



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>	Electric Boat Corporation
<b>Address</b>	75 Eastern Point Road, Groton, CT 06340
<b>Equipment Location</b>	75 Eastern Point Road, Groton, CT 06340
<b>Equipment Description</b>	Babcock & Wilcox FMO-66 boiler
<b>Town-Permit Numbers</b>	070-0284
<b>Premises Number</b>	0005
<b>Stack Number</b>	60
<b>Permit Issue Date</b>	September 12, 2012
<b>Revision/Modification Issue Date</b>	June 23, 2014
<b>Expiration Date</b>	None

/s/ Anne Gobin  
Robert J. Klee  
Commissioner

June 23, 2014  
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**

A Babcock & Wilcox FMO-66 boiler capable of generating 75,000 lb/h of steam @ 750 psig used to test onboard submarine systems. This boiler is classified as a Limited use boiler pursuant to 40 CFR 63 Subpart DDDDD.

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

1. Fuel Type(s): Natural Gas
2. Maximum Fuel Firing Rate(s) (MCF/hr, gal/hr): Natural Gas – 121,400 cf/h
3. Maximum Gross Heat Input (MMBTU/hr): 121.4 MMBtu/h

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

1. Low NO<sub>x</sub> Burner with flue gas recirculation
  - a. Make and Model: Faber Type WB-1-31

### **D. Stack Parameters**

1. Minimum Stack Height (ft): 147
2. Minimum Exhaust Gas Flow Rate (acfm): 39,469
3. Minimum Stack Exit Temperature (°F): 350
4. Minimum Distance from Stack to Property Line (ft): 750

## **PART II. OPERATIONAL CONDITIONS**

### **A. Equipment**

1. Maximum Fuel Consumption over any Consecutive 12 Month Period: Natural gas – 96 MMcf

### 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. Criteria Pollutants

Pollutant	lb/hr	lb/MMBtu	tpy
PM	1.9		0.8
PM <sub>10</sub>	1.9		0.8
PM <sub>2.5</sub>	1.9		0.8
SO <sub>2</sub>	0.1		0.03
NO <sub>x</sub>	4.4	0.2	1.7
VOC	0.5		0.2
CO	8.9		3.5
Pb	0.00006		0.00002

#### B. 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 RCSCA Section 22a-174-29. [STATE ONLY REQUIREMENT]

#### C. Opacity

This equipment shall not exceed 10% opacity during any six minute block average as measured by 40 CFR 60, Appendix A, Reference Method 9.

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

- AP-42, July 1998
- Manufacturer's guarantee or stack test results

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 fuel consumption using a non-resettable totalizing fuel meter.

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

### B. Record Keeping

1. The Permittee shall keep records of monthly and consecutive 12 month fuel consumption. The consecutive 12 month fuel consumption shall be determined by adding the current month's fuel consumption 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 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 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):

- PM     PM<sub>10</sub>     PM<sub>2.5</sub>     SO<sub>2</sub>     NO<sub>x</sub>     CO  
 VOC     Opacity     Other (HAPs):

## PART VI. OPERATION AND MAINTENANCE REQUIREMENTS

- A. The Permittee shall operate and maintain this equipment in accordance with the manufacturer's specifications and written recommendations.
- B. The Permittee shall properly operate the control equipment at all times that this equipment is in operation and emitting air pollutants.
- C. The Permittee shall perform biennial tune-ups in accordance with 40 CFR §63.7540(a)(11) (Boiler MACT)

## 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 Db and A

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

## **PART VII. SPECIAL REQUIREMENTS, continued**

- 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, Subparts DDDDD and A

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

- C.** The Permittee shall not cause or permit the emission of any substance or combination of substances which creates or contributes to an odor beyond the property boundary of the premises that constitutes a nuisance as set forth in RCSA Section 22a-174-23. [STATE ONLY REQUIREMENT]
- 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]
- E.** The Permittee must complete an energy assessment in accordance with 40 CFR 63 Subpart DDDDD, Table 3 for other existing boilers at the facility subject to 40 CFR 63 Subpart DDDDD that are not limited use boilers. [40 CFR §63.7500(c)]

## **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 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.

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



**NSR Engineering Evaluation**  
 CT Department of Energy and Environmental Protection  
 Bureau of Air Management

<b>Company Name:</b>	Electric Boat Corporation	<b>Permit No.:</b>	070-0284
<b>Equipment Location:</b>	75 Eastern Point Road, Groton, CT 06340	<b>Date App Received:</b>	4/29/2014
<b>Mailing Address:</b>	75 Eastern Point Road, Groton, CT 06340	<b>SIMS No.:</b>	201404216
<b>Contact Person:</b>	Ms. Donna Elks	<b>Date Prepared:</b>	6/4/2014
<b>Contact Title:</b>	Manager of Environmental Resources	<b>Prepared By:</b>	Dave LaRiviere
<b>Contact Phone:</b>	(860) 433-5751	<b>Single or Multiple Units:</b>	Single
<b>Contact Email:</b>	Delks2@gceb.com	<b>Permit Type:</b>	Minor Mod (prepaid)
<b>Ozone:</b>	serious non-attainment	<b>Premises Size:</b>	Major
<b>PM2.5:</b>	attainment	<b>Equipment Size:</b>	Minor
<b>Equipment Description</b>	Babcock & Wilcox FMO-66 boiler	<b>TV/GPLPE Permit No:</b>	070-0193-TV
Step 1: Complete all the fields above			
<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">Step 2: <input type="button" value="Generate Eval"/></div> <div style="text-align: center;">Step 3: <input type="button" value="Update Fields"/></div> </div>			

**Introduction**

**Reason for Application:**

To eliminate a design specification and add the NO<sub>x</sub> RACT emission limit of 0.2 lb/MMBtu for clarity.

**Regulatory Applicability:**

The application qualifies as a minor mod under RCSA §22a-174-2a(e).

**Discussion of Modification:**

During a recent stack test, Electric Boat Corporation was cited for not meeting a design specification in Permit No. 070-0284, namely the manufacturer’s guaranteed emission rate of 0.04 lb/MMBtu. This is not an enforceable condition of the permit. It is a design specification. The boiler complied with the enforceable emission rate in lb/hr.

This application was submitted to resolve NOV 17157. The manufacturer’s design specification will be removed to avoid confusion and the NO<sub>x</sub> RACT emission rate of 0.2 lb/MMBtu will be added to the allowable emissions table. The boiler underwent a BACT review for NO<sub>x</sub> during the original permit review and the lb/hr emission rate reflects this.

There are no changes to the hourly or annual emission rate in this permit.

## Emissions Change from Modification/Revision

Pollutant	Existing Permit (tpy)	Modified Permit (tpy)	Change in Emissions (tpy)
PM	0.8	0.8	0
PM <sub>10</sub>	0.8	0.8	0
PM <sub>2.5</sub>	0.8	0.8	0
SO <sub>x</sub>	0.03	0.03	0
NO <sub>x</sub>	1.7	1.7	0
VOC	0.2	0.2	0
CO	3.5	3.5	0
Other:			0

Comments:

## Ambient Air Quality Impact Analysis (Attachment L of NSR Application)

Review Type	Conduct If...	Emissions/Analysis	Dates
<b>Refined Modeling</b>	...allowable emissions for all equipment being permitted contemporaneously exceed any of the limits to the right →	<input type="checkbox"/> PM <sub>10</sub> ≥ 15 TPY <input type="checkbox"/> SO <sub>x</sub> ≥ 15 TPY <input type="checkbox"/> PM <sub>2.5</sub> ≥ 10 TPY <input type="checkbox"/> NO <sub>x</sub> ≥ 40 TPY <input type="checkbox"/> CO ≥ 100 TPY <input type="checkbox"/> Pb ≥ 0.6 TPY <input type="checkbox"/> Total Dioxins ≥ 0.6E-7 TPY	Date Sent: n/a Date Approved: n/a
<b>Screening</b>	...allowable emissions for all equipment being permitted contemporaneously fall into any of the ranges to the right →	<input type="checkbox"/> 3 ≤ PM <sub>10</sub> < 15 TPY <input type="checkbox"/> 3 ≤ SO <sub>x</sub> < 15 TPY <input type="checkbox"/> 1 ≤ PM <sub>2.5</sub> < 10 TPY <input type="checkbox"/> 5 ≤ NO <sub>x</sub> < 40 TPY <input type="checkbox"/> 5 ≤ CO < 100 TPY	Date Sent: n/a Date Approved: n/a
<b>Stack Height Review</b>	...screening and refined modeling are not required.	Stack Height (SH): Building Height (BH): Building Width (BW):  The equipment passes if any of the below are checked: <input type="checkbox"/> SH > 10 meters <input type="checkbox"/> SH > 1.3 * (BH) <input type="checkbox"/> SH > 1.3 * (BW)	Date Approved: n/a

Comments: Ambient impact analysis is not required. There are no emission rate changes.

**Permit Fee(s)** (Double Click to edit)

Was Permit Fee paid with Application Fee?  Yes -1750

**Additional Application Fees (\$1750 Each)**

	Quantity	
BACT Review	0	\$0
LAER Review	0	\$0

**Money Owed \$0**

**Comments:**

**Compliance History Review**

Was the SIMS Enforcement Report run and reviewed for this applicant?	Yes
Were other bureaus contacted to resolve any outstanding enforcement actions shown in the SIMS Report?	No
What is the date on the Enforcement Section's review of air compliance email?	6/11/2014
Was the compliance record reviewed in accordance with the Environmental Compliance History Policy?	Yes

**Comments:** All enforcement actions in the SIMS Report were resolved.

**Approvals**

Based on the information submitted by the applicant, this engineering evaluation and the compliance history review, the granting of a permit is recommended for Electric Boat Corporation.

/s/ David LaRiviere  
David LaRiviere  
APCE III

/s/ Susan E. Amarello 6/17/2014  
Susan E. Amarello  
Supervising APCE