



DEPARTMENT ORDER

**Portsmouth Naval Shipyard  
York County  
Kittery, Maine  
A-452-70-G-A**

**Departmental  
Findings of Fact and Order  
Part 70 Air Emission License  
Amendment #4**

**FINDINGS OF FACT**

After review of the Part 70 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**

<b>FACILITY</b>	<b>Portsmouth Naval Shipyard (PNS)</b>
<b>LICENSE TYPE</b>	<b>Part 70 Significant License Modification</b>
<b>NAICS CODES</b>	<b>336611 (Ship Building and Repairing)</b>
<b>NATURE OF BUSINESS</b>	<b>National Security (Submarine repair for U.S. Navy)</b>
<b>FACILITY LOCATION</b>	<b>Kittery, Maine</b>

Portsmouth Naval Shipyard (PNS, the Shipyard) is an existing stationary source currently operating under Part 70 License A-452-70-D-R/A, issued July 23, 2015, Part 70 Significant License Modifications A-452-70-E-A, issued November 3, 2017, and A-452-70-F-A, issued May 24, 2018, Part 70 Administrative Revision A-452-70-H-A, issued July 7, 2018, and licenses to construct issued under the New Source Review (NSR) program as found in *Minor and Major Source Air Emission License Regulations*, 06-096 Code of Maine Rules (C.M.R.) ch. 115.

PNS has requested an amendment to the facility's Part 70 license to incorporate the terms and conditions of NSR License A-452-77-10-A, issued July 9, 2018. This NSR license was issued for the addition of three 1,000 kW emergency generators, identified as Emergency Generators G29-G31, and three 300 kW emergency generators, identified as Emergency Generators G32-G34. The Department is also using this amendment as an opportunity to clarify the recordkeeping and reporting required by *Emission Statements*, 06-096 C.M.R. ch. 137.

B. Emission Equipment

The following emission units are addressed by this Part 70 license amendment:

**Emergency Generators**

<b>Equipment</b>	<b>Max. Heat Input Capacity (MMBtu/hr)</b>	<b>Max. Firing Rate (gal/hr)</b>	<b>Output (kW)</b>	<b>Fuel Type, % sulfur</b>	<b>Mfr. Date</b>	<b>Install. Date</b>
Emergency Generator G29	10.0	71.9	1,000	Distillate fuel, 0.0015%	2018	2018
Emergency Generator G30	10.0	71.9	1,000	Distillate fuel, 0.0015%	2018	2018
Emergency Generator G31	10.0	71.9	1,000	Distillate fuel, 0.0015%	2018	2018
Emergency Generator G32	3.1	22.7	300	Distillate fuel, 0.0015%	2018	2018
Emergency Generator G33	3.1	22.7	300	Distillate fuel, 0.0015%	2018	2018
Emergency Generator G34	3.1	22.7	300	Distillate fuel, 0.0015%	2018	2018

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 application for PNS does not include the licensing of increased emissions; however, the inclusion of NSR requirements from NSR #10 is not considered a Part 70 minor license modification or Part 70 administrative revision. Therefore, the license is considered to be a Part 70 significant license modification and has been processed through *Part 70 Air Emission License Regulations*, 06-096 C.M.R. ch. 140.

## II. AMENDMENT DESCRIPTION

### A. NSR License Description

#### NSR License A-452-77-10-A

The Department issued NSR License A-452-77-10-A to PNS on July 9, 2018. The license was issued to install six new pieces of equipment at the facility: three new 1,000 kW emergency generators, Emergency Generators G29-G31, and three new 300 kW emergency generators, Emergency Generators G32-G34, all to provide backup power at the facility. The license was issued pursuant to federal NSR Prevention of Significant Deterioration (PSD) requirements and the Department's air licensing requirements for minor modifications at major stationary sources.

### B. 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 as well as for those sources located in designated non-attainment areas.

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.

BACT for these new units was documented in NSR License A-452-77-10-A (7/9/2018). The BACT requirements are included in this license.

### C. Emissions Statement

The following language is included to clarify the requirements of 06-096 C.M.R. ch. 137:

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

1. The amount of distillate fuel and/or natural gas fired in each emission unit on a monthly basis (based on either fuel flow meters or purchase receipts and hours of operation);
2. The sulfur content of the distillate fuel fired in each emission unit;
3. The throughput of each piece of process equipment on a monthly basis;

4. Calculations of the VOC and/or HAP emissions from the Gasoline Storage Tanks, Painting and Coating Operations, Parts Washers, and any other VOC/HAP emitting processes on a calendar year total basis; and
5. Hours of operation for each process unit on a calendar year total basis.

In reporting year 2020 and every third year thereafter, PNS shall report to the Department emissions of hazardous air pollutants as required by 06-096 C.M.R. ch. 137, § (3)(C). The Department will use these reports to calculate and invoice for the applicable annual air quality surcharge for the subsequent three billing periods. PNS shall pay the annual air quality surcharge, calculated by the Department based on these reported emissions of hazardous air pollutants, by the date required in Title 38 M.R.S. § 353-A(3). [38 M.R.S. § 353-A(1-A)]

D. Emergency Generators G29-G34

PNS operates Emergency Generators G29 through G34 to provide emergency backup power to support facilities at the Shipyard. All six units are generator sets, with each gen set consisting of a Caterpillar engine and an electrical generator. Emergency Generators G29-G31 each have engines rated at 10 MMBtu/hr (1,000 kW output) and Emergency Generators G32-G34 each have engines rated at 3.1 MMBtu/hr (300 kW output), all of which fire distillate fuel. All six units will be manufactured and installed at the facility in 2018.

1. BACT and Emission Standards

The BACT analysis documented in NSR License A-452-77-10-A (7/9/2018) identified the following emission factors as the basis for BACT emission limits for Emergency Generators G29 through G31:

PM/PM <sub>10</sub>	- 0.12 lb/MMBtu from 06-096 C.M.R. ch. 103, § 2.B.(1)(a)
SO <sub>2</sub>	- combustion of distillate fuel with a maximum sulfur content not to exceed 15 ppm (0.0015% sulfur by weight)
NO <sub>x</sub>	- 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 analysis documented in NSR License A-452-77-10-A (7/9/2018) identified the following emission factors as the basis for BACT emission limits for Emergency Generators G32 through G34:

- PM/PM<sub>10</sub> - 0.12 lb/MMBtu from 06-096 C.M.R. ch. 103, § 2.B.(1)(a)
- SO<sub>2</sub> - combustion of distillate fuel with a maximum sulfur content not to exceed 15 ppm (0.0015% sulfur by weight)
- NO<sub>x</sub> - 4.41 lb/MMBtu from AP-42, Table 3.3-1, dated 10/96
- CO - 0.95 lb/MMBtu from AP-42, Table 3.3-1, dated 10/96
- VOC - 0.35 lb/MMBtu from AP-42, Table 3.3-1, dated 10/96
- Visible Emissions - 06-096 C.M.R. ch. 115, BACT

The BACT emission limits for Emergency Generators G29 through G34 are the following:

Unit	Pollutant	lb/MMBtu
Emergency Generators G29-G34 [each]	PM	0.12

Units	PM (lb/hr)	PM <sub>10</sub> (lb/hr)	SO <sub>2</sub> (lb/hr)	NO <sub>x</sub> (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Emergency Generators G29-G31 [each]	1.20	1.20	0.02	32.00	8.50	0.90
Emergency Generators G32-G34 [each]	0.37	0.37	0.01	13.67	2.95	1.09

Visible emissions from each emergency generator shall not exceed 20% opacity on a six-minute block average basis, except for no more than one six-minute block average in a one-hour period to accommodate periods of startup and load changes. During such periods, the facility shall comply with the following work practice standards:

- a. The unit operator shall maintain a log (written or electronic) of the date, time, and duration of all unit startups;
- b. The units shall be operated in accordance with the manufacturer's emission-related operating instructions;
- c. The unit operator shall 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, after which time the non-startup emission limitations apply; and

- d. The units, including any associated air pollution control equipment, shall be operated at all times in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Department that may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the units.

Compliance with the above limits shall be demonstrated by emissions testing as requested by the Department.

2. *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*, 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 Emergency Generators G29 through G34 since the units were ordered after July 11, 2005, and manufactured after April 1, 2006. By meeting the requirements of 40 C.F.R. Part 60, Subpart IIII, the internal combustion engines (ICE) also meet the requirements found in *National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*, 40 C.F.R. Part 63, Subpart ZZZZ.

- a. Emergency Engine Designation and Operating Criteria

Under 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 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 CFR §60.4211(f) and §60.4219]

b. 40 C.F.R. Part 60, Subpart III 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 distillate fuel fired in the engines shall not exceed 15 ppm sulfur (0.0015% sulfur), except that any existing distillate fuel purchased (or otherwise obtained) prior to October 1, 2010, may be used until depleted. [40 C.F.R. § 60.4207(b) and A-452-77-10-A (7/9/2018), BACT]

(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 Requirement

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

The engines 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) and A-452-77-10-A (7/9/2018), BACT]

(6) Initial Notification Requirement

No initial notification is required 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 the non-resettable hour meter. Documentation shall include the number of hours each unit operated for emergency purposes, the number of hours each unit operated for non-emergency purposes, and the reason each engine was in operation during each time. [40 C.F.R. § 60.4214(b)]

3. National Emissions Standards for Hazardous Air Pollutants (NESHAP)

*National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*, 40 C.F.R. Part 63, Subpart ZZZZ is applicable to Emergency Generators G29 through G34. The units are considered existing, emergency stationary reciprocating internal combustion engines at an area HAP source. However, the units are also subject to New Source Performance Standards. By meeting the requirements of *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*, 40 C.F.R. Part 60, Subpart IIII, the units also meet the requirements found in 40 C.F.R. Part 63, Subpart ZZZZ.



4. Control Equipment

There is no control equipment required for Emergency Generators G29 through G34.

5. Periodic Monitoring

The fuel used in Emergency Generators G29 through G34 shall be included in the facility's distillate fuel limit of 4,900,000 gallons/year based on a 12-month rolling total. Compliance shall be demonstrated by records of total distillate fuel use kept on a monthly and 12-month rolling total basis.

E. Facility Annual Emissions

The facility's licensed annual emissions totals are not changing as a result of this license amendment and shall remain as currently licensed.

### III. AMBIENT AIR QUALITY ANALYSIS

PNS previously submitted an ambient air quality analysis demonstrating that emissions from the facility, in conjunction with all other sources, do not violate ambient air quality standards (see license A-452-70-A-I, issued on March 1, 2000). An additional ambient air quality analysis is not required for this Part 70 License Amendment.

### ORDER

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

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

The Department hereby grants the Part 70 License Amendment A-452-70-G-A pursuant to 06-096 C.M.R. 140 and the preconstruction permitting requirements of *Major and Minor Source Air Emission License Regulations*, 06-096 C.M.R. ch. 115 and subject to the conditions found in Air Emission License A-452-70-D-R/A, in amendments A-452-70-E-A, A-452-70-F-A, and A-452-70-H-A, and the following conditions.

Federally enforceable conditions in this Part 70 license must be changed pursuant to the applicable requirements in 06-096 C.M.R. ch. 115 for making such changes and pursuant to the applicable requirements in 06-096 C.M.R. ch. 140.

For each specific condition which is state enforceable only, state-only enforceability is designated with the following statement: **Enforceable by State-only.**

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**

**The following shall replace Condition (29) of Air Emission License A-452-70-D-R/A (July 23, 2015):**

**(29) Annual Emission Statement**

- A. In accordance with *Emission Statements*, 06-096 C.M.R. ch. 137, PNS shall annually report to the Department, in a format prescribed by the Department, the information necessary to accurately update the State's emission inventory. The emission statement shall be submitted as specified by the date in 06-096 C.M.R. ch. 137.
- B. PNS shall keep the following records in order to comply with 06-096 C.M.R. ch. 137:
1. The amount of distillate fuel and/or natural gas fired in each emission unit on a monthly basis (based on either fuel flow meters or purchase receipts and hours of operation);
  2. The sulfur content of the distillate fuel fired in each emission unit;
  3. The throughput of each piece of process equipment on a monthly basis;
  4. Calculations of the VOC and/or HAP emissions from the Gasoline Storage Tanks, Painting and Coating Operations, Parts Washers, and any other VOC/HAP emitting processes on a calendar year total basis; and
  5. Hours of operation for each process unit on a calendar year total basis.  
[06-096 C.M.R. ch. 137]
- C. In reporting year 2020 and every third year thereafter, PNS shall report to the Department emissions of hazardous air pollutants as required by 06-096 C.M.R. ch. 137, § (3)(C). PNS shall pay the annual air quality surcharge, calculated by the Department based on these reported emissions of hazardous air pollutants, by the date required in Title 38 M.R.S. § 353-A(3). [38 M.R.S. § 353-A(1-A)]

The following is a new Condition to Air Emission License A-452-70-D-R/A (July 23, 2015):

(38) **Emergency Generators G29-G34**

A. Emergency Generators G29 through G34 shall each be limited to 100 hours of operation per calendar year, excluding operating hours during emergency situations. [A-452-77-10-A (7/9/2018), BPT]

B. Emissions shall not exceed the following:

<u>Units</u>	<u>Pollutant</u>	<u>lb/MMBtu</u>	<u>Origin and Authority</u>
Emergency Generators G29-G34 [each]	PM	0.12	06-096 C.M.R. ch. 103, § 2.B.(1)(a)

C. Emissions shall not exceed the following limits [A-452-77-10-A (7/9/2018), BACT]:

<u>Units</u>	<u>PM (lb/hr)</u>	<u>PM<sub>10</sub> (lb/hr)</u>	<u>SO<sub>2</sub> (lb/hr)</u>	<u>NO<sub>x</sub> (lb/hr)</u>	<u>CO (lb/hr)</u>	<u>VOC (lb/hr)</u>
Emergency Generators G29-G31 [each]	1.20	1.20	0.02	32.00	8.50	0.90
Emergency Generators G32-G34 [each]	0.37	0.37	0.01	13.67	2.95	1.09

D. Visible emissions from each emergency generator shall not exceed 20% opacity on a six-minute block average basis, except for no more than one six-minute block average in a one-hour period to accommodate periods of startup and load changes. During such periods, the facility shall comply with the following work practice standards:

1. The unit operator shall maintain a log (written or electronic) of the date, time, and duration of all unit startups;
2. The units shall be operated in accordance with the manufacturer's emission-related operating instructions;
3. The unit operator shall 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 engines, not to exceed 30 minutes, after which time the non-startup emission limitations apply; and
4. The units, including any associated air pollution control equipment, shall be operated at all times in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Department that may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the units.

[A-452-77-10-A (7/9/2018), BACT]

- E. Emergency Generators G29 through G34 shall meet the applicable requirements of 40 C.F.R. Part 60, Subpart IIII, including the following:
1. **Manufacturer Certification**  
The engines shall be certified by the manufacturer as meeting the emission standards for new nonroad compression ignition engines found in § 60.4202. [40 C.F.R. § 60.4205(b)]
  2. **Ultra-Low Sulfur Distillate Fuel**  
The distillate fuel fired in the engines shall not exceed 15 ppm sulfur (0.0015% sulfur by weight), except that any existing distillate fuel purchased (or otherwise obtained) prior to October 1, 2010, may be used until depleted. Compliance with the fuel sulfur content limit shall be based on fuel records from the supplier documenting the type of fuel delivered and the sulfur content of the fuel. [40 C.F.R. § 60.4207(b) and A-452-77-10-A (7/9/2018), 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**
    - a. The engines 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 A-452-77-10-A (7/9/2018), BACT]
    - b. PNS shall keep records that include maintenance conducted on the engines and the hours of operation of each engine recorded through the non-resettable hour meter. Documentation shall include the number of hours each unit operated for emergency purposes, the number of hours each unit operated for non-emergency purposes, and the reason each engine was in operation during each time. [40 C.F.R. § 60.4214(b)]

5. Operation and Maintenance

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

DONE AND DATED IN AUGUSTA, MAINE THIS 24 DAY OF September, 2018.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: Mark Allen Robert Carr for  
PAUL MERCER, COMMISSIONER

**The term of this amendment shall be concurrent with the term of Air Emission License A-452-70-D-R/A.**

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: April 23, 2018

Date of application acceptance: May 3, 2018

Date filed with the Board of Environmental Protection:

This Order prepared by Jonathan E. Rice, Bureau of Air Quality.

