



DEPARTMENT ORDER

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

**Departmental  
Findings of Fact and Order  
Part 70 Air Emission License  
Amendment #5**

**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>	Part 70 Minor License Modification
<b>NAICS CODES</b>	336611 (Ship Building and Repairing)
<b>NATURE OF BUSINESS</b>	National Security (Submarine repair for U.S. Navy)
<b>FACILITY LOCATION</b>	Kittery, Maine

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, and amendments A-452-70-E-A (November 3, 2017), A-452-70-F-A (May 24, 2018), A-452-70-H-A (July 17, 2018), and A-452-70-G-A (September 24, 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-452-77-11-A, issued June 28, 2019. This NSR license was issued for the addition of one 125 kW emergency generator and one 1,000 kW emergency generator, identified as Emergency Generators G35 and G36, respectively.

## 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 G35	1.2	10.0	125	Distillate fuel, 0.0015%	2018	2019
Emergency Generator G36	9.9	72.2	1,000		2013	2019

## C. Definitions

Distillate Fuel means the following:

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

## D. Application Classification

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

A Part 70 Minor License Modification is for a license change that meets the following criteria:

- Does not violate any Applicable requirement;
- Does not involve a significant change to existing monitoring, reporting, or recordkeeping requirements in the license;
- Does not require or change a case-by-case determination of an emission limitation or other standard, or a source-specific determination for temporary sources of ambient impact or a visibility or increment analysis;
- Does not seek to establish or change a Part 70 license term or condition for which there is no corresponding underlying Applicable requirement, and that the source has assumed to avoid an Applicable requirement to which the source would otherwise be subject. Such terms and conditions include a federally enforceable emissions cap assumed to avoid classification as a Title I modification or a modification or

- reconstruction under any provision of Section 111, or 112 of the Clean Air Act (CAA); and an alternative emissions limit approved pursuant to regulations promulgated under section 112(i)(5) of the CAA;
- Is not a Title I modification or a modification or reconstruction under any provision of Section 111 or 112 of the CAA; and
  - Is not required by the Department to be processed under Part 70 Significant License Modification procedures.

PNS has requested incorporation into the Part 70 Air License the relevant terms and conditions of New Source Review (NSR) License A-452-77-11-A issued to the Shipyard pursuant to *Major and Minor Source Air Emission License Regulations*, 06-096 C.M.R. ch. 115, on June 28, 2019.

The incorporation of a minor modification NSR license into a Part 70 license is not considered a Part 70 Significant License Modification provided the minor modification NSR license involved only new equipment or the addition of new requirements (i.e., does not modify previously existing requirements). This request is not a Part 70 Significant License Modification.

A minor modification NSR license is not a Title I modification. The facility is not proposing substantial changes to existing monitoring and testing requirements, nor is it proposing the relaxation of existing license conditions.

Therefore, the facility's request to incorporate NSR requirements is classified as a Part 70 Minor License Modification and has been processed under *Part 70 Air Emission License Regulations*, 06-096 Code of Maine Rules (C.M.R.) ch. 140.

## II. AMENDMENT DESCRIPTION

### A. NSR License Description

The Department issued NSR License A-452-77-11-A to PNS on June 28, 2019. The license was issued to install two new pieces of equipment at the facility: a 125 kW emergency generator and a 1,000 kW emergency generator identified as Emergency Generators G35 and G36, respectively, to provide backup power at the Shipyard. 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 Emergency Generators G35 and G36 was documented in NSR License A-452-77-11-A (6/28/2019). The BACT requirements are included in this license.

### C. Emergency Generators G35 and G36

PNS intends to operate Emergency Generators G35 and G36 to provide emergency backup power to support facilities at the Shipyard. Emergency Generator G35 is a generator set consisting of a Caterpillar Model C7.1 engine and an electrical generator. Emergency Generator G36 is a generator set consisting of a Cummins Model QST30-G5 engine and an electrical generator. Emergency Generators G35 and G36 have engines rated at 1.2 MMBtu/hr (125 kW output) and 9.9 MMBtu/hr (1,000 kW output), respectively, which both fire distillate fuel. Emergency Generators G35 and G36 were manufactured in 2018 and 2013, respectively. Emergency Generator G35 will be installed at the facility in 2019. Due to an equipment malfunction, Emergency Generator G36 replaced a 1,500-kW unit originally designated as a temporary emission unit under *Major and Minor Source Air Emission License Regulations*, 06-096 C.M.R. ch. 115 and was installed at the facility in May 2019.

#### 1. BACT and Emission Standards

The BACT analysis documented in NSR License A-452-77-11-A (6/28/2019) identified the following emission factors as the basis for BACT emission limits for Emergency Generator G35:

PM/PM <sub>10</sub>	- 0.12 lb/MMBtu from 06-096 C.M.R. ch. 115, BACT
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 analysis documented in NSR License A-452-77-11-A (6/28/2019) identified the following emission factors as the basis for BACT emission limits for Emergency Generator G36:

- PM/PM<sub>10</sub> - 0.12 lb/MMBtu from 06-096 C.M.R. ch. 115, BACT
- 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 emission limits for Emergency Generators G35 and G36 are the following:

<u>Unit</u>	<u>Pollutant</u>	<u>lb/MMBtu</u>
Emergency Generator G36	PM	0.12

<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 Generator G35	0.14	0.14	0.01	5.29	1.14	0.42
Emergency Generator G36	1.19	1.19	0.02	31.68	8.42	0.89

Visible emissions from Emergency Generators G35 and G36 shall each not exceed 20% opacity on a six-minute block average basis, except during periods of startup when the facility may elect to comply with the following work practice standards in lieu of this visible emission standard:

- 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 each 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 unit.

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

2. New Source Performance Standards (NSPS)

*Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*, 40 C.F.R. Part 60, Subpart III is applicable to Emergency Generators G35 and G36 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 III, 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. [40 C.F.R. § 63.6590(c)(1)]

a. Emergency Engine Designation and Operating Criteria

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

(1) Emergency Situation Operation (On-Site)

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

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

(2) Non-Emergency Situation Operation

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

- (i) An emergency engine may be operated for a maximum of 100 hours per calendar year for maintenance checks and readiness testing, provided that the tests are recommended by federal, state, or local government; the manufacturer; the vendor; the regional transmission organization or equivalent balancing authority and transmission operator; or the insurance company associated with the engine. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that federal, state, or local standards require maintenance and testing of emergency ICE more than 100 hours per calendar year.
- (ii) An emergency engine may be operated for up to 50 hours per calendar year for other non-emergency situations. **However, these operating hours are counted as part of the 100 hours per calendar year operating limit described in paragraph (2) and (2) (i) above.**

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

[40 C.F.R. § 60.4211(f) and § 60.4219]

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

(1) Manufacturer Certification Requirement

The 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). [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 Requirement

The engines shall each 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

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)]

(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 each engine and the hours of operation of each engine recorded through the non-resettable hour meters. 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 G35 and G36. The units are considered new, 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. [40 C.F.R. § 63.6590(c)(1)]

4. Control Equipment

There is no control equipment required for Emergency Generators G35 and G36.

5. Periodic Monitoring

The fuel used in Emergency Generators G35 and G36 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.

**D. 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-I-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, A-452-70-H-A, and A-452-70-G-A, and the following condition.

Federally enforceable conditions in this Part 70 license amendment 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 Amendment or part thereof shall not affect the remainder of the provision or any other provisions. This License Amendment shall be construed and enforced in all respects as if such invalid or unenforceable provision or part thereof had been omitted.

### SPECIFIC CONDITIONS

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

(39) **Emergency Generators G35 and G36**

A. Emergency Generators G35 and G36 shall each be limited to 100 hours of operation per calendar year, excluding operating hours during emergency situations. [A-452-77-11-A (6/28/2019), BPT]

B. Emissions shall not exceed the following:

<u>Unit</u>	<u>Pollutant</u>	<u>lb/MMBtu</u>	<u>Origin and Authority</u>
Emergency Generator G36	PM	0.12	A-452-77-11-A (6/28/2019), BACT

C. Emissions shall not exceed the following limits [A-452-77-11-A (6/28/2019), BACT]:

<u>Unit</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 Generator G35	0.14	0.14	0.01	5.29	1.14	0.42
Emergency Generator G36	1.19	1.19	0.02	31.68	8.42	0.89

D. Visible Emissions

Visible emissions from Emergency Generators G35 and G36 shall each not exceed 20% opacity on a six-minute block average basis except for periods of startup during which time PNS may elect to comply with the following work practice standards in lieu of this visible emission standard [A-452-77-11-A (6/28/2019), BACT]:

1. PNS shall maintain a log (written or electronic) of the date, time, and duration of all generator startups.
2. The generators shall each be operated in accordance with the manufacturer's emission-related operating instructions.
3. PNS shall minimize each generator's time spent at idle during startup and minimize each generator's startup time to a period needed for appropriate and safe loading of each generator, not to exceed 30 minutes, after which time the non-startup emission limitations shall apply.
4. The generators, 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 unit.

E. Emergency Generators G35 and G36 shall each meet the applicable requirements of 40 C.F.R. Part 60, Subpart IIII, including the following:

1. Manufacturer Certification

The engines shall each 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 Distillate Fuel

The distillate fuel fired in the engines shall not exceed 15 ppm sulfur (0.0015% sulfur by weight). 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-452-77-11-A (6/28/2019), BPT]

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-452-77-11-A (6/28/2019), BPT]
- b. PNS shall keep records that include maintenance conducted on each engine and the hours of operation of each engine recorded through the non-resettable hour meters. 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 each 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)]

DONE AND DATED IN AUGUSTA, MAINE THIS 16th DAY OF August, 2019.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: 

GERALD D. REID, 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: May 1, 2019

Date of application acceptance: May 2, 2019

Date filed with the Board of Environmental Protection:

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

