating limitations, a statement that there were no deviations from the emission or operating limitations during the reporting period;
(6) If there were no periods during which the continuous monitoring system (CMS), i.e. CPMS, was out-of-control, as specified in § 63.8(c)(7), a statement that there were no periods during which the CMS was out-of-control during the reporting period; and
(7) If there were periods of deviation from an emission or operating limitation occurring where the CPMS is used to comply with the emission and operating limitation, the Semiannual Compliance Report shall also include the following information:
    (i) The date and time that each malfunction started and stopped;
    (ii) The date, time, and duration that each CMS was inoperative, except for zero (low-level) and high-level checks;
    (iii) The date, time, and duration that each CMS was out-of-control, including the information in § 63.8(c)(8);
    (iv) The date and time that each deviation started and stopped, and whether each deviation occurred during a period of malfunction or during another period;
    (v) A summary of the total duration of the deviation during the reporting period, and the total duration as a percent of the total source operating time during that reporting period;
    (vi) A breakdown of the total duration of the deviations during the reporting period into those that are due to control equipment problems, process problems, or other known causes, and other unknown causes;
    (vii) A summary of the total duration of CMS downtime during the reporting period, and the total duration of CMS downtime as a percent of the total operating time of Generators #6, #8, and #9 during that reporting period;
    (viii) An identification of each parameter and pollutant that was monitored;
    (ix) A brief description of stationary RICE (Generators #6, #8, and #9);
    (x) A brief description of the CMS;
    (xi) The date of the last CMS certification or audit; and

(xii) A description of any changes in CMS, processes, or controls since the last reporting period.

[40 C.F.R. § 63.6650 and Table 7]

7. Record Keeping

JAX shall keep all records required by Subpart ZZZZ including, but not limited to, the following:

a. A copy of each notification and report that was submitted to comply with Subpart ZZZZ, including all supporting documentation;
b. Records of the occurrence and duration of each malfunction of the engine, pollution control equipment, or monitoring equipment;
c. Records of the occurrence and duration of each deviation;
d. Records of performance tests and performance evaluations;
e. Records of actions taken during periods of malfunction to minimize emissions, including corrective actions taken to restore normal operation;
f. Monitoring data from the CPMS; and
g. Records of maintenance conducted on Generators #6, #8, and #9 and control equipment to demonstrate the equipment was operated and maintained according to the maintenance plan.

[40 C.F.R. § 63.6655 and 06-096 C.M.R. ch. 115, BPT]

DONE AND DATED IN AUGUSTA, MAINE THIS 7 DAY OF November , 2016.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: Marc Allen Robert Cone for
PAUL MERCER, 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: 9/20/16
Date of application acceptance: 9/21/16

Date filed with the Board of Environmental Protection:

Filed
NOV 08 2016
State of Maine
Board of Environmental Protection

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