



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 ²) Boiler
Collateral Conditions:	This permit contains collateral conditions affecting one emergency engine as specified in Part VII of this permit.

Town-Permit Numbers:	070-0283
Town-Premises Numbers:	070-28
Permit Issue Date:	May 4, 2011
Expiration Date:	None

/s/ Amey Marrella for
Daniel C. Esty
Commissioner

5/4/2011
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 FT²) 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): 14,311 (Natural Gas), 14,389 (Oil)
3. Stack Exit Temperature (°F): 286 (Gas), 284 (Oil)
4. Minimum Distance from Stack to nearest property line (Thames River Boundary) (ft): 140

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
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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 PM₁₀/PM_{2.5}, SO₂, NO_x, 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
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Town No: 070

Premises No: 28

Permit No: 0283

Stack No: 36

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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 ₂	0.08	2.52	1.21
NOx	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), NOx, CO: Manufacturer's Data
2. SOx (gas): Manufacturer's Data; SOx (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.

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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.

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 Standards and National Emission Standards for Hazardous Air Pollutants for Source categories at all times.

Title 40 CFR Part 60, Subparts Dc and A

Title 40 CFR Part 63, Subpart DDDDD 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 condition must be met:

1. EMU-369 - Galley Emergency Generator, Building 446: Operations to be limited to no more than 300 hours per year.

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PART VII. SPECIAL REQUIREMENTS, continued

- D.** The Permittee shall continuously monitor and record the monthly and consecutive 12 month hours of operation for the generator engine 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 the generator engine 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.
- 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.

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PART VIII. ADDITIONAL TERMS AND CONDITIONS, continued

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

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NSR Engineering Evaluation

CT Department of Environmental Protection
Bureau of Air Management

Administrative Information

Date Application Received: 1/10/2011

SIMS No: 201100124

EPE No: 52258

Applicant Information

Company Name: United States Navy,
Submarine Base New London

Equipment Location: Route 12, Groton, CT
06349

Mailing Address: Environmental Division,
Public works Department, Box 400, Groton, CT
06349

Contact Person: Mr. Michael Brown

Contact Title: Air/EMS Program Manager

Contact Phone Number: 860-694-5159

Consultant Name/Company: Rick Soucy,
GZA GeoEnvironmental, Inc.

Consultant Phone Number: 860-858-3163

Evaluation Information

Date Prepared: 1/25/2011

Prepared By: Mr. Kevin J. O'Neil, kjo

Permit Information

Permit No: 070-0283

Equipment Description: Cleaver Brooks Model
CBL-LN Boiler

Choose a Permit Type:

- | | |
|---|---|
| <input checked="" type="checkbox"/> Single Unit | <input type="checkbox"/> Multiple Units |
| <input checked="" type="checkbox"/> New NSR at a Major Source | <input type="checkbox"/> New NSR at a Minor Source |
| <input type="checkbox"/> Non-Minor Modification at a Major Source | <input type="checkbox"/> Non-Minor Modification at a Minor Source |
| <input type="checkbox"/> Minor Modification at a Major Source | <input type="checkbox"/> Minor Modification at a Minor Source |
| <input type="checkbox"/> Revision at a Major Source | <input type="checkbox"/> Revision at a Minor Source |

Update Fields

Part I. – Annual Emission Review: Tons Per Year

Pollutant	Premises PTE	Permit PTE	New Premises PTE
PM	56.4	1.94	58.34
PM10	42.9	1.94	44.84
PM2.5	42.9	1.94	44.84
SOx	721.3	1.24	722.54
NOx	560.3	4.90	565.2
VOC	70.7	1.18	71.88
CO	170.6	7.87	178.47
Pb	5.66	2.57E-4	5.66
HAP	<25	2.18	<25

Part II. – Emissions Summary (TPY) for Major Modification Determination (Attachment C)

	Actual Emissions (2 yr avg)	PTE as limited by permit	Actual Emissions Increase/ Decrease	Net Emissions Change	Significance Levels (Table 3a(k)-1)	Increase Equal or greater than Table 3a(k)-1?
PM	3.2	1.94			25	No
PM10	3.5	1.94			15	No
PM2.5	3.5	1.94				No
SO2	8.6	1.24			40	No
NOx (ozone)	39.2	4.90	9.89	9.89	25	No
NOx (NAAQS)	39.2	4.90	9.89	9.89	40	No
VOC	21.0	1.18	2.75	2.75	25	No
CO	20.0	7.87			100	No
Pb		2.57E-4			0.6	No
Other		2.18				No

Part III. – Emissions Standards Review and Regulatory Authority

a.

Regulatory Standard	Allowable Rate(s)	Basis
PM: 0.10 lb/MMBTU RCSA §22a-174-18	0.008 lb/MMBTu (gas) and 0.025 lb/MMBTu (oil)	AP-42 (gas) Manufacturer’s Data (oil)
SOx: RCSA §22a-174-19	0.08 lb/hr (gas) and 2.52 lb/hr (oil)	Manufacturer’s Data (gas) AP-42 (oil)
NOx: 0.20 lb/MMBTU (gas) and 0.25 lb/MMBTU (oil) RCSA §22a-174-22	0.011 lb/MMBTU (gas) and 0.159 lb/MMBTu (oil)	Manufacturer’s Data
VOC: RCSA §22a-174-20	0.27 lb/hr (gas) and 0.12 lb/hr (oil)	AP -42
CO: RCSA §22a-174-21	1.79 lb/hr (gas) and 1.90 lb/hr (oil)	Manufacturer’s Data
Pb: 6524 ug/m ³ (gas) and 6327 ug/m ³ (oil) RCSA §22a-174-29	0.46 ug/m ³ (gas) and 8.23ug/m ³ (oil)	AP-42

- b. Source subject to: NSPS – 40 CFR Part 60 Subpart _____ Dc
 NESHAP – 40 CFR Part 61 Subpart _____
 NESHAP – 40 CFR Part 63 Subpart _____ DDDDD
 None

Note: Any source subject to NESHAP Part 63 will be subject, in part, to Part 59 General Provisions as well.

- c. Hazardous Air Pollutant Compliance (RCSA §22a-174-29) (Attachment A): Yes

Part IV. – Ambient Impact Analysis:

Source is subject to Ambient Impact Analysis: Yes

If no, check applicable box: PM₁₀/ SO_x < 3 TPY; PM_{2.5} < 1 TPY; NO_x/CO < 5 TPY

a. Screening

“Screening” is required when the allowable emissions for all equipment being permitted contemporaneously exceed any of the limits below.

- 3 ≤ PM₁₀ < 15 TPY
- 3 ≤ SO_x < 15 TPY
- 1 ≤ PM_{2.5} < 10 TPY
- 5 ≤ NO_x < 40 TPY
- 5 ≤ CO < 100 TPY

Date screening completed/approved (Attachment B1): 3/18/2011

b. Refined Modeling

“Refined Modeling” is required when the allowable emissions for all equipment being permitted contemporaneously exceed any of the limits below.

- PM₁₀ ≥ 15 TPY
- SO_x ≥ 15 TPY
- PM_{2.5} ≥ 10 TPY
- NO_x ≥ 40 TPY
- CO ≥ 100 TPY
- Pb ≥ 0.6 TPY
- Total Dioxins ≥ 0.6E-7 TPY

Date Refined Modeling completed/approved (Attachment B2): Date

Part V. – PSD Review

Source is subject to PSD Review: No

Source netted out of PSD Review (Attachment C1) : No

a. Source has significant impact (per RCSA 22a-174-3a(i)) for (Attachment B3):

- PM₁₀ SO₂ CO NO_x Dioxin PB

b. Increment Consumption Analysis Completed for: PM SO_x NO_x

c. Pre-construction monitoring required for _; waived

d. Visibility, soils, and vegetation impact analysis approved: Choose one.

e. General commercial, residential, industrial, and other associated growth analysis approved: Choose one.

f. Ambient air quality impact protection analysis approved (Attachment B4): Choose one.

Part VI. – Non-attainment Review:

Source is subject to non-attainment review (Attachment C2): No

a. Pollutant(s):

b. Emissions Increase over the last 5 years (tons):

Part VI. – Non-attainment Review, continued:

c. Offset Ratio:

d. Offsets Required:

Part VII. – Control Technology Analysis:

a. BACT/MACT Compliance: Yes

b. BACT/MACT Utilized (Attachment C):

<u>Pollutant</u>	<u>BACT/MACT</u>
SOx	Limitation on Fuel Usage, Limitation on sulfur in fuel to 0.05%
NOx	Limitation on Fuel Usage, Low NOx Burners, Flue Gas Recirculation

Part VIII. Emission Testing Requirements:

a. Stack emission testing shall be required for the following pollutant(s):

- | | |
|--|----------------------------------|
| <input type="checkbox"/> None at this time | <input type="checkbox"/> CO |
| <input type="checkbox"/> PM10 | <input type="checkbox"/> VOC |
| <input type="checkbox"/> SOx | <input type="checkbox"/> Pb |
| <input checked="" type="checkbox"/> NOx | <input type="checkbox"/> Opacity |
| <input type="checkbox"/> Other (HAPS): _____ | |

b. Testing schedule included in permit: Yes

c. AE 405 Stack Test Referral Form Completed: Yes

d. Recurring tests required: (If yes, notify Stack Testing Group) Yes
 Frequency: every 5 years from the date of the last test

e. CEMS Requirements:

- | | |
|---|----------------------------------|
| <input checked="" type="checkbox"/> None at this time | <input type="checkbox"/> CO |
| <input type="checkbox"/> SOx | <input type="checkbox"/> VOC |
| <input type="checkbox"/> NOx | <input type="checkbox"/> Opacity |
| <input type="checkbox"/> Other: _____ | |

Part IX. – Administrative Criteria Review:

a. Air Quality Status:
 Ozone: serious non-attainment
 PM2.5: attainment

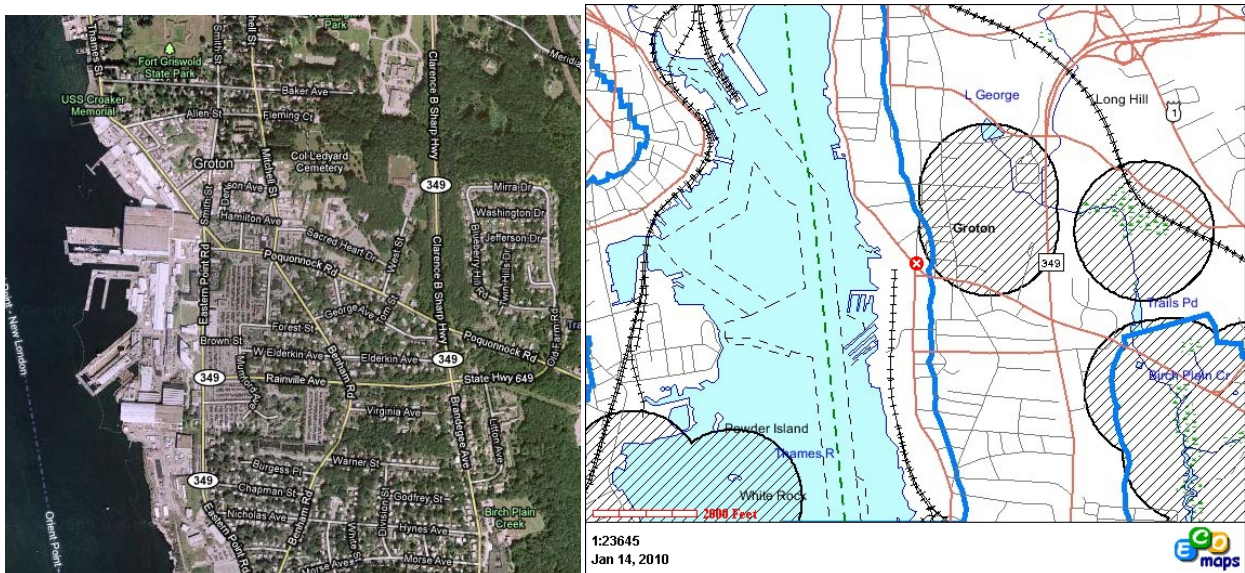
b. Premises size: <15TPY ≥15, <100 TPY ≥100 TPY

c. Source size: <15TPY ≥15, <100 TPY ≥100 TPY

Part IX. – Administrative Criteria Review, continued:

- d. The source is a new fossil fuel fired unit that serves a generator with a nameplate capacity of 15 MW or greater or is a new fossil fuel fired boiler or indirect heat exchanger with a maximum heat input capacity of 250 MMBTU or more.: No (If yes, notify P&S NOx Budget Program)
- e. Fee (Attachment D): \$3250.00
- f. Signatory responsibilities authorized (Attachment E): Yes
- g. Source entered in SIMS P&E Tracking system: Yes
- h. Source entered in EMIT Permit Tracking System: Yes
- i. Source is in the Coastal Boundary: Yes
Source is in the Coastal Area: Yes
- j. Source is on federally recognized Indian lands: No
- k. Source is in a Natural Diversity DataBase Area: No
- l. Source is Subject to conservation/preservation restrictions: No
- m. The source to be permitted combusts coal, waste oil, tires, recycled materials, construction/demolition debris, wood products, biological waste or any other non-fossil fuel that may contain or emit toxic air pollutants: No
The source to be permitted is major for federal HAPs: No
- n. The source to be permitted is subject to RCSA §22a-174-22: No

Part X. – Maps:



Part XI. – CGS 22a-6 and 22a-186a Compliance:

- 6g - Certified Notice of Application: Yes
- 6p - Posting of Notice Certification: N/A
- 6m - Compliance Information (Attachment F): Yes

Part XII. – Special Requirements:

The following collateral conditions were placed in this permit regarding an emergency generator located at the premises.

EMU-369 – Galley Emergency Generator, Building 446: Operations to be limited to no more than 300 hours per year.

Monitoring, recordkeeping, and reporting requirements were added to ensure that the United States Naval Submarine Base New London (SUBASENLON) is in compliance with these conditions.

Part XIII. – Summary:

The Cleaver brooks Model CBL-LN (4PASS, 5FT²) boiler will be used by the United States Naval Submarine Base New London to provide steam to heat buildings throughout the base. It will be located in the existing Power Plant Building (Building No. 29). The boiler will replace an International Boiler Works (Model VSG 74.2) boiler that has been decommissioned and who's NSR Permit No. 070-0074 was previously revoked by the Connecticut Department of Environmental Protection.

This site is major for SO_x, NO_x, and CO. Therefore, a major modification determination was made. Over the period of 2005-2010, several pieces of equipment have been added and removed, resulting in an overall emissions increase. In order to keep the criteria pollutants' net emissions change below the significance levels listed in Regulations of Connecticut State Agencies (RCSA) Table 3a(k)-1, a collateral condition was added to this permit. This condition is summarized in Part XII – Special Requirements section of this evaluation. Monitoring, recordkeeping, and reporting requirements have also been added to the permit to enforce this condition. Therefore, since none of the significance levels were exceeded, the source was not subject to Prevention of Significant Deterioration (PSD) or Non-Attainment Reviews.

The source is subject to New Source Performance Standards (NSPS) Part 60, Subparts A and Dc. The source will also be subject to the final ruling for National Emission Standards for Hazardous Air Pollutants (NESHAP) Part 63, Subpart DDDDD. This source is compliant with all Maximum Allowable Stack Concentration (MASC) calculations.

A screening analysis was required because the permitted emission limits for CO and PM_{2.5} are within the screening thresholds. On March 18, 2011 a memo was issued from Hong Pho indicating that the source passed the screening analysis and no further modeling was required. (See attached email from Modeling Group).

Part XIII. – Summary, continued:

The applicant was required to complete a BACT analysis for SO_x and NO_x because their potential emissions exceed the 15 TPY thresholds. The proposed BACT alternative for SO_x is a fuel limitation of 429.135 MMcf of natural gas and 251,938 gallons of low sulfur fuel oil (0.05% sulfur). The other alternatives included using a lower sulfur content fuel and wet or dry scrubbers, both of these were ruled out for being technically infeasible. A review of EPA's RBLC Clearinghouse found that most alternatives selected were fuel limitations or the use of ultra low sulfur fuel oil (0.0015% sulfur). However, as stated by SUBASENLON, due to existing government fuel procurement contracts for use of 0.05% sulfur fuel, the fact that all the of the equipment at the Power Plant share a common fuel supply and the space constraints of constructing a dedicated fuel storage and delivery system for the new boiler, the use of ultra low sulfur fuel oil is not a option for them at this time. Furthermore, reducing the sulfur in the fuel oil further to 0.0015% only results in an emissions reduction of less than 1 TPY. Therefore, at this time, BACT has been determined by the Department to be a fuel limitation of 251,938 gallons and a limitation of sulfur in the fuel to 0.05%.

The proposed BACT alternative for NO_x is the use of integrated combustion controls – Ultra-Low-NO_x Burners and Flue Gas Recirculation (FGR) and fuel limitation of 429.135 MMcf of Natural Gas (depending on the amount of fuel oil used) and 251,938 gallons of low sulfur fuel oil. A review of EPA's RBLC Clearinghouse found most boilers in this size range selected flue gas recirculation and low NO_x burners as their BACT alternative. Therefore, built-in combustion controls and a fuel limitation are considered BACT for this boiler.

Since, the selected BACT alternatives claim to have some emissions reductions, The SUBASENLON will be required to stack test for NO_x. There are no CEMS requirements at this time.

The source is in a serious non-attainment area for ozone and is in an attainment area for PM_{2.5}. The source is not located in a Natural Diversity Database shaded area or on federally recognized Indian lands. It is not subject to conservation or preservation restrictions. The source is located in a coastal area. A Coastal Consistency Review Form has been completed and submitted to the Coastal Planning Section of the Office of Long Island Sound Programs (OLISP). No response from OLISP has been received to date.

The compliance record was reviewed in accordance with the Environmental Compliance History Policy. The applicant's submitted compliance information form was reviewed along with agency records, including the SIMS Enforcement database, for information to evaluate the applicant's compliance history and the relevance of such history to the activity for which authorization is being sought. Additionally, a review of air program compliance was requested from the Enforcement Section and that response forms a part of this record.

Based on the information submitted by the applicant, this engineering evaluation and the compliance history review, the granting of a permit is recommended for United States Navy, Submarine Base New London .

/s/ Kevin O'Neil
Kevin J. O'Neil, APCE

3/31/11
Date

Approvals:

/s/ Kiernan Wholean 3/3/11
Kiernan J. Wholean
Supervising APCE

/s/ Richard Pirolli 3/31/11
Richard A. Pirolli
Assistant Director

**NSR Engineering Evaluation Attachment Coversheet
 CT Department of Environmental Protection
 Bureau of Air Management**

For Attachment:

- A. Hazardous Air Pollutant (HAP) Review
- B. Ambient Impact Analysis
 - B1. Screening
 - B2. Refined Modeling
 - B3. Increment Consumption Analysis
 - B4. Additional Analysis (soils, visibility, growth, etc.)
- C. Premises Non-attainment Pollutant Summary
 - C1. Netting Analysis
 - C2. 5 year aggregation (Deminimis Rule)
- D. Best Available Control Technology (BACT) Review; Maximum Achievable Control Technology (MACT) Review
- E. Premises Emissions/Fee Calculations
- F. Signatory Responsibility Certification
- G. CGS 22a-6m: Compliance History

Findings:

<u>Attachment</u>	<u>Findings</u>
A	The source is in compliance with all Hazardous Air Pollutant Regulations.
B	The source passed screening on March 18, 2011.
D	BACT for this boiler has been determined to be a limitation on fuel usage, low NOx burners, and flue gas recirculation
E	\$3, 250 (Total Permit Fee) - \$940 (Application Fee) = \$2, 310 (Remaining Fee)
F	The application is signed by Captain M.W. Denno, Commanding Officer of the United States Navy.
G	There is no history of non-compliance within the past 5 years.

MEMORANDUM

TO: RICHARD A. PIROLI, ASSISTANT DIRECTOR

FROM: KIERNAN J. WHOLEAN, SAPCE
KEVIN J. O'NEIL, APCE INTERN

SUBJECT: TENTATIVE DETERMINATION FOR US NAVAL SUBMARINE BASE (PERMIT # 070-0283)

DATE: 5/3/2011

Tentative determination for a permit to construct and operate a Cleaver Brooks boiler was issued to the US Naval Sub Base on March 31, 2011. Notice was published in the New London Day on April 2, 2011. The 30 – Day Comment Period ended May 2, 2011. Payments for the balance of the Permit Fee (\$2,310.00) and the Public Notice Fee (\$506.04) have been received.

On April 8, 2011 the following comments were received from Rick Soucy, a consultant for the United States Naval Submarine Base New London, requesting changes to Draft Permit #070-0283.

Comments Received:

1. Part I.D.3 – Stack Exit Temperatures: The draft permit lists the minimum stack exit temperature as 286 °F. This represents the expected minimum stack temperature for natural gas-fired operations. However, the expected minimum stack temperature for oil-fired operations is 284 °F. Therefore, we request that the stack exit temperature be revised to 284 °F so that it represents the overall minimum stack exit temperature expected for both fuels.
2. Part I.D.4 –Minimum Distance from Stack to Thames River Boundary: This distance should be revised to 140 feet to be consistent with the minimum property line distance that was used in the MASC calculations that were submitted with the permit application.
3. Part VII.A: This section of the draft permit lists the New Source Performance Standards (40 CFR 60, Subparts Dc and A) and the National Emission Standards for Hazardous Air pollutants for Source Categories (40 CFR 63, Subparts DDDDD and A) that are applicable to the proposed new boiler. However, the introductory sentence to this section only refers to “the following New Source Performance Standards”. We recommend that this sentence be revised as follows so that it is more generally applicable: “The permittee shall comply with all applicable sections of the following at all times.” Alternatively, the CTDEP may prefer to modify this sentence to read as follows: “The permittee shall comply with all applicable sections of the following New Source Performance Standard(s) and National Emission Standards for Hazardous Air Pollutants for Source categories at all times.”

Changes Made to the Drafted Permit:

1. The language in Part I.D. 2 of the permit has been revised to read “Minimum Exhaust Gas Flow Rate (acfm): 14,311 (Natural gas), 14,389 (Oil)” to properly state minimum flow rates for each fuel source. The language in Part I.D.3 of the permit has been revised to read “Stack Exit Temperature (°F): 286 (Gas), 284 (Oil)” to properly state exit temperatures for the fore mentioned minimum exhaust flow rates.
2. The language in Part I.D.4 has been revised to read “140” to properly reflect the minimum distance from the Stack to the property line.
3. The language in Part VII.A has been revised to read “The permittee shall comply with all applicable sections of the following New Source Performance Standards and National Emission Standards for Hazardous Air Pollutants for Source categories at all times.”

/s/ Kevin O’Neil
Kevin J. O’Neil
APCE-Intern

May 3, 2011
Date

Review:

/s/ Kiernan Wholean
Kiernan Wholean
Supervising APCE

May 3, 2011
Date