



**STATE OF CONNECTICUT  
DEPARTMENT OF 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).

Owner/Operator:	United States Naval Submarine Base New London
Address:	Environmental Division, Public Works Department, P.O. Box 400, Groton, CT 06349
Equipment Location:	Route 12, Groton CT 06349
Equipment Description:	Cleaver Brooks Model CBL-LN (4-PASS, 5 FT <sup>2</sup> ) Boiler
Collateral Conditions:	This permit contains collateral conditions affecting six emergency engines as specified in Part VII of this permit.

Town-Permit Numbers:	070-0279
Town-Premises Numbers:	070-28
Permit Issue Date:	December 14, 2010
Expiration Date:	None

/s/ Amey Marrella  
Amey Marrella  
Commissioner

12/14/10  
Date

## PERMIT FOR FUEL BURNING EQUIPMENT

### STATE OF CONNECTICUT, DEPARTMENT OF ENVIRONMENTAL PROTECTION BUREAU OF AIR MANAGEMENT

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 Cleaver Brooks Model CBL-LN (4-PASS, 5 FT<sup>2</sup>) Boiler shall be used by the United States Naval Submarine Base New London to provide steam to heat buildings throughout the base. It shall be located in the existing Power Plant Building (Building No. 29).

##### B. Equipment Design Specifications

1. Fuel Type(s): Natural Gas, Low Sulfur No. 2 Fuel Oil
2. Maximum Fuel Firing Rate(s): 48.99 mcf/hr @ 1000 BTU/cf (Natural Gas), 349.9 gal/hr @ 140,000 BTU/gal (Low Sulfur No. 2 Fuel Oil)
3. Maximum Gross Heat Input (MMBTU/hr): 48.99

##### C. Control Equipment Design Specifications

1. Low NOx Burner
  - a. Make and Model: Cleaver Brooks Ultra-Low NOx Burner
  - b. Guaranteed NOx Emission Rate (ppm): 9 (Natural Gas),  
119 (Low Sulfur Fuel Oil)

##### D. Stack Parameters

1. Minimum Stack Height (ft): 140
2. Minimum Exhaust Gas Flow Rate (acfm): 14,100 (Natural Gas),  
14,215 (No. 2 Fuel Oil)
3. Stack Exit Temperature (°F): 275
4. Minimum Distance from Stack to Thames River Boundary (ft): 130

#### PART II OPERATIONAL CONDITIONS

##### A. Equipment

1. Maximum Low Sulfur Fuel Oil Consumption over any Consecutive 12 Month Period (gallons): 251,938
2. Maximum Natural Gas Consumption over any Consecutive 12 Month Period (MMcf): 429.135 MMcf - [0.00014 × Annual Fuel Oil Consumed in gallons]
3. Maximum Fuel Sulfur Content (% by weight, dry basis): 0.05

FIRM NAME: United States Naval Submarine Base New London  
 EQUIPMENT LOCATION: Route 12, Groton, CT 06349  
 EQUIPMENT DESCRIPTION: Cleaver Brooks Model CBL-LN (4-PASS, 5 FT<sup>2</sup>) Boiler

## PERMIT FOR FUEL BURNING EQUIPMENT

### STATE OF CONNECTICUT, DEPARTMENT OF ENVIRONMENTAL PROTECTION BUREAU OF AIR MANAGEMENT

#### PART III. MONITORING, RECORD KEEPING AND REPORTING REQUIREMENTS

##### A. Monitoring

1. The Permittee shall use non-resettable totalizing fuel metering devices to continuously monitor fuel feed for each type of fuel, natural gas and fuel oil, to this permitted source.

##### B. Record Keeping

1. The Permittee shall record the monthly and consecutive 12 month fuel consumption. The consecutive 12 month fuel consumption shall be determined by adding (for each fuel) the current month's fuel consumption to that of the previous 11 months. The Permittee shall make these calculations monthly.
2. 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>, CO, and VOC 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 monthly.
3. 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 this 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.
4. The Permittee shall keep records of the inspection and maintenance of the boiler. The records shall include the name of the inspector, the date, and the results or actions.
5. 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 commissioner may request additional reporting to demonstrate compliance with the requirements of this permit, as allowed by state or federal statute, law or regulation.

---

FIRM NAME: United States Naval Submarine Base New London  
 EQUIPMENT LOCATION: Route 12, Groton, CT 06349  
 EQUIPMENT DESCRIPTION: Cleaver Brooks Model CBL-LN (4-PASS, 5 FT<sup>2</sup>) Boiler

---

Town No: 070

Premises No: 28

Permit No: 0279

Stack No: 8

## PERMIT FOR FUEL BURNING EQUIPMENT

### STATE OF CONNECTICUT, DEPARTMENT OF ENVIRONMENTAL PROTECTION BUREAU OF AIR MANAGEMENT

#### PART IV. OPERATION AND MAINTENANCE REQUIREMENTS

- A. The Permittee shall operate and maintain this equipment in accordance with the manufacturer's specifications and written recommendations.

#### PART V. ALLOWABLE EMISSION LIMITS

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

##### A. Criteria Pollutants

	<u>lb/hr (gas)</u>	<u>lb/hr (oil)</u>	<u>tpy</u>
PM	0.37	1.22	1.94
PM-10	0.37	1.22	1.94
PM-2.5	0.37	1.22	1.94
SO <sub>2</sub>	0.08	2.48	1.21
NO <sub>x</sub>	0.52	7.80	4.90
VOC	0.27	0.12	1.18
CO	1.79	1.90	7.87
Pb	2.45E-05	4.41E-04	2.57E-04

- B. **Hazardous Air Pollutants:** This unit 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**]
- C. **OPACITY:** This unit shall not exceed 20% opacity during any six minute block average or 40% opacity, reduced to a one-minute block average, as measured by 40 CFR 60, Appendix A, Reference Method 9.

Demonstration of compliance with the above emission limits shall be met by calculating the emission rates using emission factors from the following sources:

1. PM/PM-10/PM 2.5 (oil), NO<sub>x</sub>, CO: Manufacturer's Data
2. SO<sub>x</sub> (gas): Manufacturer's Data; SO<sub>x</sub> (oil): AP-42
3. PM/PM-10/PM 2.5 (gas), VOC, Pb: AP-42

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.

---

FIRM NAME: United States Naval Submarine Base New London  
 EQUIPMENT LOCATION: Route 12, Groton, CT 06349  
 EQUIPMENT DESCRIPTION: Cleaver Brooks Model CBL-LN (4-PASS, 5 FT<sup>2</sup>) Boiler

---

Town No: 070

Premises No: 28

Permit No: 0279

Stack No: 8

**PERMIT FOR FUEL BURNING EQUIPMENT****STATE OF CONNECTICUT, DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF AIR MANAGEMENT****PART VI. STACK EMISSION TEST REQUIREMENTS** (Applicable if -X- Checked)

Stack emission testing shall be performed in accordance with the Emission Test Guidelines available on the DEP website:

[http://www.ct.gov/dep/cwp/view.asp?a=2684&q=322076&depNav\\_GID=1619](http://www.ct.gov/dep/cwp/view.asp?a=2684&q=322076&depNav_GID=1619).

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

PM       SOx       NOx       CO       VOC       Opacity

Other (HAPs): \_\_\_\_\_, \_\_\_\_\_,

The Permittee shall conduct initial stack testing within 60 days of achieving the maximum production rate, but not later than 180 days after initial startup. Test results must be submitted within 45 days after testing.

Recurrent stack emission testing for the above pollutants shall be conducted within 5 years from the date of the previous stack test.

**PART VII. 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 Dc and A

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

- B. STATE ONLY REQUIREMENT:** 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.
- C.** In order to limit the potential and actual emissions from the premises, the following conditions must be met:
1. EMU-368 - Generac Model 4.5DTA SD100 Emergency Generator (100 kW, Maximum Fuel Firing Rate 7.7 gal/hr): Generator shall not be operated more than 300 hours per year.
  2. EMU-392 - Kohler Model 15ROY/ROZ Emergency Generator (15 kW, Maximum fuel firing Rate 1.4 gal/hr): Generator shall not be operated more than 300 hours per year.

FIRM NAME: United States Naval Submarine Base New London

EQUIPMENT LOCATION: Route 12, Groton, CT 06349

EQUIPMENT DESCRIPTION: Cleaver Brooks Model CBL-LN (4-PASS, 5 FT<sup>2</sup>) Boiler

Town No: 070

Premises No: 28

Permit No: 0279

Stack No: 8

**PERMIT FOR FUEL BURNING EQUIPMENT**

**STATE OF CONNECTICUT, DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF AIR MANAGEMENT**

**PART VII. SPECIAL REQUIREMENTS, cont.**

3. EMU-393 - Kohler Model 15ROY/ROZ Emergency Generator (15 kW, Maximum Fuel firing Rate 1.4 gal/hr): Generator shall not be operated more than 300 hours per year.
  4. EMU-384 - Cummins Model DSHAC-1838029 Emergency Generator (200 kW, Maximum fuel Firing Rate 16.4 gal/hr): Generator shall not be operated more than 300 hours per year.
  5. EMU-272 - Cummins Model DGDA-5770322 Emergency Generator (80 kW, Maximum Fuel Firing Rate 6.3 gal/hr): Generator shall not be operated more than 300 hours per year.
  6. EMU-273 - Cummins Model DGCG Emergency Generator (80 kW, Maximum Fuel Firing Rate 6.3 gal/hr): Generator shall not be operated more than 300 hours per year.
- D.** The Permittee shall continuously monitor and record the monthly and consecutive 12 month hours of operation for each of the six generator engines listed in Part VII.C. of this permit. The consecutive 12 month hours of operation shall be determined by adding the current month's hours of operation to that of the previous 11 months. The Permittee shall make these calculations monthly.
- E.** The Permittee shall make and keep records of the inspection and maintenance of each of the six generator engines listed in Part VII.C. of this permit. The records shall include the name of the inspector or person conducting the maintenance, the date of inspection or maintenance, and the results or actions.
- F.** 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.

**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.

---

FIRM NAME: United States Naval Submarine Base New London  
 EQUIPMENT LOCATION: Route 12, Groton, CT 06349  
 EQUIPMENT DESCRIPTION: Cleaver Brooks Model CBL-LN (4-PASS, 5 FT<sup>2</sup>) Boiler

---

Town No: 070

Premises No: 28

Permit No: 0279

Stack No: 8

**PERMIT FOR FUEL BURNING EQUIPMENT**

**STATE OF CONNECTICUT, DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF AIR MANAGEMENT**

**PART VIII. ADDITIONAL TERMS AND CONDITIONS, cont.**

- B.** Any representative of the DEP 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.

---

FIRM NAME: United States Naval Submarine Base New London  
 EQUIPMENT LOCATION: Route 12, Groton, CT 06349  
 EQUIPMENT DESCRIPTION: Cleaver Brooks Model CBL-LN (4-PASS, 5 FT<sup>2</sup>) Boiler

---

Town No: 070

Premises No: 28

Permit No: 0279

Stack No: 8

**PERMIT FOR FUEL BURNING EQUIPMENT****STATE OF CONNECTICUT, DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF AIR MANAGEMENT****PART VIII. ADDITIONAL TERMS AND CONDITIONS, cont.**

- 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 Environmental Protection; 79 Elm Street, 5th Floor; Hartford, Connecticut 06106-5127.

---

FIRM NAME: United States Naval Submarine Base New London  
EQUIPMENT LOCATION: Route 12, Groton, CT 06349  
EQUIPMENT DESCRIPTION: Cleaver Brooks Model CBL-LN (4-PASS, 5 FT<sup>2</sup>) Boiler

---

Town No: 070

Premises No: 28

Permit No: 0279

Stack No: 8