STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

JOHN ELIAS BALDACCI
GOVERNOR

BETH NAGUSKY
ACTING COMMISSIONER

PORTSMOUTH NAVAL SHIPYARD	)	**DEPARTMENTAL**
YORK COUNTY	)	**FINDINGS OF FACT AND ORDER**
KITTERY, MAINE	)	**NEW SOURCE REVIEW LICENSE**
A-452-77-3-A	1	**AMENDMENT**

After review of the air emission license minor revision application, staff investigation reports and other documents in the applicant's file in the Bureau of Air Quality, pursuant to 38 M.R.S.A, Section 344, Section 590, 06-096 CMR 115, the Department finds the following facts:

I. REGISTRATION

A. Introduction

FACILITY	Portsmouth Naval Shipyard (PNS)
PART 70 LICENSE NUMBER	A-452-70-C-R
LICENSE TYPE	06-096 CMR 115 New Source Review Amendment
NAIC CODES	336611- Ship Building and Repair
NATURE OF BUSINESS	National Security (Submarine Repair for U.S. Navy)
FACILITY LOCATION	Kittery, Maine
DATE OF NSR LICENSE ISSUANCE	December 1, 2010

B. Amendment Description

PNS submitted an application for the modification of Air Emissions License, A-452-70-C-R per 06-096 CMR 115 New Source Review requirements. The modification is for the installation and operation of a 6.0 MMBtu/hr emergency generator for the new Consolidated Emergency Control Center (CECC) at the Shipyard. The new CECC located in Building 374 will consolidate emergency personnel and resources facilitating communications, response time and Command and Control Center for man-made casualties and natural disasters. The CECC will include an emergency generator for backup power (Caterpillar C18) with a 600 kW rating and is EPA Tier 2 Emissions Certified.

Emergency Generation Equipment

Equipment	Power Output (kW)	Diesel Firing Rate (gal/hr)	Maximum Capacity (MMBtu/hr)	Stack #
Emergency Generator (G09)	600	47.2	6.0	109

C. Application Classification

PNS is a major source per the Maine Department of Environmental Protection's 06-096 CMR 100 regulation. PNS has not requested to increase its current licensed allowed emissions and the installation of an emergency generator will not exceed "Significant Emissions Increase Levels" as defined in the Department's regulations. Therefore this application is considered a minor modification and is being processed under the New Source Review requirements of 06-096 CMR 115. Since the emergency generator is not currently licensed, all criteria pollutants are subject to Best Available Control Technology (BACT) requirements.

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 06-096 CMR 100 of the Department's regulations. 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 and modified units requires a demonstration that emissions are receiving Best Available Control Technology (BACT), as defined in 06-096 CMR 100 of the Department's regulations. BACT is a top-down approach to selecting air emission controls considering economic, environmental and energy impacts.

B. Emergency Generator (G09)

The Shipyard's construction of the CECC will include the new 6.0 MMBtu/hr emergency diesel generator (G09) for backup power. The generator was manufactured in 2010 and its make and model is a Caterpillar C18 ATTAAC Diesel Engine rated at 600 kW, which is EPA Certified Tier II. Generator G09 is ordered after July 11, 2005 and manufactured after April 1, 2006; therefore, it is subject to New Source Performance Standards 40 CFR Part 60, Subpart IIII, Standards of Performance for Stationary Compression Ignition Internal Combustion Engines and 40 CFR Part 63, Subpart ZZZZ, National Emission Standards for Hazardous Air Pollutants (NESHAP) for Reciprocating Internal Combustion Engines. By meeting the requirements of Subpart IIII, the facility will be in compliance with the NESHAP.

06-096 CMR 115 of the Maine DEP regulations requires that a BACT analysis be conducted for the generator, and for each pollutant emitted. This BACT analysis addresses the five criteria combustion pollutants emitted from generators: sulfur dioxide, nitrogen oxides, particulate matter, carbon monoxide, and volatile organic compounds.

BPT for PM_{10}

Particulate matter emissions from diesel engines are generally controlled through proper operation and maintenance. To meet BACT, which is more stringent than 06-096 CMR 103, PNS shall limit particulate emissions to 0.71 lb/hr.

BPT for SO_2

The generator will only be operated for providing backup power. PNS will accept a restriction on annual operating time of 500 hours per year. At this low level of operation, the only practical method for limiting sulfur dioxide emissions is through the use of ultra low sulfur fuel. PNS will minimize SO_2 emissions from the generator by using diesel fuel having a sulfur content no greater than 0.0015% by weight to comply with EPA new source performance standards, Subpart IIII.

BPT for NOx

Control technologies sometimes used to reduce NOx emissions from diesel engines include selective catalytic reduction (SCR) and fuel injection timing retard (FITR). For a generator limited by license to 500 hours per year of operation, with actual operating time being much lower, both SCR and FITR would not provide a significant environmental benefit. In fact, each technology could adversely affect the reliability of the generator in power outage situations, and could result in emissions of new pollutants (ammonia from SCR) or increased emissions of current pollutants (increased CO, PM, and opacity from FITR). PNS proposes to meet BACT for NOx by meeting an emissions limit of 12.2 lb/hr, which reflects state-of-the-art, clean-burning engine technology.

BPT for CO and VOC

CO and VOC emissions from electric generators are generally controlled through proper operation and maintenance. Oxidation catalysts have been used on large prime power applications to reduce CO and VOC emission levels in the exhaust. Like SCR technology, use of an oxidation catalyst on a generator of such limited use would not provide a significant environmental benefit, and could adversely affect the reliability of the unit. PNS proposes to meet BACT by meeting CO and VOC emission limits of 15.1 lb/hr and 1.7 lb/hr, respectively.

A summary of the BACT analysis for G09 (600 kW) is the following:

1. G09 shall fire only diesel fuel with a maximum sulfur content not to exceed 15 ppm.
2. G09 shall be limited to 100 hr/yr of operation for maintenance checks and readiness testing. G09 shall be limited to 500 hours per year of total operation. Both of these

limits are based on a 12 month rolling total. Compliance shall be demonstrated by a written log of all generator operating hours.

3. G09 shall be equipped with a non-resettable hour meter.
4. 06-096 CMR 103 regulates PM emission limits and is streamlined into the PM BACT emission limit. The PM_{10} limits are derived from the PM limits.
5. NO_x, CO, and VOC emission limits are based upon the emission limits established in 40 CFR Part 60 Subpart IIII.
6. PNS shall operate and maintain G09 in accordance with the manufacturer's written instructions. PNS shall not change settings that are not approved in writing by the manufacturer.
7. Visible emissions from the emergency generator shall not exceed 20% opacity on a six (6) minute block average, except for no more than two (2) six (6) minute block averages in a continuous 3-hour period.

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,
- will not violate applicable ambient air quality standards in conjunction with emissions from other sources.

The Department hereby grants this Minor Modification, Air Emission License A-452-77-3-A, pursuant to the preconstruction licensing requirements of 06-096 CMR 115 and subject to the standard and special conditions below.

Severability. The invalidity or unenforceability of any provision, or part thereof, of this license 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 are new conditions:

(1) **NSPS Emergency Generator (G09)**

A. G09 shall fire only diesel fuel with a maximum sulfur content not to exceed 15 ppm. [40 CFR 60.4207(b)]

B. Compliance with the sulfur content limits shall be based on fuel records from the supplier showing the type of fuel delivered and the sulfur content of the fuel. [06-096 CMR 115, BACT]

C. G09 shall be limited to 100 hr/yr of operation for maintenance checks and readiness testing. G09 shall be limited to 500 hours per year of total operation. Both of these limits are based on a 12 month rolling total. Compliance shall be demonstrated by a written log of all generator operating hours. [40 CFR 60.4211(E) and 06-096 CMR 115, BACT]

D. G09 shall be equipped with a non-resettable hour meter. [40 CFR 60.4209(a)]

E. Emissions shall not exceed the following:

Emission Unit	Pollutant	lb/MMBtu	Origin and Authority
G09	PM	0.12	06-096 CMR 103(2)(B)(1)(a)

F. Emissions shall not exceed the following [06-096 CMR 115, BACT]:

Emission Unit	PM (lb/hr)	PM_{10} (lb/hr)	SO_2 (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
G09	0.71	0.71	0.1	12.2	15.1	1.7

G. G09 is subject to PM, CO, and NO_x + VOC emission requirements set forth in 40 CFR 60, Subpart IIII. Compliance with these emission requirements shall be demonstrated by certification from the manufacturer that this engine class meets the appropriate Tier standards. [40 CFR 60, Subpart IIII]

H. PNS shall operate and maintain G09 in accordance with the manufacturer's written instructions. PNS shall not change settings that are not approved in writing by the manufacturer. [40 CFR 60.4211(a)]

I. Visible emissions from the emergency generator (G09) shall not exceed 20% opacity on a six (6) minute block average, except for no more than two (2) six (6) minute block averages in a continuous 3-hour period. [06-096 CMR 101]

(2) PNS shall be in compliance with 40 CFR Part 63 Subpart ZZZZ, National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines by demonstrating compliance with 40 CFR Part 60 Subpart IIII.
[40 CFR 63, Subpart ZZZZ]

(3) PNS shall notify the Department within 48 hours and submit a report to the Department on a quarterly basis if a malfunction or breakdown in any component causes a violation of any emission standard (38 M.R.S.A. §605-C).

DONE AND DATED IN AUGUSTA, MAINE THIS 1st DAY OF December, 2010.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: James P. Brooks for
BETH NAGUSKY, ACTING COMMISSIONER

The term of this license shall be five (5) years from the signature date above.

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: September 27, 2010
Date of application acceptance: October 7, 2010

Date filed with the Board of Environmental Protection:

This Order prepared by Edwin Cousins, Bureau of Air Quality

FILED
DEC - 3 2010
BOARD OF ENVIRONMENTAL PROT.
STATE OF MAINE