



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 06340-1047                        |
| <b>Equipment Location</b>      | 75 Eastern Point Road, Groton, CT 06340-1047                        |
| <b>Equipment Description</b>   | Johnston Boiler Series 509 3-Pass Boiler<br>Model # PFTX1000-3G150S |
| <b>Town-Permit Numbers</b>     | 070-0287  |
| <b>Premises Number</b>         | 5   |
| <b>Stack Number</b>            | 63  |
| <b>Modification Issue Date</b> | August 11, 2020   |
| <b>Prior Permit Issue Date</b> | June 20, 2019   |
| <b>Expiration Date</b>         | None  |

*Tracy R. Babbidge*

for Betsey C. Wingfield  
Deputy Commissioner

8/11/2020

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**

Johnston Boiler Series 509 3-Pass Boiler, Model # PFTX1000-3G150S

This boiler is one of four identical boilers at the Main Yard Heating Plant.

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

1. Fuel Types: Natural Gas and Distillate Oil
2. Maximum Fuel Firing Rates: 39,559 cf/hr (natural gas), 275.8 gal/hr (distillate oil)
3. Maximum Gross Heat Input (MMBtu/hr): 39.6 (natural gas), 37.8 (distillate oil)

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

1. Low NO<sub>x</sub> Burner and Flue Gas Recirculation
  - a. Make and Model: Preferred Utilities API-RF-100
  - b. Guaranteed NO<sub>x</sub> Emission Rate (lb/MMBtu): 0.035 (natural gas), 0.097 (distillate oil)

### **D. Stack Parameters**

1. Minimum Stack Height (ft): 115
2. Minimum Exhaust Gas Flow Rate (acfm): 31,384<sup>1</sup>
3. Minimum Stack Exit Temperature (°F): 333<sup>1</sup>
4. Minimum Distance from Stack to Nearest Property Line (ft): 296

<sup>1</sup> – All four boilers at Main Yard Heating Plant firing natural gas at maximum capacity.

## **PART II. OPERATIONAL CONDITIONS**

### **A. Equipment**

1. Maximum Fuel Consumption over any Consecutive 12 Month Period for the four boilers at the Main Yard Heating Plant (Permit Nos. 070-0287, -0288, -0289, -0290) combined:
  - a. Natural Gas – 1,386,000,000 cf
  - b. Distillate Oil – 4,941,465 gal
2. Maximum Fuel Sulfur Content (% by weight, dry basis): 0.0015

**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**

Natural gas firing per boiler

| Pollutant         | lb/hr  | lb/MMBtu |
|-------------------|--------|----------|
| PM                | 0.30   |          |
| PM <sub>10</sub>  | 0.04   |          |
| PM <sub>2.5</sub> | 0.04   |          |
| SO <sub>2</sub>   | 0.02   |          |
| NO <sub>x</sub>   | 1.38   | 0.035    |
| VOC               | 0.22   |          |
| CO                | 1.42   |          |
| Pb                | 2.0e-5 |          |

Distillate oil firing per boiler

| Pollutant         | lb/hr   | lb/MMBtu |
|-------------------|---------|----------|
| PM                | 0.91    |          |
| PM <sub>10</sub>  | 0.19    |          |
| PM <sub>2.5</sub> | 0.19    |          |
| SO <sub>2</sub>   | 0.06    |          |
| NO <sub>x</sub>   | 3.67    | 0.097    |
| VOC               | 0.09    |          |
| CO                | 1.51    |          |
| Pb                | 3.48e-4 |          |

Total annual emissions for the boilers at the Main Yard Heating Plant subject to Permit Nos. 070-0287, -0288, -0289, -0290

| Pollutant         | tpy   |
|-------------------|-------|
| PM                | 8.15  |
| PM <sub>10</sub>  | 1.69  |
| PM <sub>2.5</sub> | 1.69  |
| SO <sub>2</sub>   | 0.53  |
| NO <sub>x</sub>   | 32.85 |
| VOC               | 4.05  |
| CO                | 26.49 |
| Pb                | 0.003 |

## **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 RCSA 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 may be met by calculating the emission rates using emission factors from the following sources:**

- *Natural Gas*  
*PM – AP-42, Section 1.4, Table 1.4-2 (July 1998)*  
*PM<sub>2.5</sub>/PM<sub>10</sub> – Manufacturer's Data*  
*SO<sub>2</sub> – AP-42, Section 1.4, Table 1.4-2 (July 1998)*  
*NO<sub>x</sub> – Manufacturer's Data, initially, then latest CT DEEP approved stack test data*  
*CO – Manufacturer's Data*  
*VOC – AP-42, Section 1.4, Table 1.4-2 (July 1998)*
- *Distillate Oil*  
*PM – AP-42, Section 1.3, Table 1.3-1, -2 (May 2010)*  
*PM<sub>2.5</sub>/PM<sub>10</sub> – Manufacturer's Data*  
*SO<sub>2</sub> – AP-42, Section 1.3, Table 1.3-1 (May 2010)*  
*NO<sub>x</sub> – Manufacturer's Data, initially, then latest CT DEEP approved stack test data*  
*CO – Manufacturer's Data*  
*VOC – AP-42, Section 1.3, Table 1.3-1 (May 2010))*

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 for both natural gas and distillate oil using non-resettable totalizing fuel meters.
2. The Permittee shall perform inspections of the control devices as recommended by the manufacturer.

### **B. Record Keeping**

1. The Permittee shall calculate and record the monthly and consecutive 12 month fuel consumption of the Main Yard Heating Plant boilers (Permit Nos. 070-0287, -0288, -0289, -0290) combined. The consecutive 12 month fuel consumption shall be determined by adding (for each fuel) the current month's fuel consumption for all four boilers to that of the previous 11 months fuel consumption for all four boilers. 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 distillate 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 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, PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub>, NO<sub>x</sub>, VOC, and CO total emissions of the Main Yard Heating Plant boilers (Permit Nos. 070-0287, -0288, -0289, -0290) in units of tons. The consecutive 12 month total emissions shall be determined by adding (for each pollutant) the current month's emissions for all four boilers to that of the previous 11 months emissions for all four boilers. 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 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 boiler or the air pollution control equipment. 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.
2. The Permittee shall notify the commissioner, in writing, of the date of commencement of construction and the date of initial startup of this equipment. Such written notifications shall be submitted no later than 30 days after the subject event.

**PART V. STACK EMISSION TEST REQUIREMENTS**

- A.** Stack emission testing shall be performed in accordance with the [Emission Test Guidelines](#) available on the DEEP website.
- B.** Initial stack testing shall be required for the following pollutant for both natural gas and Oil firing:
- PM       PM<sub>10</sub>       PM<sub>2.5</sub>       SO<sub>2</sub>       NO<sub>x</sub>       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. The Permittee shall submit test results within 60 days after completion of testing.

For testing being conducted pursuant to 40 CFR Part 60, the test report shall be submitted within 180 days after the initial startup date or within 60 days after reaching maximum production rate. [40 CFR §60.8(a)]

- C. Recurrent stack testing for NO<sub>x</sub> (firing natural gas and Oil) shall be conducted within five years from the date of the previous stack test.
- D. Stack test results shall be reported as follows: NO<sub>x</sub> lb/hr and lb/MMBtu.

**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.

**PART VII. SPECIAL REQUIREMENTS**

- A. For the permitting of the new boilers in the Main Yard Heating Plant (Permit Nos. 070-0287, -0288, -0289, -0290), the Permittee shall be utilizing internal offsets to net out of major NSR requirements. The internal offsets are from decommissioning the following existing boilers in the Main Yard Heating Plant:

Registration No. 070-0066-R: Boiler #3: 52.7 MMBtu/hr  
Registration No. 070-0067-R: Boiler #2: 79.0 MMBtu/hr  
Registration No. 070-0068-R: Boiler #1: 15.4 MMBtu/hr  
Permit No. 070-0032: Boiler #4: 55.1 MMBtu/hr

Prior to commencement of construction of the new boilers (Permit Nos. 070-0287, -0288, -0289, -0290), the Permittee shall decommission the existing boilers (Registration Nos. 070-0066-R, -0067-R, -0068-R, Permit No. 070-0032) and submit notice to the commissioner within 15 days of completion of decommissioning. Within 60 days of the decommissioning, the Permittee shall submit a *License Revocation Request* form to the Department for the existing boilers.

- B. The Permittee shall comply with all applicable sections of the following New Source Performance Standards 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.

- C. 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.

- D. 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]

- E.** 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 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; Enforcement Division; Bureau of Air Management; Department of Energy and Environmental Protection; 79 Elm Street, 5th Floor; Hartford, Connecticut 06106-5127.