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

DEPARTMENT ORDER

Portsmouth Naval Shipyard **York County** **Kittery, Maine** **A-452-77-14-A**	**Departmental** **Findings of Fact and Order** **Air Emission License** **NSR #14**

FINDINGS OF FACT

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

I. REGISTRATION

A. Introduction

FACILITY	**Portsmouth Naval Shipyard (PNS)**
LICENSE TYPE	06-096 C.M.R. ch. 115, Minor Modification
NAICS CODES	336611 (Ship Building and Repairing)
NATURE OF BUSINESS	National Security (Submarine repair for U.S. Navy)
FACILITY LOCATION	Kittery, Maine

B. NSR License Description

Portsmouth Naval Shipyard (PNS) has requested a New Source Review (NSR) license for the installation of two 1.75 MMBtu/hr natural gas fired boilers and three distillate fuel-fired emergency engines: two @ 1,500 kW each and one @ 1,000 kW.

C. Emission Equipment

The following equipment is addressed in this New Source Review air emission license:

Boilers

Equipment	Maximum Capacity (MMBtu/hr)	Maximum Firing Rate (scf/hr)	Fuel Type	Date of Manuf.	Date of Install.	Stack #
Boiler #1509-1	1.75	1,725	Natural Gas	2020	2021	1509-1
Boiler #1509-2	1.75	1,725	Natural Gas	2020	2021	1509-2

Stationary Engines

Equipment	Max. Input Capacity (MMBtu/hr)	Rated Output Capacity (kW or HP)	Fuel Type, % sulfur	Firing Rate (gal/hr)	Date of Manuf.	Date of Install.	Stack #
G39	15.2	1,500 kW	Distillate fuel, 0.0015% S	110	2006	*2019	130
G40	14.33	1,500 kW		103	2019	2021	131
G41	9.85	1,000 kW		71.9	2020	2021	132

* Unit was previously a temporary rental unit.

D. 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.

E. Application Classification

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

The application for the addition of Boilers #1509-1 and #1509-2, and Emergency Generators G39, G40, and G41, does not violate any applicable federal or state requirements and does not reduce monitoring, reporting, testing, or recordkeeping requirements.

The modification of a major source is considered a major or minor modification based on whether or not expected emissions increases exceed the "Significant Emission Increase" levels as given in *Definitions Regulation*, 06-096 Code of Maine Rules (C.M.R.) ch. 100. For a major stationary source, the expected emissions increase from each new, modified, or affected unit may be calculated as equal to the difference between the post-modification projected actual emissions and the baseline actual emissions for each NSR regulated pollutant.

1. Baseline Actual Emissions

Baseline actual emissions (BAE) for existing affected emission units are equal to the average annual emissions from any consecutive 24-month period within the ten years prior to submittal of a complete license application. The selected 24-month baseline

period can differ on a pollutant-by-pollutant basis. However, there are no existing emission units which are considered "affected" by this project.

The only equipment addressed by this license are new emission units. Baseline actual emissions for new equipment are considered to be zero for all pollutants; therefore, the selection of a baseline year is unnecessary.

2. Projected Actual Emissions

New emission units must use potential to emit (PTE) emissions for projected actual emissions (PAE). Those emissions are presented in the following table.

Projected Actual Emissions

Equipment	PM (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)	SO_2 (tpy)	NO_x (tpy)	CO (tpy)	VOC (tpy)
Boiler #1509-1	0.38	0.38	0.38	0.005	0.74	0.63	0.04
Boiler #1509-2	0.38	0.38	0.38	0.005	0.74	0.63	0.04
Emergency Generator G39	0.09	0.09	0.09	0.0012	2.43	0.65	0.07
Emergency Generator G40	0.09	0.09	0.09	0.0011	1.10	0.10	0.02
Emergency Generator G41	0.06	0.06	0.06	0.0008	0.88	0.04	0.01
Total	**1.00**	**1.00**	**1.00**	**0.01**	**5.89**	**2.05**	**0.18**

3. Emissions Increases

Emissions increases are calculated by subtracting BAE from the PAE. Because there are no baseline emissions for new units, the emissions increases are equal to the PAE. The emission increase is then compared to the significant emissions increase levels.

Pollutant	Projected Actual Emissions (ton/year)	Emissions Increase (ton/year)	Significant Emissions Increase Levels (ton/year)
PM	1.00	+1.00	25
PM_{10}	1.00	+1.00	15
$PM_{2.5}$	1.00	+1.00	10
SO_2	0.01	+0.01	40
NO_x	5.89	+5.89	40
CO	2.05	+2.05	100
VOC	0.18	+0.18	40

4. Classification

Since emissions increases do not exceed significant emissions increase levels, this NSR license is determined to be a minor modification under *Minor and Major Source Air Emission License Regulations,* 06-096 C.M.R. ch. 115.

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 06-096 C.M.R. ch. 100. BACT is a top-down approach to selecting air emission controls considering economic, environmental, and energy impacts.

B. Boilers #1509-1 and #1509-2

PNS is to install and operate two Lochinvar Crest Condensing Boilers, Boilers #1509-1 and #1509-2, for steam or heat. Each boiler is rated at 1.75 MMBtu/hr and fires only natural gas. The boilers are to be installed in winter of 2020/2021 and shall exhaust through individual stacks.

1. BACT Findings

Following is a BACT analysis for control of emissions from Boilers #1509-1 and #1509-2.

a. Particulate Matter (PM, PM_{10})
PNS has proposed to fire only natural gas, a low-ash content fuel, in the boilers. Additional add-on pollution controls are not economically feasible.

BACT for PM/PM_{10} emissions from Boiler #1509-1 and Boiler #1509-2 is the firing of natural gas and the emission limits listed in the tables below.

b. Sulfur Dioxide (SO_2)
PNS has proposed to fire only natural gas, a low sulfur-content fuel, in the boilers. The use of this fuel results in minimal emissions of SO_2. Additional add-on pollution controls are not economically feasible.

BACT for SO_2 emissions from Boiler #1509-1 and Boiler #1509-2 is the use of natural gas and the emission limits listed in the tables below.

c. Nitrogen Oxides (NO_x)

PNS considered several control strategies for the control of NO_x including Selective Catalytic Reduction (SCR), Selective Non-Catalytic Reduction (SNCR), water/steam injection, flue gas recirculation (FGR), and low NO_x burners.

Both SCR and SNCR are technically feasible control technologies for minimizing NO_x. However, they have a negative environmental impact of emissions of unreacted ammonia. In addition, due to the initial capital cost and the annual operating costs, these systems are typically only considered cost effective for units larger than Boiler #1509-1 and Boiler #1509-2.

Water/steam injection and FGR have similar NO_x reduction efficiencies. However, water/steam injection results in reduced boiler efficiency of approximately 5% and not considered as a feasible strategy for these boilers.

The use of FGR on Boilers #1509-1 and #1509-2 is not cost effective for units of this size, thus not considered BACT for the control of NO_x from these boilers. The boilers are equipped with low NO_x burners determined to be feasible and has been selected as part of the BACT strategy.

BACT for NO_x emissions from Boilers #1509-1 and #1509-2 is the use of low NO_x burners and the emission limits listed in the tables below.

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

PNS considered several control strategies for the control of CO and VOC including oxidation catalysts, thermal oxidizers, and use of an oxygen trim system.

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

BACT for CO and VOC emissions from Boilers #1509-1 and #1509-2 is the use of a good combustion practices and the emission limits listed in the tables below.

e. Emission Limits

The BACT emission limits for Boiler #1509-1 and Boiler #1509-2 were based on the following:

Natural Gas

PM/PM_{10}	–	0.05 lb/MMBtu, 06-096 C.M.R. ch. 115, BACT
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	–	06-096 C.M.R. ch. 115, BACT

The BACT emission limits for Boilers #1509-1 and #1509-2 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)
Boiler #1509-1 Natural gas	0.09	0.09	0.001	0.17	0.14	0.01
Boiler #1509-2 Natural gas	0.09	0.09	0.001	0.17	0.14	0.01

2. Visible Emissions

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

3. Periodic Monitoring

The PNS facility-wide natural gas fuel use limit of 2.26 billion cubic feet per year will not change as a result of bringing these units online. Periodic monitoring shall include recordkeeping to document fuel use both on a monthly and 12-month rolling total basis. Documentation shall include the type of fuel used.

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

Due to their size, the boilers are not subject to *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units* 40 C.F.R. Part 60, Subpart Dc for units greater than 10 MMBtu/hr manufactured after June 9, 1989. [40 C.F.R. § 60.40c]

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

   Boilers #1509-1 and #1509-2 are not subject to the *National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources*, 40 C.F.R. Part 63, Subpart JJJJJJ. Subpart JJJJJ, is not applicable to boilers firing natural gas, therefore Boilers #1509-1 and #1509-2 are not subject to this subpart. [40 C.F.R. § 63.11195(e)]

C. Emergency Generators G39, G40, and G41

PNS has requested to install and operate three distillate fuel-fired emergency generators. The emergency generators are generator sets with each gen set consisting of an engine and an electrical generator. Emergency Generator G39 was brought onsite as a portable rental unit; PNS has since decided to purchase the unit and add it to their license. Emergency Generators G40 and G41 are new units. The emergency generators have engines rated at 15.2 MMBtu/hr, 14.33 MMBtu/hr, and 9.85 MMBtu/hr**.** The emergency generators were manufactured in 2006, 2019, and 2020, respectively**.**

1. BACT Findings

   a. Particulate Matter (PM and PM_{10})

      PM emissions from distillate fuel-fired engines are generally controlled through proper operation and maintenance. Additionally, these engines will be subject to 40 C.F.R. Part 60, Subpart IIII, which means they will be required to meet EPA emission standards for emergency stationary engines as discussed below. Given the operating hours restrictions included in 40 C.F.R. Part 60, Subpart IIII, the use of add-on controls for PM is not economically feasible. BACT for PM and PM_{10} emissions from Emergency Generators G39, G40, and G41 shall be proper operation and maintenance of the units, installation of EPA certified emergency stationary engines as required in 40 C.F.R. § 60.4205(b), and the emission limits listed in the tables below.

   b. Sulfur Dioxide (SO_2)

      For emergency engines that fire distillate fuel and operate for only short periods of time, the use of wet scrubbers or other additional SO_2 add-on control methods would not be economically feasible considering the minimal emissions due to the limited use of the engines. The most practical method for limiting SO_2 emissions from such engines is the use of ultra-low sulfur fuel, such as distillate fuel with a sulfur content no greater than 0.0015% by weight. BACT for SO_2 emissions from Emergency Generators G39, G40, and G41 shall be the use of distillate fuel with a sulfur content no greater than 0.0015% by weight, installation of EPA certified

emergency stationary engines as required in 40 C.F.R. § 60.4205(b), and the emission limits listed in the tables below.

c. Nitrogen Oxides (NO_x)

Potentially available control options for reducing emissions of NO_x from distillate fuel-fired generators include combustion controls, selective catalytic reduction (SCR), and non-selective catalytic reduction (NSCR). Combustion controls are typically implemented through design features such as electronic engine controls, injection systems, combustion chamber geometry, and turbocharging systems.

SCR and NSCR are both post-combustion NO_x reduction technologies. SCR uses ammonia to react with NO_x in the gas stream in the presence of a catalyst to form nitrogen and water. NSCR uses a catalyst to convert CO, NO_x, and hydrocarbons into carbon dioxide, nitrogen, and water without the use of an additional reagent, and requires strict air-to-fuel control to maintain high reduction effectiveness without increasing hydrocarbon emissions. For units of this usage (emergency back-up engine), neither SCR nor NSCR would be economically feasible considering the minimal emissions due to the limited use of the engines.

BACT for NO_x emissions from Emergency Generators G39, G40, and G41 shall be the use of good combustion controls, proper operation and maintenance of the units, installation of EPA certified emergency stationary engines as required in 40 C.F.R. § 60.4205(b), and the emission limits listed in the tables below.

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

CO and VOC emissions are a result of incomplete combustion, caused by conditions such as insufficient residence time or limited oxygen availability. CO and VOC emissions from distillate fuel-fired generators are generally controlled through proper operation and maintenance of the units. Oxidation catalysts have been used on large generators to reduce CO and VOC emission levels in the exhaust, but, like SCR and NSCR, use of an oxidation catalyst on an emergency engine with limited yearly use would not provide a significant environmental benefit and would not be economically feasible. BACT for CO and VOC emissions from Emergency Generators G39, G40, and G41 shall be proper operation and maintenance of the units, installation of EPA certified emergency stationary engines as required in 40 C.F.R. § 60.4205(b), and the emission limits listed in the tables below.

e. Visible Emissions

BACT for visible emissions from Emergency Generators G39, G40, and G41 shall be the following:

Visible emissions from Emergency Generators G39, G40, and G41 shall each not exceed 20% opacity on a six-minute block average basis.

f. Fuel Use Restriction

The fuel fired in Emergency Generators G39, G40, and G41 shall be included in the facility's distillate fuel limit of 4,900,000 gallons/year, based on a 12-month rolling total.

g. Emission Limits

The BACT emission limits for Emergency Generator G39 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 of 15 ppm (0.0015% sulfur by weight)
NO_x	- 3.2 lb/MMBtu from AP-42 Table 3.4-1 dated 10/96
CO	- 0.85 lb/MMBtu from AP-42 Table 3.4-1 dated 10/96
VOC	- 0.09 lb/MMBtu from AP-42 Table 3.4-1 dated 10/96
Visible Emissions	- 06-096 C.M.R. ch. 115, BACT

The BACT emission limits for Emergency Generator G40 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 of 15 ppm (0.0015% sulfur by weight)
NO_x	- 4.97 g/hp-hr based on manufacturer's data
CO	- 0.45 g/hp-hr based on manufacturer's data
VOC	- 0.11 g/hp-hr based on manufacturer's data
Visible Emissions	- 06-096 C.M.R. ch. 115, BACT

The BACT emission limits for Emergency Generator G41 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 of 15 ppm (0.0015% sulfur by weight)
NO_x	- 5.97 g/hp-hr based on manufacturer's data
CO	- 0.24 g/hp-hr based on manufacturer's data
VOC	- 0.03 g/hp-hr based on manufacturer's data
Visible Emissions	- 06-096 C.M.R. ch. 115, BACT

The BACT emission limits for the generators are the following:

Unit	Pollutant	lb/MMBtu
Emergency Generator G39	PM	0.12
Emergency Generator G40	PM	0.12
Emergency Generator G41	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)
Emergency Generator G39	1.82	1.82	0.02	48.64	12.92	1.37
Emergency Generator G40	1.72	1.72	0.02	22.03	2.00	0.49
Emergency Generator G41	1.18	1.18	0.02	17.65	0.71	0.09

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

2. 40 C.F.R. Part 60, Subpart IIII

Standards of Performance for Stationary Compression Ignition Internal Combustion Engines, 40 C.F.R. Part 60, Subpart IIII is applicable to the emergency engine**s** listed above since the units were ordered after July 11, 2005 and manufactured after April 1, 2006. [40 C.F.R. § 60.4200] By meeting the requirements of 40 C.F.R. Part 60, Subpart IIII, the units also meet the requirements found in the *National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*, 40 C.F.R. Part 63, Subpart ZZZZ. [40 C.F.R. § 63.6590(c)]

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

a. Emergency Engine Designation and Operating Criteria

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

(1) Emergency Situation Operation (On-Site)

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

- Use of an engine to produce power for critical networks or equipment (including power supplied to portions of a facility) because of failure or interruption of electric power from the local utility (or the normal power source, if the facility runs on its own power production);
- Use of an engine to mitigate an on-site disaster or equipment failure;
- Use of an engine to pump water in the case of fire, flood, natural disaster, or severe weather conditions; and
- Similar instances.

(2) Non-Emergency Situation Operation

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

(i) An emergency engine may be operated for a maximum of 100 hours per calendar year for maintenance checks and readiness testing, provided that the tests are recommended by federal, state, or local government; the manufacturer; the vendor; the regional transmission organization or equivalent balancing authority and transmission operator; or the insurance company associated with the engine. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that federal, state, or

local standards require maintenance and testing of emergency ICE more than 100 hours per calendar year.

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

The 50 hours per calendar year operating limit for other non-emergency situations cannot be used for peak shaving, demand response, or to generate income for a facility by providing power to an electric grid or otherwise supply power as part of a financial arrangement with another entity.

[40 C.F.R. §§ 60.4211(f) and 60.4219]

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

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

(2) Ultra-Low Sulfur Fuel Requirement
The fuel fired in the engines shall not exceed 15 ppm sulfur (0.0015% sulfur). [40 C.F.R. § 60.4207(b)]

(3) Non-Resettable Hour Meter Requirement
A non-resettable hour meter shall be installed and operated on each engine. [40 C.F.R. § 60.4209(a)]

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

(5) Annual Time Limit for Maintenance and Testing
As emergency engines, the units shall each be limited to 100 hours/year for maintenance checks and readiness testing. Up to 50 hours/year of the 100 hours/year may be used in non-emergency situations (this does not include peak shaving, demand response, or to generate income for a facility by providing power to an electric grid or otherwise supply power as part of a financial arrangement with another entity). [40 C.F.R. § 60.4211(f)]

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

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

D. Incorporation Into the Part 70 Air Emission License

Per *Part 70 Air Emission License Regulations*, 06-096 C.M.R. ch. 140 § 1(C)(8), for a modification at the facility that has undergone NSR requirements or been processed through 06-096 C.M.R. ch. 115, the source must apply for an amendment to their Part 70 license within one year of commencing the proposed operations, as provided in 40 C.F.R. Part 70.5. An application to incorporate the requirements of this NSR license into the Part 70 air emission license was submitted to the Department on April 1, 2020.

E. Annual Emissions

PNS is currently licensed to facility-wide limits of 2.26 billion cubic feet of natural gas per year and 4,9000,000 gallons of distillate fuel per year, based on a 12-month rolling total. Neither of these limits nor the licensed annual emissions based on them will change as a result of the installation of Boilers #1509-1 and #1509-2 and Emergency Generators G39, G40, and G41.

III. AMBIENT AIR QUALITY ANALYSIS

PNS previously submitted an ambient air quality impact analysis outlined in air emission license A-452-70-A-I (dated March 1, 2000) 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 NSR license.

ORDER

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

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

The Department hereby grants New Source Review License A-452-77-14-A pursuant to the preconstruction licensing requirements of 06-096 C.M.R. ch. 115 and subject to the specific conditions below.

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

SPECIFIC CONDITIONS

(1) **Boilers #1509-1 and #1509-2**

A. Fuel

1. Boilers #1509-1 and #1509-2 shall fire natural gas only.

2. The fuel fired in Boilers #1509-1 and #1509-2 shall be included in the PNS facility-wide natural gas fuel use limit of 2.26 billion cubic feet per year.

3. Periodic monitoring shall include recordkeeping to document fuel use both on a monthly and 12-month rolling total basis.

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

B. Boilers #1509-1 and #1509-2 shall be equipped and operated with low NO_x burners.

C. 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)
Boiler #1509-1	0.09	0.09	0.001	0.17	0.14	0.01
Boiler #1509-2	0.09	0.09	0.001	0.17	0.14	0.01

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

(2) **Emergency Generators G39, G40, G41**

A. Each of the emergency generators 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. Fuel Use Restriction

The fuel fired in Emergency Generators G39, G40, and G41 shall be included in the facility's distillate fuel limit of 4,900,000 gallons/year, based on a 12-month rolling total.

C. Emissions shall not exceed the following:

Unit	Pollutant	lb/MMBtu	Origin and Authority
Emergency Generator G39	PM	0.12	06-096 C.M.R. ch. 103, § (2)(B)(1)(a)
Emergency Generator G40	PM	0.12	06-096 C.M.R. ch. 103, § (2)(B)(1)(a)
Emergency Generator G41	PM	0.12	06-096 C.M.R. ch. 103, § (2)(B)(1)(a)

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

Unit	PM (lb/hr)	PM_{10} (lb/hr)	SO_2 (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Emergency Generator G39	1.82	1.82	0.02	48.64	12.92	1.37
Emergency Generator G40	1.72	1.72	0.02	22.03	2.00	0.49
Emergency Generator G41	1.18	1.18	0.02	17.65	0.71	0.09

E. Visible Emissions

Visible emissions from each of the emergency generators and shall not exceed 20% opacity on a six-minute block average basis. [06-096 C.M.R. ch. 115, BACT]

F. Emergency Generators G39, G40, and G41 shall meet the applicable requirements of 40 C.F.R. Part 60, Subpart IIII, including the following:

1. Manufacturer Certification
   Each 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 engines 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, BACT]

3. Non-Resettable Hour Meter
   A non-resettable hour meter shall be installed and operated on each engine.
   [40 C.F.R. § 60.4209(a)]

4. Annual Time Limit for Maintenance and Testing
   As emergency engines, the units shall each be limited to 100 hours/year for maintenance checks and readiness testing. Up to 50 hours/year of the 100 hours/year may be used in non-emergency situations (this does not include peak shaving, demand response, or to generate income for a facility by providing power to an electric grid or otherwise supply power as part of a financial arrangement with another entity). 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, BACT]

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

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

DONE AND DATED IN AUGUSTA, MAINE THIS 15th DAY OF JANUARY, 2021.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: _____ for _____
MELANIE LOYZIM, ACTING COMMISSIONER

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: April 3, 2020
Date of application acceptance: April 6, 2020

Date filed with the Board of Environmental Protection:

This Order prepared by Lisa P. Higgins, Bureau of Air Quality.

FILED

JAN 15, 2021

State of Maine
Board of Environmental Protection