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).

Owner/Operator	Electric Boat Corporation
Address	75 Eastern Point Road, Groton, CT 06340
Equipment Location	75 Eastern Point Road, Groton, CT 06340
Equipment Description	Surface Treatment Processes (Blasting and Coating Operations)
Town-Permit Numbers	070-0094
Premises Number	05
Stack Numbers	24, 29, 48, 49, 58, 59
Modification Issue Date	April 15, 2025
Prior Permit Issue Dates	June 3, 2019 July 7, 2014 August 13, 2008 May 30, 2001 July 21, 1995
Expiration Date	None

for Katherine S. Dykes
Commissioner

April 15, 2025
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

Electric Boat Corporation conducts surface preparation and coating operations in a process called Special Hull Treatment (SHT) throughout its Groton Shipyard. The processes consist of surface preparation, surface cleaning and surface coating operations on submarine hulls, components, and support equipment. The surface preparation is performed by abrasive blasting. Both solvent/aqueous cleaning and adhesive application are performed manually. Paint application is performed either manually or with spray application. The SHT materials are processed in an enclosed processor. The surface preparation and coating operations and the production of SHT materials are conducted in enclosures and/or buildings located throughout the Shipyard. The enclosures consist of a structure tower or other fixed framework that is assembled and attached to the exterior hull of the submarine or its support structures. Each enclosure is equipped with one of multiple potential independent ventilation systems which is operated one at a time. Emissions from abrasive blasting operations are controlled utilizing a number of baghouses and exhaust configurations. Multiple identical units of the baghouse models described in Part I.C of this permit may be utilized at any given time. Additionally, certain baghouses units are capable of simultaneously controlling ventilation from multiple enclosures.

B. Equipment Design Specifications

The surface treatment processes include but are not limited to surface cleaning using aqueous cleaners and solvent cleaners, surface coating using spray painting, application of adhesive and special hull treatment (SHT) materials and surface preparation using abrasive blasting.

C. Control Equipment and Stack Design Specifications

1. Unit C1-1, s1-1 (Compliance Assurance Monitoring (CAM) Unit) [Stack No. 29]
   a. Baghouse Model: 100PJD10 (or equivalent)
   b. Filter Material: Polyester Felt Media
   c. Air to Cloth Ratio (ft/min): 9.75:1
   d. Cleaning Method: Pulse Jet
   e. Maximum Gas Flowrate (scfm): 12,000 (@ 68°F)
   f. Maximum Grain Loading (grains/scf @ 68°F): Inlet 3.6, Outlet 0.036
   g. Inlet Gas Temperature (°F): 65-85
   h. CAM Plan Indicator Pressure Drop Across Unit (in H_2O): < 0.2 or > 7.2
   i. Minimum Control Efficiency (%): 99.0%

2. Unit C1-2, s1-2 (CAM Unit) [Stack No. 29]
   a. Baghouse Model: Advanced Recycling Systems Model DC45E (or equivalent)
   b. Filter Material: Cartridge Filter
   c. Air to Cloth Ratio (ft/min): 3.5:1
   d. Cleaning Method: Pulse Jet
   e. Maximum Gas Flowrate (acfm): 45,000
   f. Maximum Grain Loading (grains/scf @ 68°F): Inlet: 5 Outlet: 0.005
   g. Inlet Gas Temperature (°F): 65-85
   h. CAM Plan Indicator Pressure Drop Across Unit (in H_2O): < 0.3

i. Minimum Control Efficiency (%): 99.9%

3. Unit C1-3, s1-3 (CAM Unit) [Stack No. 29]
   a. Baghouse Model: Industrial Vacuum Equipment Corporation (or equivalent)
   b. Filter Material: Cartridge Filter
   c. Air to Cloth Ratio (ft/min): 2.4:1
   d. Cleaning Method: Pulse Jet
   e. Maximum Gas Flowrate (acfm): 6,000
   f. Maximum Grain Loading (grains/scf @ 68°F): Inlet: 15 Outlet: 0.015
   g. Inlet Gas Temperature (°F): 65-85
   h. CAM Plan Indicator Pressure Drop Across Unit (in H_2O): < 0.2 or > 7.2
   i. Minimum Control Efficiency (%): 99.9%

4. Unit C1-4, s1-4 (CAM Unit) [Stack No. 29]
   a. Baghouse Model: ABS Blast (or equivalent)
   b. Filter Material: Cellulose/Polyester
   c. Air to Cloth Ratio (ft/min): 2.5:1
   d. Cleaning Method: Pulse Jet
   e. Maximum Gas Flowrate (acfm): 10,000
   f. Maximum Grain Loading (grains/scf @ 68°F): Inlet: 5 Outlet: 0.005
   g. Inlet Gas Temperature (°F): 65-85
   h. CAM Plan Indicator Pressure Drop Across Unit (in H_2O): < 0.2 or > 7.2
   i. Minimum Control Efficiency (%): 99.8%

5. Unit C1-5, s1-5 [Stack No. 59]
   a. Baghouse Model: Donaldson Torit ADFT 4-16 C (or equivalent)
   b. Filter Material: Cartridge Filter
   c. Cleaning Method: Pulse Jet
   d. Maximum Exhaust Gas Flow Rate (scfm): 8,300
   e. Inlet Gas Temperature: Ambient
   f. Design Pressure Drop Across Unit (in H_2O): 10
   g. Minimum Control Efficiency: 99.999%

6. Unit C1-6, s1-6 [Stack No. 58]
   a. Baghouse Model: Donaldson Torit DFO 2-4 (or equivalent)
   b. Filter Material: Ultra Web Cartridge Filter
   c. Air to Cloth Ratio (ft/min): 0.63
   d. Cleaning Method: Pulse Jet
   e. Maximum Exhaust Gas Flow Rate (scfm @ 68 °F): 480
   f. Inlet Gas Temperature: Ambient
   g. Design Pressure Drop Across Unit (in H_2O): 11
   h. Minimum Control Efficiency: 99.999%

7. Unit C1-7, s1-7 (CAM Unit) [Stack No. 49]
   a. Baghouse Model: RPS Associates Dust Collector System, Model DC6000ES (or equivalent)
   b. Filter Material: Polyester Felt
   c. Cleaning Method: Pulse Jet
   d. Maximum Exhaust Gas Flow Rate (acfm): 4,200
   e. Inlet Gas Temperature: Ambient
   f. CAM Plan Indicator Pressure Drop Across Unit (in H_2O): < 0.25
   g. Minimum Control Efficiency: 99.99%

8. Unit C1-8, s1-8 [Stack No. 29] (CAM Unit)
    a. Baghouse Model: IPEC DC-30 (or equivalent)
    b. Filter Material: Polyester Felt
    c. Cleaning Method: Pulse Jet
    d. Maximum Exhaust Gas Flow Rate (acfm): 30,000
    e. Inlet Gas Temperature: Ambient
    f. CAM Plan Indicator Pressure Drop Across Unit (in H_2O): < 4
    g. Minimum Control Efficiency: 99.99%

9. Unit C1-9, s1-9 [Stack No. 48]
    a. Waterfall Curtain Model: Global Finishing Solutions #WE-101015.125-S (or equivalent)
    b. Maximum Exhaust Gas Flow Rate (acfm): 12,500
    c. Inlet Gas Temperature: Ambient
    d. Minimum Control Efficiency: 95%

10. Unit C1-10, s1-10 [Stack No. 24]
    a. Paint Spray Booth Filters
    b. Maximum Exhaust Gas Flow Rate (acfm): 10,000
    c. Inlet Gas Temperature: Ambient

11. Unit C1-11, Stack S1-11 (CAM Unit)
    a. Baghouse Model: Rapid Prep FILT-AIRE (or equivalent)
    b. Filter Media: Cellulose/Polyester
    c. Air to Cloth Ratio (ft/min): 2.3/1
    d. Cleaning Method: Pulse Jet
    e. Maximum Gas Flowrate: 20,000 acfm
    f. Inlet gas temperature: 65-85
    g. Maximum grain loading (grains/scf): 3
    h. CAM Plan Indicator Pressure Drop Across Unit (in H_2O): < 0.25
    i. Minimum Control Efficiency: 99%

12. Unit C1-12, Stack S1-12 (CAM Unit)
    a. Baghouse Model: Rapid Prep FILT-AIRE (or equivalent)
    b. Filter Media: Cellulose/Polyester
    c. Air to Cloth Ratio (ft/min): 2.4/1
    d. Cleaning Method: Pulse Jet
    e. Maximum Gas Flowrate: 12,000 acfm
    f. Inlet gas temperature: 65-85
    g. Maximum grain loading (grains/scf): 2
    h. CAM Plan Indicator Pressure Drop Across Unit (in H_2O): < 0.2
    i. Minimum Control Efficiency: 99%

13. Unit C1-13, Stack S1-13
    a. Baghouse Model: Rapid Prep Atlantic Design XL-2E (or equivalent)
    b. Filter Media: Polyester
    c. Air to Cloth Ratio (ft/min): 6.66
    d. Cleaning Method: Pulse Air
    e. Maximum Gas Flowrate: 2000 acfm
    f. Inlet gas temperature: Ambient
    g. Maximum grain loading (grains/scf): 2
    h. Pressure Drop Across Unit (in H_2O): < 0.2

i. Minimum Control Efficiency: 99.6%

PART II. OPERATIONAL CONDITIONS

Notwithstanding the design specifications or description provided in Part I, above, the Permittee of the subject source shall comply with the following operating requirements.

A. Equipment

1. There are multiple stack configurations exhausting from enclosures and/or buildings throughout the Shipyard.

   In addition to abrasive blasting operations, emissions from surface cleaning and coating operations conducted throughout the Shipyard may be vented through applicable building/enclosure exhausts or as fugitive emissions. Emission directed through a dedicated stack shall be exhausted at a minimum rate of 2,250 acfm and may not exceed the maximum allowable stack concentration for any hazardous air pollutant, in accordance with Part III.B of this permit.

2. Minimum Stack Height Above Grade (ft): 0

3. Stack Exit Temperature (°F): Ambient

B. Control Equipment

1. Unit C1-1
   a. Type: Baghouse (1 baghouse per environmental enclosure)
   b. Maximum flowrate (acfm): 12,000 per baghouse
   c. Minimum Control Efficiency: 99%

2. Unit C1-2
   a. Type: Multi-unit baghouse (servicing up to 4 enclosures at a time)
   b. Maximum flowrate (acfm): 45,000
   c. Minimum Control Efficiency: 99.9%

3. Unit C1-3
   a. Type: Baghouse (servicing up to 5 enclosures at a time)
   b. Maximum flowrate (acfm): 6,000
   c. Minimum Control Efficiency: 99.9%

4. Unit C1-4
   a. Type: Baghouse (servicing up to 4 enclosures at a time)
   b. Maximum flowrate (acfm): 10,000
   c. Minimum Control Efficiency: 99.8%

5. Unit C1-5
   a. Type: Baghouse (servicing Abrasive Blasting Room, Building 1)
   b. Maximum flowrate (scfm): 8,300
   c. Minimum Control Efficiency: 99.999%

6. Unit C1-6
    a. Type: Baghouse (servicing 1 blasting cabinet, Building 129)
    b. Maximum flowrate (scfm): 480
    c. Minimum Control Efficiency: 99.999%

7. Unit C1-7
    a. Type: Baghouse (servicing 1 blasting booth, Building 212)
    b. Maximum flowrate (acfm): 4,200
    c. Minimum Control Efficiency: 99.99%

8. Unit C1-8
    a. Type: Baghouse (1 baghouse per environmental enclosure)
    b. Maximum flowrate (acfm): 30,000
    c. Minimum Control Efficiency: 99.99%

9. Unit C1-9
    a. Type: Waterfall Curtain (servicing paint spray booth in Building 51)
    b. Maximum flowrate (acfm): 12,500
    c. Minimum Control Efficiency: 95%

10. Unit C1-10
    a. Type: Paint Spray Booth Filter (servicing paint spray booth in Building 212)
    b. Maximum Flowrate (acfm): 10,000
    c. Minimum Control Efficiency: n/a

11. Unit C1-11
    a. Type: Baghouse
    b. Maximum Flowrate (acfm) : 20,000
    c. Minimum Control Efficiency: 99%

12. Unit C1-12
    a. Type: Baghouse
    b. Maximum Flowrate (acfm) : 12,000
    c. Minimum Control Efficiency: 99%

13. Unit C1-13
    a. Type: Baghouse
    b. Maximum Flowrate (acfm): 2000
    c. Minimum Control Efficiency: 99.6%

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	tpy
PM_{10}	52.6	0.38
VOC	515	21.0

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

- Hourly particulate emission limits are based on an emissions factor of 40 lbs/ton and 131.4 tons per hour potential usage of abrasive blast media, which are the maximum uncontrolled blasting production rates that can occur simultaneously. A baghouse with a minimum particulate control efficiency of 99% is used to determine the hourly PM_{10} emission limit. Annual PM_{10} emissions shall be calculated based on the actual quantity of abrasive media used, the emission factor applicable to the specific type of abrasive media and the rated control efficiency for the baghouse in operation for each blasting event.

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.

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]

PART IV. RECORD KEEPING REQUIREMENTS

A. Monitoring

The Permittee shall monitor pressure drop across each baghouse with a CAM Plan Indicator Pressure Drop specified in Part I.C of this permit.

B. Record Keeping

1. The Permittee shall record daily cleaning solvent usage in accordance with RCSA §§22a-174-20(ii) and (jj).

2. The Permittee shall record the monthly and annual quantity of grit blast media usage, based on any consecutive 12 month period. The annual quantity shall be calculated by adding the current month's quantity to that of the previous 11 months. The Permittee shall make these calculations monthly.

3. The Permittee shall record the monthly and annual quantity of VOC-containing material used at the facility, based on any consecutive 12 month period. The annual usage shall be calculated by adding the current month's usage to that of the previous 11 months. The Permittee shall make these calculations monthly.

4. The Permittee shall record the pressure drop across each baghouse with a CAM Plan Indicator Pressure Drop specified in Part I.C of this permit at least once per day of operation.

5. The Permittee shall record the date and details of repairs and maintenance of the control equipment.

6. 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 is not required at this time.

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 operate this source and premises at all times in a manner so as not to violate or significantly contribute to a violation of any applicable state requirements for the control of fugitive dust emissions, as set forth in RCSA Section 22a-174-18(c).

PART VII. SPECIAL REQUIREMENTS

A. 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 II and A

Specifically, the Permittee shall comply with the applicable VOC/VOHAP limitations set forth therein. The limitations shall be implemented in accordance with 40 CFR §63.788, Table 2 for any marine coating defined in 40 CFR §63.782.

The Permittee shall be exempt from certain requirements of 40 CFR Part 63 Subpart II in accordance with 40 CFR §§63.781(B) through (D).

The Permittee shall maintain all records necessary to demonstrate compliance with all applicable standards for a period of five years. Records shall include any Method 24 tests, VOC content certifications, VOHAP tests, VOHAP content certifications, calculations of allowable dilution solvent usage and actual paint and dilution solvent usage by month.

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

B. 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]

C. Premises Emissions Summary

1. On January 1st of each calendar year, if the potential emissions of NOx or VOC from the premises are equal to or greater than 25 tons per year per pollutant, then for such pollutant(s), the Permittee shall:
   a. Monitor NOx and/or VOC emissions, as applicable, from the premises for such calendar year.

b. Calculate and record annual NOx and/or VOC emissions, as applicable, from the premises for such calendar year, in units of tons. The Permittee shall make these calculations on or before February 1st of the following year with respect to the previous calendar year. Such records shall include a sample calculation(s).
c. If actual NOx and/or VOC emissions, as applicable, from the premises are equal to or greater than 25 tons for such calendar year, the Permittee shall submit to the commissioner, on or before March 1st of the following year, an annual emissions summary with respect to the premises for the previous calendar year. Such summary shall be submitted on forms prescribed or provided by the commissioner.

2. A Permittee is exempt from Part VII.D.1 requirements of this permit if, on January 1st of the subject year, the premises was operating in accordance with any of the following:
   a. A valid Title V permit issued pursuant to RCSA section 22a-174-33;
   b. RCSA section 22a-174-33a; or
   c. RCSA section 22a-174-33b

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 of 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.