



DEPARTMENT ORDER

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

**Departmental  
Findings of Fact and Order  
Part 70 Air Emission License  
Amendment #2**

**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 the Part 70 License A-452-70-D-R/A, issued July 23, 2015, Part 70 Significant License Modification A-452-70-E-A, issued November 3, 2017, and licenses to construct issued under the New Source Review 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 New Source Review (NSR) License A-452-77-9-A, issued December 27, 2017. This NSR license was issued for the addition of one 60 kW emergency generator, identified as Emergency Generator G28, and one 1.1 MW emergency turbine generator, identified as MUSE-TG1.

**B. Emission Equipment**

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

**Generator/Turbine**

<u>Equipment</u>	<u>Max. Heat Input Capacity (MMBtu/hr)</u>	<u>Max. Firing Rate (gal/hr)</u>	<u>Output</u>	<u>Fuel Type, % sulfur</u>	<u>Mfr. Date</u>	<u>Install. Date</u>
MUSE-TG1	13.5	103	1.1 MW	Distillate fuel, 0.0015%	2017	2017
Emergency Generator G28	0.64	4.6	60 kW		2015	2017

**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.

Emergency Combustion Turbine. For the purposes of this license and in accordance with 40 C.F.R. Part 60, Subpart KKKK, *emergency combustion turbine* means any stationary combustion turbine which operates in an emergency situation. Examples include stationary combustion turbines used to produce power for critical networks or equipment, including power supplied to portions of a facility, when electric power from the local utility is interrupted, or stationary combustion turbines used to pump water in the case of fire or flood, etc. Emergency stationary combustion turbines do not include stationary combustion turbines used as peaking units at electric utilities or stationary combustion turbines at industrial facilities that typically operate at low capacity factors. Emergency combustion turbines may be operated for the purpose of maintenance checks and readiness testing, provided that the tests are required by the manufacturer, the vendor, or the insurance company associated with the turbine. Required testing of such units should be minimized, but there is no time limit on the use of such units in emergency situations.

Stationary Combustion Turbine. For the purposes of this license and in accordance with 40 C.F.R. Part 60, Subpart KKKK, *Stationary combustion turbine* means all equipment, including but not limited to the turbine, the fuel, air, lubrication, and exhaust gas systems, control systems (except emissions control equipment), heat recovery system, and any ancillary components and sub-components comprising any simple cycle stationary combustion turbine, any regenerative/recuperative cycle stationary combustion turbine, any combined cycle combustion turbine, and any combined heat and power combustion

turbine based system. Stationary means that the combustion turbine is not self-propelled or intended to be propelled while performing its function. It may, however, be mounted on a vehicle for portability.

#### 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 #9 is not considered a Part 70 minor 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-452-77-9-A

The Department issued NSR License A-452-77-9-A to PNS on December 27, 2017. The license was issued to install two new pieces of equipment at the facility: one new 60 kW emergency generator, Emergency Generator G28, and one new 1.1 MW emergency turbine generator, MUSE-TG1, both 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. Best Practical Treatment (BPT)

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.

BACT for these new units was documented in NSR License A-452-77-9-A (December 27, 2017). The BACT requirements are included in this license.

### C. Emergency Generator G28

PNS operates Emergency Generator G28 to provide emergency backup power to support facilities at the Shipyard. Emergency Generator G28 is a genset consisting of a John Deere Model 4045TF280 engine and a Blue Star Power Systems Inc. electrical generator. Emergency Generator G28 is rated for an output of 60 kW (0.64 MMBtu/hr input) and fires distillate fuel. Emergency Generator G28 was manufactured in 2015 and installed at the facility in late 2017.

#### 1. BACT and Emission Standards

The BACT analysis documented in NSR license A-452-77-9-A (December 27, 2017) identified the following emission factors as the basis for the BACT emission limits for Emergency Generator G28:

- PM/PM<sub>10</sub> - 0.12 lb/MMBtu based on A-452-77-9-A (12/27/2017), 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 based on AP-42, Table 3.3-1, dated 10/96
- CO - 0.95 lb/MMBtu based on AP-42, Table 3.3-1, dated 10/96
- VOC - 0.35 lb/MMBtu based on AP-42, Table 3.3-1, dated 10/96
- Opacity - A-452-77-9-A (12/27/2017), BACT

The BACT emission limits for Emergency Generator G28 are the following:

<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 G28	0.08	0.08	0.01	2.82	0.61	0.22

Visible emissions from Emergency Generator G28 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 unit shall be operated in accordance with the manufacturer's emission-related operating instructions;
- c. The unit operator shall minimize the engine's time spent at idle and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations apply; and

- d. The unit, 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. *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 Generator G28 since the unit was 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 unit also meets the requirements found in *National Emission Standards for Hazardous Air Pollutants (NESHAP) for Stationary Reciprocating Internal Combustion Engines*, 40 C.F.R. Part 63, Subpart ZZZZ. [40 C.F.R. § 63.6590(c)]

- 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 C.F.R. §§ 60.4211(f) and 60.4219]

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

(1) Manufacturer Certification Requirement

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

(2) Ultra-Low Sulfur Fuel Requirement

The distillate fuel fired in the engine 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)]

(3) Non-Resettable Hour Meter Requirement

A non-resettable hour meter shall be installed and operated on the engine. [40 C.F.R. § 60.4209(a)]

(4) Operation and Maintenance Requirement

The engine 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)]

(5) Annual Time Limit for Maintenance and Testing

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

(6) Initial Notification Requirement

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

(7) Recordkeeping

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

3. NESHAP for Stationary Reciprocating Internal Combustion Engines, 40 C.F.R. Part 63, Subpart ZZZZ

*NESHAP for Stationary Reciprocating Internal Combustion Engines*, 40 C.F.R. Part 63, Subpart ZZZZ is applicable to Emergency Generator G28. Emergency Generator G28 is considered a new, emergency stationary reciprocating internal combustion engine at an area HAP source. However, the unit is also subject to New Source Performance Standards. By meeting the requirements of 40 C.F.R. Part 60, Subpart III, the unit also meets the requirements found in 40 C.F.R. Part 63, Subpart ZZZZ.

4. Control Equipment

There is no control equipment required for Emergency Generator G28.

5. Periodic Monitoring

The fuel used in Emergency Generator G28 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. MUSE-TG1 (Emergency Turbine Generator)

PNS operates MUSE-TG1, an emergency turbine generator, to provide backup power to support facilities at the Shipyard. Emergency turbine generator MUSE-TG1 was manufactured by Turbine Marine Inc. and fires distillate fuel with a maximum sulfur content of 0.0015% by weight (15 ppm) at a maximum rate of 103 gallons/hour. MUSE-TG1 has a maximum power output of 1.1 MW, was manufactured in 2017, and was installed at the facility in late 2017.

1. BACT and Emission Standards

The BACT analysis documented in NSR license A-452-77-9-A (December 27, 2017) identified the following emission factors as the basis for the BACT emission limits for MUSE-TG1:

- PM/PM<sub>10</sub> - 0.08 lb/MMBtu based on A-452-77-9-A (12/27/2017), 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> - 0.88 lb/MMBtu based on AP-42, Table 3.1-1, dated 4/00
- CO - 0.0033 lb/MMBtu based on AP-42, Table 3.1-1, dated 4/00
- VOC - 0.00041 lb/MMBtu based on AP-42, Table 3.1-2a, dated 4/00
- Opacity - A-452-77-9-A (12/27/2017), BACT

The BACT emission limits for MUSE-TG1 are the following:

Unit	Pollutant	lb/MMBtu
MUSE-TG1	PM	0.08

Unit	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)
MUSE-TG1	1.08	1.08	0.02	11.88	0.04	0.01



Visible emissions from MUSE-TG1 shall not exceed 20% opacity on a six-minute block average basis, except for no more than one six-minute 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 unit shall be operated in accordance with the manufacturer's emission-related operating instructions;
- c. The unit operator shall minimize the engine's time spent at idle and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations apply; and
- d. The unit, 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.

Although not included in the definition of *emergency combustion turbine* established in 40 C.F.R. Part 60, Subpart KKKK, the Department has determined that BACT for MUSE-TG1 shall be a conservative non-emergency operating hours restriction of 200 hours/year on a calendar year total basis for the purpose of maintenance checks and readiness testing. Compliance with this limit shall be demonstrated by records of the total hours of operation of the unit that shall include the amount of time the unit operated, the date of operation, and the reason for operating. [A-452-77-9-A (12/27/2017), BACT]

Additionally, the sulfur content of the distillate fuel fired in MUSE-TG1 shall not exceed 0.0015% sulfur by weight (15 ppm). Compliance shall be demonstrated by fuel records from the supplier showing the type and percent sulfur of the fuel delivered. [A-452-77-9-A (12/27/2017), BACT]

2. *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*, 40 C.F.R. Part 60, Subpart III

Emergency turbine generator MUSE-TG1 is not subject to *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*, 40 C.F.R. Part 60, Subpart III. MUSE-TG1 is not a stationary internal combustion engine as defined in 40 C.F.R. Part 60, Subpart III.

3. *Standards of Performance for Stationary Combustion Turbines*, 40 C.F.R. Part 60, Subpart KKKK

Emergency turbine generator MUSE-TG1 is subject to *Standards of Performance for Stationary Combustion Turbines*, 40 C.F.R. Part 60, Subpart KKKK. The unit is considered a stationary emergency combustion turbine with a heat input at peak load greater than 10 MMBtu/hr which commenced construction after February 18, 2005. [40 C.F.R. §§ 60.4305(a) and 60.4420]

The requirements of 40 C.F.R. Part 60, Subpart KKKK applicable to emergency turbine generator MUSE-TG1 are included below:

a. Work Practice Standards

- (1) In order for MUSE-TG1 to be considered an emergency combustion turbine and therefore exempt from the NO<sub>x</sub> emission limits in this subpart, PNS shall operate the unit according to the definition of *emergency combustion turbine* in 40 C.F.R. § 60.4420. [40 C.F.R. §§ 60.4420 and 60.4310(a)]
- (2) PNS shall operate and maintain MUSE-TG1 and any associated air pollution control and monitoring equipment in a manner consistent with good air pollution control practices for minimizing emissions at all times including during startup, shutdown, and malfunction. [40 C.F.R. § 60.4333(a)]

b. Emission Limits

- (1) PNS shall not burn any fuel in MUSE-TG1 which contains total potential sulfur emissions in excess of 0.06 lb SO<sub>2</sub>/MMBtu of heat input. This requirement has been streamlined to the BACT fuel sulfur content limit of 15 ppm (0.0015% sulfur by weight, approximately 0.0015 lb SO<sub>2</sub>/MMBtu). [40 C.F.R. § 60.4330(a) and A-452-77-9-A (12/27/2017), BACT]
- (2) In order to demonstrate compliance with the sulfur limit included in 40 C.F.R. § 60.4330(a), PNS shall demonstrate that the fuel fired in MUSE-TG1 does not exceed potential sulfur emissions of 0.06 lb SO<sub>2</sub>/MMBtu heat input using fuel quality characteristics in a current, valid purchase contract, tariff sheet, or transportation contract for the fuel, which specifies that the maximum total sulfur content for the fuel is 0.0015 weight percent (15 ppmw) or less. [40 C.F.R. §§ 60.4360 and 60.4365(a)]

c. Notifications and Reports

PNS shall submit an initial report to EPA and the Department stating the facility's case, which shall be a justification explaining how the unit meets the definition of *emergency combustion turbine* as defined in 40 C.F.R. § 60.4420. This report must be postmarked by the 30<sup>th</sup> day following startup of the unit. [40 C.F.R. § 60.4390(a) and A-452-77-9-A (12/27/2017), BACT]

4. Control Equipment

There is no control equipment required for MUSE-TG1.

5. Periodic Monitoring

The fuel used in MUSE-TG1 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.

The sulfur content of the distillate fuel fired in MUSE-TG1 shall not exceed 0.0015% sulfur by weight (15 ppm). Compliance shall be demonstrated by fuel records from the supplier showing the type and percent sulfur of the fuel delivered.

Additionally, PNS shall maintain records of the total hours of operation for the unit. These records shall include the amount of time the unit operated, the date of operation, and the reason for operating. These records shall be used to demonstrate compliance with the 200 hours/year non-emergency operating hours limit and to demonstrate that the unit operated according to the definition of *emergency combustion turbine* as defined in 40 C.F.R. Part 60, Subpart KKKK.

**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-F-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 amendment A-452-70-E-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 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 are new Conditions to Air Emission License A-452-70-D-R/A (July 23, 2015):**

**(36) Emergency Generator G28**

- A. Emergency Generator G28 shall be limited to 100 hours of operation per calendar year, excluding operating hours during emergency situations. [A-452-77-9-A (12/27/2017), BPT]
- B. Emissions shall not exceed the following limits [A-452-77-9-A (12/27/2017), BACT]:

<b>Unit</b>	<b>PM (lb/hr)</b>	<b>PM<sub>10</sub> (lb/hr)</b>	<b>SO<sub>2</sub> (lb/hr)</b>	<b>NO<sub>x</sub> (lb/hr)</b>	<b>CO (lb/hr)</b>	<b>VOC (lb/hr)</b>
Emergency Generator G28	0.08	0.08	0.01	2.82	0.61	0.22

- C. Visible emissions from Emergency Generator G28 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 unit shall be operated in accordance with the manufacturer's emission-related operating instructions;
  3. The unit operator shall minimize the engine's time spent at idle and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations apply; and
  4. The unit, 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.

[A-452-77-9-A (12/27/2017), BACT]

- D. Emergency Generator G28 shall meet the applicable requirements of 40 C.F.R. Part 60, Subpart IIII, including the following:
1. **Manufacturer Certification**  
The engine shall be certified by the manufacturer as meeting the emission standards for new nonroad compression ignition engines found in 40 C.F.R. § 60.4202. [40 C.F.R. § 60.4205(b)]
  2. **Ultra-Low Sulfur Distillate Fuel**  
The distillate fuel fired in the engine 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-452-77-9-A (12/27/2017), BACT]
  3. **Non-Resettable Hour Meter**  
A non-resettable hour meter shall be installed and operated on the engine. [40 C.F.R. § 60.4209(a)]

4. Annual Time Limit for Maintenance and Testing

- a. The engine shall be limited to 100 hours/year for maintenance checks and readiness testing. Up to 50 hours/year of the 100 hours/year may be used in non-emergency situations (this does not include peak shaving, demand response, or to generate income for a facility by providing power to an electric grid or otherwise supply power as part of a financial arrangement with another entity). These limits are based on a calendar year. Compliance shall be demonstrated by records (electronic or written log) of all engine operating hours. [40 C.F.R. § 60.4211(f) and A-452-77-9-A (12/27/2017), BACT]
- b. PNS shall keep records that include maintenance conducted on the engine and the hours of operation of the engine recorded through the non-resettable hour meter. Documentation shall include the number of hours the unit operated for emergency purposes, the number of hours the unit operated for non-emergency purposes, and the reason the engine was in operation during each time. [40 C.F.R. § 60.4214(b)]

5. Operation and Maintenance

The engine shall be operated and maintained according to the manufacturer's emission-related written instructions 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)]

(37) MUSE-TG1 (Emergency Turbine Generator)

A. Emission shall not exceed the following:

<u>Unit</u>	<u>Pollutant</u>	<u>lb/MMBtu</u>	<u>Origin and Authority</u>
MUSE-TG1	PM	0.08	A-452-77-9-A (12/27/2017), BACT

B. Emissions shall not exceed the following limits [A-452-77-9-A (12/27/2017), 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>
MUSE-TG1	1.08	1.08	0.02	11.88	0.04	0.01

- C. Visible emissions from MUSE-TG1 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 unit shall be operated in accordance with the manufacturer's emission-related operating instructions;
  3. The unit operator shall minimize the engine's time spent at idle and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations apply; and
  4. The unit, 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.

[A-452-77-9-A (12/27/2017), BACT]

- D. The distillate fuel fired in MUSE-TG1 shall not exceed a maximum sulfur content of 0.0015% by weight (15 ppm). Sulfur content compliance shall be demonstrated by fuel delivery receipts from the supplier indicating the type and percent sulfur of the fuel delivered. [A-452-77-9-A (12/27/2017), BACT]

E. Operating Hours Restriction

**Enforceable by State-only**

1. MUSE-TG1 shall be limited to 200 hours/year on a calendar year total basis of non-emergency operation for the purposes of maintenance checks and readiness testing. [A-452-77-9-A (12/27/2017), BPT]
2. In order to document compliance with the above limit and to demonstrate the unit is being operated according to the definition of *emergency combustion turbine* as established in 40 C.F.R. Part 60, Subpart KKKK, PNS shall maintain records of the total hours of operation for the unit. These records shall include the amount of time the unit operated, the date of operation, and the reason for operating. [A-452-77-9-A (12/27/2017), BPT]

F. MUSE-TG1 shall meet the applicable requirements of 40 C.F.R. Part 60, Subpart KKKK, including the following:

1. Work Practice Standards

- a. In order for MUSE-TG1 to be considered an emergency combustion turbine and exempt from the NO<sub>x</sub> emission limits in this subpart, PNS shall operate the unit according to the definition of *emergency combustion turbine* in 40 C.F.R. § 60.4420. [40 C.F.R. §§ 60.4420 and 60.4310(a)]
- b. PNS shall operate and maintain MUSE-TG1 and any associated air pollution control and monitoring equipment in a manner consistent with good air pollution control practices for minimizing emissions at all times including during startup, shutdown, and malfunction. [40 C.F.R. § 60.4333(a)]

2. Emission Limits

- a. PNS shall not burn any fuel in MUSE-TG1 which contains total potential sulfur emissions in excess of 0.06 lb SO<sub>2</sub>/MMBtu of heat input. This requirement has been streamlined to the BACT fuel sulfur content limit of 15 ppm (0.0015% sulfur by weight, approximately 0.0015 lb SO<sub>2</sub>/MMBtu). [40 C.F.R. § 60.4330(a) and A-452-77-9-A (12/27/2017), BACT]
- b. In order to demonstrate compliance with the sulfur limit included in 40 C.F.R. § 60.4330(a), PNS shall demonstrate that the fuel fired in MUSE-TG1 does not exceed potential sulfur emissions of 0.06 lb SO<sub>2</sub>/MMBtu heat input using fuel quality characteristics in a current, valid purchase contract, tariff sheet, or transportation contract for the fuel, which specifies that the maximum total sulfur content for the fuel is 0.0015 weight percent (15 ppmw) or less. [40 C.F.R. §§ 60.4360 and 60.4365(a)]



3. Notifications and Reports

PNS shall submit an initial report to EPA and the Department stating the facility's case, which shall be a justification explaining how the unit meets the definition of *emergency combustion turbine* as defined in 40 C.F.R. § 60.4420. This report must be postmarked by the 30<sup>th</sup> day following startup of the unit. [40 C.F.R. § 60.4390(a) and A-452-77-9-A (12/27/2017), BACT]

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

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: Max Allen Robert Cone 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: 10/4/2017

Date of application acceptance: 10/5/2017

Date filed with the Board of Environmental Protection:

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

