



Connecticut Department of  
**ENERGY &  
ENVIRONMENTAL  
PROTECTION**

**BUREAU OF AIR MANAGEMENT  
NEW SOURCE REVIEW PERMIT  
TO CONSTRUCT AND OPERATE A STATIONARY SOURCE**

Issued pursuant to Title 22a of the Connecticut General Statutes (CGS) and Section 22a-174-3a of the Regulations of Connecticut State Agencies (RCSA).

<b>Owner/Operator</b>	United States Navy, Submarine Base New London
<b>Address</b>	Public Works Department, Environmental Division, Box 400 439 Tautog Avenue, Room 104 Groton, CT 06349
<b>Equipment Location</b>	Utility Plant – Building 29 Route 12, Groton, CT 06349
<b>Equipment Description</b>	Caterpillar C27 Diesel Generator Set
<b>Town-Permit Numbers</b>	070-0285
<b>Premises Number</b>	28
<b>Stack Number</b>	37
<b>Permit Issue Date</b>	November 14, 2016
<b>Expiration Date</b>	None

/s/ Michael Sullivan  
Michael Sullivan  
Deputy Commissioner

11/14/16  
Date

This permit specifies necessary terms and conditions for the operation of this equipment to comply with state and federal air quality standards. The Permittee shall at all times comply with the terms and conditions stated herein.

## **PART I. DESIGN SPECIFICATIONS**

### **A. General Description**

The Caterpillar C27 diesel engine with a 725 kW generator is used to produce auxiliary power at the United States Navy, Submarine Base New London. This engine shall be limited to operate no more than 500 hours per year.

### **B. Equipment Design Specifications**

1. Fuel Type: Diesel
2. Maximum Fuel Firing Rate (gal/hr): 53.2
3. Maximum Gross Heat Input (MMBTU/hr): 7.29 @ 137,000 BTU/gal

### **C. Control Equipment Design Specifications**

1. Oxidation Catalyst
  - a. Make and Model: CAT Retrofit Diesel Oxidation Catalyst
  - b. Catalyst Type: Catalyzed Ceramic Substrate
  - c. Design CO Removal Efficiency (%):  $\geq 70$

### **D. Stack Parameters**

1. Minimum Stack Height (ft): 76.5
2. Minimum Exhaust Gas Flow Rate (acfm): 4,478.7
3. Minimum Stack Exit Temperature (°F): 811.6
4. Minimum Distance from Stack to Property Line (ft): 110

## **PART II. OPERATIONAL CONDITIONS**

### **A. Equipment**

1. Maximum Hours of Operation over any Consecutive 12 Month Period (hours): 500
2. Allowable Fuel Type: Distillate
3. Maximum Fuel Sulfur Content (% by weight, dry basis): 0.0015
4. The Permittee shall operate and maintain this equipment in accordance with the manufacturer's specifications and written recommendations.

### PART III. ALLOWABLE EMISSION LIMITS

The Permittee shall not cause or allow this equipment to exceed the emission limits stated herein at any time.

#### A. Short Term Emission Limits

These short term emission limits apply at all times.

##### 1. Criteria Pollutants

Pollutant	lb/hr	gm/bhp-hr
PM	0.27	
PM <sub>10</sub>	0.27	
PM <sub>2.5</sub>	0.27	
SO <sub>2</sub>	0.01	
NO <sub>x</sub>	5.57	2.37
VOC	0.41	
CO	2.35	

#### B. Annual Emission Limits

Pollutant	tons per 12 consecutive months
PM	0.07
PM <sub>10</sub>	0.07
PM <sub>2.5</sub>	0.07
SO <sub>2</sub>	0.003
NO <sub>x</sub>	1.39
VOC	0.10
CO	0.59

#### C. Hazardous Air Pollutants

This equipment shall not cause an exceedance of the Maximum Allowable Stack Concentration (MASC) for any hazardous air pollutant (HAP) emitted and listed in RCSA Section 22a-174-29. [STATE ONLY REQUIREMENT]

#### D. Opacity

Opacity resulting from operation of this engine shall not exceed 10% during any six-minute block average or 40% reduced to a one-minute block average; as measured by 40 CFR 60, Appendix A, Reference Method 9.

- E.** Demonstration of compliance with the above emission limits shall be met by calculating the emission rates using emission factors from the following sources:
- PM/PM<sub>10</sub>/PM<sub>2.5</sub>, VOC – Manufacturer’s Data
  - NO<sub>x</sub>, CO – Stack Emission Test
  - SO<sub>2</sub> – AP-42, Fifth Edition, Table 3.4-1
  - PM<sub>10</sub>/PM<sub>2.5</sub> Condensable – AP-42, Fifth Edition, Table 3.4-2

The commissioner may require other means (e.g. stack testing) to demonstrate compliance with the above emission limits, as allowed by state or federal statute, law or regulation.

## **PART IV. MONITORING, RECORD KEEPING AND REPORTING REQUIREMENTS**

### **A. Monitoring**

1. The Permittee shall continuously monitor hours of operation using a non-resettable totalizing hour meter.

### **B. Record Keeping**

1. The Permittee shall keep records of monthly and consecutive 12-month hours of operation. The consecutive 12-month hours of operation shall be determined by adding the current month’s operating hours to that of the previous 11 months. The Permittee shall make these calculations within 30 days of the end of the previous month.
2. The Permittee shall keep records of the fuel certification for each delivery of fuel oil from a bulk petroleum provider or a copy of the current contract with the fuel supplier supplying the fuel used by the equipment that includes the applicable sulfur content of the fuel as a condition of each shipment. The shipping receipt or contract shall include, as appropriate, the date of delivery, the name of the fuel supplier, type of fuel delivered, the percentage of sulfur in such fuel, by weight, dry basis, and the method used to determine the sulfur content of such fuel.
3. The Permittee shall calculate and record the monthly and consecutive 12-month PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub>, NO<sub>x</sub>, VOC, and CO emissions in units of tons. The consecutive 12-month emissions shall be determined by adding (for each pollutant) the current month’s emissions to that of the previous 11 months. Such records shall include a sample calculation for each pollutant. The Permittee shall make these calculations within 30 days of the end of the previous month.
4. The Permittee shall keep records of the occurrence and duration of any malfunction in the operation of this equipment or any periods during which a monitoring device is inoperative. [40 CFR §60.7(b)]

Such records shall contain the following information:

- a. type of event
  - b. part of equipment affected;
  - c. date of event;
  - d. duration of event (minutes);
5. The Permittee shall maintain, for the life of the equipment, all manufacturer’s specifications and written recommendations for the operation and maintenance of the equipment.

6. Unless otherwise specified by this permit, the Permittee shall keep all records required by this permit for a period of no less than five years and shall submit such records to the commissioner upon request.

### **C. Reporting**

1. The Permittee shall notify the commissioner in writing of any malfunction of the engine that has the potential to increase emissions. The Permittee shall submit such notification within ten days of the malfunction. The notification shall include the following:
  - a. a description of the malfunction and a description of the circumstances surrounding the cause or likely cause of such malfunction; and
  - b. a description of all corrective actions and preventive measures taken and/or planned with respect to such malfunction and the dates of such actions and measures.

### **PART V. STACK EMISSION TEST REQUIREMENTS**

Stack emission testing shall be performed in accordance with the [Emission Test Guidelines](#) available on the DEEP website.

Initial stack testing shall be required for the following pollutant(s):

NO<sub>x</sub>       CO

The Permittee shall conduct initial stack testing within 60 days of achieving the maximum production rate following the date of startup as a non-emergency engine, but not later than 180 days after initial startup as a non-emergency engine. The Permittee shall submit test results within 60 days after completion of testing.

Recurrent stack testing for NO<sub>x</sub> shall be conducted within 5 years from the date of the previous stack test or, if applicable, in accordance with the testing schedule set forth in RCSA Section 22a-174-22e.

Recurrent stack testing for CO shall be conducted pursuant to 40 CFR §63.6615.

Stack test results shall be reported as follows: NO<sub>x</sub> in units of lb/hr and gm/bhp-hr, CO in units of lb/hr and gm/bhp-hr.

### **PART VI. SPECIAL REQUIREMENTS**

- A. The Permittee shall comply with all applicable sections of the following New Source Performance Standard(s) at all times.

Title 40 CFR Part 60, Subparts: IIII and A

Copies of the Code of Federal Regulations (CFR) are available online at the U.S. Government Printing Office website.

- B. The Permittee shall comply with all applicable sections of the following National Emission Standards for Hazardous Air Pollutants at all times.

Title 40 CFR Part 63, Subpart: ZZZZ and A

Copies of the Code of Federal Regulations (CFR) are available online at the U.S. Government Printing Office website.

- C. In the event that a malfunction causing either an emission exceedance or a parameter monitored out of recommended range is not corrected within three hours, the Permittee shall immediately institute shutdown of the engine.
- D. The Permittee shall operate this facility at all times in a manner so as not to violate or contribute significantly to the violation of any applicable state noise control regulations, as set forth in RCSA Sections 22a-69-1 through 22a-69-7.4. [STATE ONLY REQUIREMENT]

### **PART VIII. ADDITIONAL TERMS AND CONDITIONS**

- A. This permit does not relieve the Permittee of the responsibility to conduct, maintain and operate the regulated activity in compliance with all applicable requirements of any federal, municipal or other state agency. Nothing in this permit shall relieve the Permittee of other obligations under applicable federal, state and local law.
- B. Any representative of the DEEP may enter the Permittee's site in accordance with constitutional limitations at all reasonable times without prior notice, for the purposes of inspecting, monitoring and enforcing the terms and conditions of this permit and applicable state law.
- C. This permit may be revoked, suspended, modified or transferred in accordance with applicable law.
- D. This permit is subject to and in no way derogates from any present or future property rights or other rights or powers of the State of Connecticut and conveys no property rights in real estate or material, nor any exclusive privileges, and is further subject to any and all public and private rights and to any federal, state or local laws or regulations pertinent to the facility or regulated activity affected thereby. This permit shall neither create nor affect any rights of persons or municipalities who are not parties to this permit.
- E. Any document, including any notice, which is required to be submitted to the commissioner under this permit shall be signed by a duly authorized representative of the Permittee and by the person who is responsible for actually preparing such document, each of whom shall certify in writing as follows: "I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and I certify that based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief. I understand that any false statement made in the submitted information may be punishable as a criminal offense under section 22a-175 of the Connecticut General Statutes, under section 53a-157b of the Connecticut General Statutes, and in accordance with any applicable statute."
- F. Nothing in this permit shall affect the commissioner's authority to institute any proceeding or take any other action to prevent or abate violations of law, prevent or abate pollution, recover costs and natural resource damages, and to impose penalties for violations of law, including but not limited to violations of this or any other permit issued to the Permittee by the commissioner.

- G.** Within 15 days of the date the Permittee becomes aware of a change in any information submitted to the commissioner under this permit, or that any such information was inaccurate or misleading or that any relevant information was omitted, the Permittee shall submit the correct or omitted information to the commissioner.
- H.** The date of submission to the commissioner of any document required by this permit shall be the date such document is received by the commissioner. The date of any notice by the commissioner under this permit, including but not limited to notice of approval or disapproval of any document or other action, shall be the date such notice is personally delivered or the date three days after it is mailed by the commissioner, whichever is earlier. Except as otherwise specified in this permit, the word "day" means calendar day. Any document or action which is required by this permit to be submitted or performed by a date which falls on a Saturday, Sunday or legal holiday shall be submitted or performed by the next business day thereafter.
- I.** Any document required to be submitted to the commissioner under this permit shall, unless otherwise specified in writing by the commissioner, be directed to: Office of Director; Engineering & Enforcement Division; Bureau of Air Management; Department of Energy and Environmental Protection; 79 Elm Street, 5th Floor; Hartford, Connecticut 06106-5127.