



**Facility Alteration or Construction Project
National Environmental Policy Act (NEPA) Review Form**
United States Environmental Protection Agency
Washington, DC 20460

I. General Information

| | | |
|---|--|--------------------------------|
| Title of Project New Hot Water Boiler System in Narragansett, Rhode Island | | Project Number 9CERD1S 5033 |
| Project Officer's Name Joseph Gillian, Registered Architect | Project Officer's Title Architect/Project Officer | Phone Number (202) 564-2169 |
| Project Location <i>(street address/city/state/ZIP code)</i> 27 Tarzwell Drive, Narragansett, Rhode Island 02882 | Conducted on EPA Facility? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <i>(if yes, provide name of facility)</i> Atlantic Ecology Division Laboratory, Narragansett, RI | |

Project Description *(attach pages as needed)*
Removal of the old boiler system (2 low pressure steam boilers each with heat input capacity of 10,461,000 BTU/hr), potential installation and operation of temporary boiler during removal/replacement, and installation of a new 94% efficient boiler system (4 natural gas boilers each with heat input capacity of 2,500,000 BTU/hr). See Attachments 1 and 2 for more information.

II. Responsible Official for NEPA Review

For projects funded and managed by the Architecture, Engineering, and Asset Management Branch (AEAMB), the Responsible Official is the Chief of AEAMB; otherwise, the Responsible Official is the individual who authorizes/funds and manages the project administratively at the Division, Regional, Program, or Facility level (e.g., Division Director, Laboratory Director).

| | | |
|-----------------------|------------------------------|--------------------------------|
| Name William Ridge | Title Branch Chief, AEAMB | Phone Number (202) 564-2165 |
|-----------------------|------------------------------|--------------------------------|

III. EPA Contact for Environmental Review on this Project (If different from Responsible Official)

| | | |
|------|-------|--------------|
| Name | Title | Phone Number |
|------|-------|--------------|

IV. Categorical Exclusion (CX)

Action is not eligible for CX. Check this box if the proposed action is not eligible for a Categorical Exclusion (CX) either because the action involves significant new construction or is considered a major project (i.e., not minor); therefore, an EA or EIS is the appropriate level of review planned. If this box is checked, skip the remainder of Section IV and complete Section V.B, *EA or EIS Determination*. If this box is not checked, answer the following questions in Sections IV.A through IV.C to document the proposed action is eligible for a CX. After completion of Section IV, obtain the Responsible Official's Signature in Section V.

IV.A. CX Eligibility (Check YES or NO) If the answer to either of the following questions is YES and no Extraordinary Circumstances are identified (determined by completing Section IV.B. of this form), then the action is eligible for a CX pursuant to 40 CFR § 6.204(a)(1). If the answer to both of the following questions is NO, it is recommended the preparer reference the attached guidelines to determine whether the action falls into one of the categorical exclusions identified under 40 CFR § 6.204(a)(2).

YES NO

- a. Does the action involve routine facility maintenance, repair, and grounds-keeping; minor rehabilitation, restoration, renovation, or revitalization of existing facilities; functional replacement of equipment; acquisition and installation of equipment; or construction of new minor ancillary facilities adjacent to or on the same property as existing facilities? (See 40 CFR §6.204(a)(1)(i)).
- b. Does the action involve: existing infrastructure systems (such as sewer systems; drinking water supply systems; and stormwater systems, including combined sewer overflow systems) that involve minor upgrading, or minor expansion of system capacity or rehabilitation (including functional replacement) of the existing system and system components (such as the sewer collection network and treatment system; the system to collect, treat, store and distribute drinking water; and stormwater systems, including combined sewer overflow systems) or construction of new minor ancillary facilities adjacent to or on the same property as existing facilities? This category does not include actions that: involve new or relocated discharges to surface or ground water; will likely result in the substantial increase in the volume or the loading of pollutant to the receiving water; will provide capacity to serve a population 30% greater than the existing population; are not supported by the state or other regional growth plan or strategy; or directly or indirectly involve or relate to upgrading or extending infrastructure systems primarily for the purposes of future development. (See 40 CFR § 6.204(a)(1)(ii)).

IV.B. Extraordinary Circumstances Evaluation (Check YES or NO) In selecting a response to the following questions, the preparer must have sufficient knowledge and/or data to support the answer with certainty. If the preparer is unsure of the answer to any of the following questions, an Environmental Professional should be consulted to conduct additional research.

YES NO

- a. Is the action known or expected to have potentially significant environmental impacts on the quality of the human environment either individually or cumulatively over time?
- b. Is the action known or expected to have disproportionately high and adverse human health or environmental effects on any community, including minority communities, low-income communities, or federally-recognized Indian tribal communities?
- c. Is the action known or expected to significantly affect federally listed threatened or endangered species or their critical habitat?

Title of Project

New Hot Water Boiler System in Narragansett, Rhode Island

Project Number

9CERD1S 5033

IV.B. Extraordinary Circumstances Evaluation Cont'd (Check YES or NO)

YES NO

- d. Is the action known or expected to significantly affect national natural landmarks or any property with naturally significant historic, architectural, prehistoric, archeological, or cultural value, including but not limited to, property listed on or eligible for the National Register of Historic Places?
- e. Is the action known or expected to significantly affect environmentally important natural resource areas such as wetlands, floodplains, significant agricultural lands, aquifer recharge zones, coastal zones, barrier islands, wild and scenic rivers, and significant fish or wildlife habitat?
- f. Is the action known or expected to cause significant adverse air quality effects?
- g. Is the action known or expected to have a significant effect on the pattern and type of land use (industrial, commercial, agricultural, recreational, residential) or growth and distribution of population, including altering the character of existing residential areas or may not be consistent with state or local government, or federally-recognized Indian tribe approved land use plans or federal land management plans?
- h. Is the action known or expected to cause significant public controversy about potential environmental impacts of the proposed action?
- i. Is the action known or expected to be associated with providing financial assistance to a federal agency through an interagency agreement for a project that is known or expected to have potentially significant environmental impacts?
- j. Is the action known or expected to conflict with federal, state or local government, or federally-recognized Indian tribe environmental resource-protection, or land-use laws or regulations?

IV.C. Extraordinary Circumstances Statement (Check ONLY ONE box) If a NO response was recorded for each of the questions in Section IV.B., then no Extraordinary Circumstances are present pursuant to 40 CFR § 6.204(b) and one of the following statements should be selected. If a YES response was indicated for one or more Extraordinary Circumstance in Section IV.B., skip this section and proceed to Section V.

- a. To the best of my knowledge and with a strong level of certainty, **no extraordinary circumstances apply** to the proposed action pursuant to 40 CFR §§ 6.204(a)(1) and 6.204(b). This statement is based on either past experience with similar actions **at the proposed action site** resulting in a CX and/or information gathered as part of previous NEPA or environmental due diligence review conducted **at the proposed action site**.
- b. A statement and supporting documentation is attached explaining why no extraordinary circumstances exist or apply to the proposed action pursuant to 40 CFR §§ 6.204(a)(1) and 6.204(b).

V. NEPA Review Determination and Responsible Official Signature

Sections I. through IV. must be completed to satisfy EPA's documentation requirements for CX eligibility. If completion of this form indicates that a CX does apply, the Responsible Official must sign under Section V.A. If completion of this form indicates that a CX does not apply, the Responsible Official must sign under Section V.B. below and indicate whether an EA or EIS is required. It is recommended that an Environmental Professional be retained or consulted to determine the appropriate level of NEPA review for the action under Section V.B.

V.A. Categorical Exclusion Determination As the Responsible Official, I have determined that this action is eligible for a **Categorical Exclusion** per the substantive environmental review requirements under EPA regulations at 40 CFR § 6.204. Section IV.C. of this form has been completed providing the required extraordinary circumstances statement.

Chris F. Adams for William Ridge Acting Chief AE/AMB 8/21/2012
 Signature of Responsible Official Title Date

V.B. EA or EIS Determination (Check the appropriate box below) This action is not eligible for a CX based on the substantive environmental review requirements under EPA regulations at 40 CFR § 6.204, therefore:

- As the Responsible Official, I have determined that an **Environmental Assessment (EA)** should be prepared for this project pursuant to the substantive environmental review requirements under EPA regulations at 40 CFR § 6.205.
- As the Responsible Official, I have determined that an **Environmental Impact Statement (EIS)** should be prepared for this project pursuant the substantive environmental review requirements under EPA regulations at 40 CFR § 6.207.

 Signature of Responsible Official Title Date

Attachment 1

NEPA Categorical Exclusion NEPA Determination and Extraordinary Circumstances Statement

New Hot Water Boiler System

Atlantic Ecology Division Laboratory
27 Tarzwell Drive, Narragansett, Rhode Island 02882
June 2012

Purpose

This document is intended to accompany the associated *Facility Alteration or Construction Project NEPA Review Form*, provides project information, offers a rationale for the level of NEPA review decision, and provides a statement explaining why no extraordinary circumstances exist for the proposed action.

Project Description

The Environmental Protection Agency (EPA) proposes to remove the existing boiler system and install a new high efficiency boiler system to serve their Atlantic Ecology Division Laboratory in Narragansett, Rhode Island, hereafter referred to as the EPA Narragansett Laboratory. The existing boiler system is considered antiquated and requires replacement. The project will include the installation of a small temporary boiler to be located in a trailer adjacent to the boiler room, removal of the two existing Cleaver-Brooks low pressure steam boilers (each having a heat input capacity of 10,461,000 BTU per hour), and the installation of four new, more efficient hot water boilers (each having a heat input capacity of 2,500,000 BTU per hour). The new boilers will burn natural gas and will be 94% energy efficient. The temporary boiler will be used only during the demolition and construction and will be removed once the new boiler system is on-line.

Finding

Based on review of the project details, the action qualifies for a Categorical Exclusion (CX) based on the category set forth under 40 CFR § 6.204(a)(1)(i), allowing for functional replacement of equipment as part of the restoration, renovation, or revitalization of existing facilities. The action involves the replacement of the existing boiler system with a more efficient system that will have lower air emissions. Because the air emissions footprint will not increase as a result of the boiler replacement, this action is considered an in-kind replacement of previously installed equipment.

In addition, it was determined in consultation with the State of Rhode Island Department of Environmental Management (RIDEM) that the new boiler system does not require an air emissions permit for operation. Correspondence with the RIDEM regarding the air permit review and regulatory requirements are provided as Attachment 2.

Extraordinary Circumstances

Under the regulatory requirement of 40 CFR §6.204(b), an action must be reviewed to determine whether extraordinary circumstances exist before the action is considered eligible for a CX. No extraordinary circumstances exist or apply to the proposed action, as described below.

- *Human health or the environment* – the action involves the in-kind replacement of a boiler system with a new system that is more efficient and produces fewer emissions, therefore does not have a potential to cause a greater impact to human health or the environment.
- *Environmental Justice* – the EPA Narragansett Laboratory is established in the community and the action itself will not change the footprint or use of the facility and does not have a potential to negatively impact the greater community.
- *Threatened and Endangered Species* – The action does not impact any area outside the footprint of the existing building, therefore does not have a potential to impact threatened or endangered species or their critical habitat.
- *Historical and Cultural Resources* – The action will be conducted within the interior of the building, which is not listed on the National Register of Historic Places (<http://nrhp.focus.nps.gov>).
- *Natural Resource Areas* – The action does not involve the disturbance of undeveloped areas, therefore does not have a potential to impact natural resource areas.
- *Air Quality* – The action involves the replacement of an existing boiler with a modern 94% efficient boiler system. This system will create less air emissions than the previous system and will not require an air permit for operation. Correspondence with the regulatory authorities, RIDEM, regarding the air permit review and applicable regulatory requirements are provided in Attachment 2.
- *Land Use* – The action consists of equipment replacement and will not alter the use of the property in any way.
- *Public Controversy* – The action will be conducted within the building interior; does not include disturbances of sight-lines or land use; and will not result in increased traffic, noise, or pollution. Because this action has minimal or no effect to the public, it is not expected to cause public controversy.
- *Interagency Agreements* – This action is not associated with any interagency agreement.
- *Environmental Resource and Land-use Laws and Regulations* – The action involves the replacement of equipment that is currently at the facility. The facility has been established for many years and is currently in compliance with state and federal environmental resource and land use regulations. The action will not conflict with or change land use.

Attachment 2

A Review of the Air Quality Regulations for the New Hot Water Boiler System Project at EPA's National Health & Environmental Effects Research Laboratory (NHEERL) Atlantic Ecology Division, Narragansett, Rhode Island

Executive Summary

Booz Allen Hamilton was tasked to review federal, state, and local air quality regulations applicable to the new hot water boiler system project at EPA's NHEERL Atlantic Ecology Division (hereafter referred to as the EPA Narragansett Facility). The task objective was to determine whether air quality regulatory standards or air permit requirements apply to the new boiler system installation at the EPA Narragansett Facility.

The Booz Allen team reviewed the following regulations to identify applicable boiler regulatory standards and permit requirements:

Federal Regulations

- National Emission Standards for Hazardous Air Pollutants (NESHAP) for Major and Area Sources Industrial/Commercial/Institutional Boilers and Process Heaters in 40 CFR Part 63
- New Source Performance Standards (NSPS) in 40 CFR Part 60
- New Source Review

State Regulations

- Rhode Island Air Pollution Control Regulation No. 9 – Air Pollution Control Permits

The Town of Narragansett and Washington County do not have local air quality requirements or codes.

Based on the results of this review, no air quality permitting actions are required for the new hot water boiler system project under federal, state, or local air quality regulations. However, if the specifications summarized in the Assumptions section of this report change substantially, this finding may no longer apply.

Background

In 2004, a sustainable site master plan was developed for the EPA Narragansett Facility to reduce the facility's environmental impact. One aspect of the plan was to replace the two Cleaver-Brooks low pressure steam boilers (each having a heat input capacity of 10,461,000 British Thermal Units (Btu)/hr) with four new, more energy efficient hot water boilers (each having a heat input capacity of 2.5 million Btu/hr). The new boilers will burn natural gas and be 94% energy efficient.

Assumptions

The following assumptions were derived from conversations with EPA representatives and from the *EPA NHEERL Atlantic Ecology Division Steam-to-Hot Water Conversion MEP/FP Existing Condition Summary and Design Narrative*, April 3, 2012, written by the AKF Group:

- Four new boilers will be installed and the two existing boilers will be removed.
- The new boiler system includes four firetube condensing boilers each with a heat input capacity of 2.5 million Btu/hr.
- The boiler system will be the same or equivalent to a Cleaver-Brooks Clearfire Model CFC 2500.
- The new boilers will run exclusively on gaseous fuel; no standby diesel fuel will be used.
- A temporary, rental, low pressure steam boiler located outdoors on a flatbed trailer may be used to backfeed the existing low pressure steam header allowing for the demolition of the existing boilers. The rated heat capacity of the temporary boiler would be no more than 2 million Btu/hr.

Using the above assumptions, the potential to emit (PTE) for each boiler was estimated using *EPA's AP-42, Fifth Edition, Compilation of Air Pollutant Emission Factors*, Chapter 1.4-Natural Gas Combustion (July 1998). The table below shows the PTE for each boiler and the combined PTE (i.e., total) for all the boilers. The PTE was used to determine applicability with the regulations discussed below. The formulas used to calculate the individual and total PTE can be provided upon request and are also presented in the EPA's AP-42 cited above.

Estimated PTE for the New Proposed Gas-Fired Boilers

| Pollutant | PTE for each new boiler (tons per year (tpy)) | Total PTE of all four new boilers operating at the same time (tpy) |
|---|--|---|
| Nitrogen Oxide (NO_x) | 1.07 | 4.29 |
| Carbon Monoxide (CO) | 0.90 | 3.61 |
| Total Filterable Particulate Matter (PM_{total}) | 0.08 | 0.33 |
| Volatile Organic Compounds (VOC) | 0.06 | 0.24 |
| Sulfur Dioxide (SO₂) | 0.01 | 0.03 |

Federal and State Air Quality Requirements

National Emission Standards for Hazardous Air Pollutants for Major Sources-Industrial, Commercial, Institutional Boilers and Process Heaters (40 CFR Part 63, Subpart DDDDD)

On March 21, 2011, EPA issued a final rule to *regulate* emissions of hazardous air pollutants (HAP) from industrial, commercial, and institutional boilers and process heaters located at major sources of HAP emissions (the “Major Source Boiler MACT”). Under the Major Source Boiler MACT regulation, sources that emit or have the PTE 10 tpy or more of any single air toxic or 25 tpy or more of any combination of air toxics are considered major sources. Major sources that have new and existing boilers with a designed heat input capacity of 10 million Btu/hr must comply with designated emission limitations for hydrogen chloride, mercury, carbon monoxide, and particulate matter. There are 14 different subcategories of boilers and process heaters, based on unit design, listed in 40 CFR Part 63, Subpart DDDDD of the proposed rule that must comply with designated emissions limits. There are also three subcategories that do not have to comply with the emission limits, but must comply with work practice standards. Boilers that have a heat input of less than 5 million Btu/hr, burn natural gas, and are located at a major source are required to show compliance with the work practice standard by performing tune-ups of the boiler every five years.

On December 23, 2011, EPA issued a proposed rule to provide the public additional opportunity to comment on items not previously listed in the original proposed rules. The proposed rule also includes a number of proposed amendments and technical corrections to the final rule. EPA plans on finalizing the reconsideration by Spring of 2012.

The four boilers would not be considered a major source since the PTE does not meet the thresholds of greater than 10 tpy of a single air toxic or greater than 25 tpy of a combination of air toxics. Therefore, the EPA Narragansett Facility does not need to comply with the work practice standards in this Major Source Boiler MACT rule.

National Emission Standards for Hazardous Air Pollutants for Area Sources: Industrial, Commercial, Institutional Boilers and Process Heaters (40 CFR Part 63, Subpart JJJJJ)

On March 21, 2011, the EPA finalized the Area Source Boiler MACT. The purpose of this rule is to *reduce* emissions of toxic air pollutants from existing and new industrial, commercial, and institutional boilers located at area source facilities. An area source facility is defined as emitting or having the potential to emit less than 10 tons per year (tpy) of any single air toxic or less than 25 tpy of any combination of air toxics. Under the Area Source Boiler MACT, boilers that burn coal, oil, biomass, or other solid and liquid non-waste materials and are located at an area source must meet emission limits for mercury, carbon monoxide, and particulate matter. Boilers that are natural gas fired are not required to meet the requirements of 40 CFR Part 63, Subpart JJJJJ.

On December 23, 2011, EPA issued a proposed rule to provide the public additional opportunity to comment on items not previously listed in the original proposed rules. The proposed rule also includes a number of proposed amendments and technical corrections to the final rule. EPA plans on finalizing the reconsideration by Spring of 2012.

Since the four new boilers that will be installed at the EPA Narragansett Facility are gas-fired boilers, this Area Source Boiler MACT regulation does not apply.

New Source Performance Standards (NSPS)

New Source Performance Standards (NSPS) regulate air emissions from many types of industrial facilities. A complete list can be found in 40 CFR Part 60. All industries subject to NSPS must meet certain requirements such as emission limits, compliance requirements, and test methods and procedures. One of the sources regulated are steam generating units that have a heat input capacity of 100 million Btu/hr or less, but greater than 10 million Btu/hr using any type of fuel.

Each of the four boilers that will be installed at the EPA Narragansett Facility have a rated heat input capacity of 2.5 million Btu/hr, therefore are not subject to NSPS standards individually or combined as per Booz Allen's conversation and email correspondence with the Rhode Island Department of Environmental Management (RIDEM) representative.

New Source Review (NSR)

The NSR requires that permits be obtained before starting construction of stationary sources of air pollution. The three types of NSR permitting requirements a source may have to comply with are:

1. Prevention of Significant Deterioration (PSD) permits - required for new major sources or a major source making a major modification in an attainment area
2. Nonattainment NSR permits - required for new major sources or major sources making a major modification in a nonattainment area
3. Minor source permits.

Sources subject to NSR must meet emission limits using best-available emission control technology. The EPA Narragansett Facility is not a major source; therefore, PSD and nonattainment NSR permits are not applicable to the new boiler system. The minor source permit does not apply either as per the Rhode Island Air Pollution Control Regulation No. 9 discussed below because the new boilers are below the 100 million Btu/hr threshold.

Rhode Island Air Pollution Control Regulation No. 9 - Air Pollution Control Permit

Rhode Island Air Pollution Control Regulation No. 9 states that no person shall construct, modify or install a stationary source(s) without first obtaining either a minor or major source permit. A minor source permit is required for any of the following fuel burning devices:

- Residual oil or solid fossil fuel having a heat input capacity of 1 million Btu or more per hour;
- All other liquid fuels having a heat input capacity of 5 million Btu or more per hour;
- Gaseous fuel having a heat input capacity of 10 million Btu or more per hour; or
- Alternative fuels having a heat input capacity of 1 million Btu or more per hour.

Fuel burning devices with a heat input below the minor source threshold are not required to obtain a minor source permit. Each of the four boilers that will be installed at the EPA Narragansett Facility have a rated heat input capacity of 2.5 million Btu/hr, therefore the boilers are not subject to Regulation No. 9. Furthermore, the temporary boiler that may be used during the new hot water boiler system project also will not require a minor source permit. Booz Allen confirmed and documented this conclusion with Ms. Ruth Gold, Principal Air Quality Specialist with the RIDEM in the attached email correspondence dated May 25, 2012.

Conclusion

Based on the assumption that the existing two 10,461,000 Btu/hr boilers will be replaced with four 2.5 million Btu/hr boilers burning natural gas, the EPA Narragansett Facility is not required to obtain a minor source permit with the RIDEM. A permit is also not required for the temporary boiler that will operate during the construction process. However, as per the RIDEM Principal Air Quality Specialist, EPA should notify RIDEM Office of Air Resources after removing and replacing the current boiler system and installing the new boiler system. In addition, there are no federal, Town of Narragansett, or Washington County permitting requirements applicable to the installation of the new boilers at the EPA Narragansett Facility.

From: Ruth Gold
Sent: Friday, May 25, 2012 9:19 AM
To: Campbell, Gretchen [USA]
Subject: RE: Minor source permit questions for new boiler installation

Hi Gretchen,

You are correct in your understanding of our conversation. Under the Office of Air Resources' Regulation No. 9, a permit is required for a natural gas fired device that has a heat input capacity of 10 million Btu or more per hour. The applicability is for each unit individually, not collectively. This also carries over to temporary permits. I've included sections from Regulation No. 9 for your reference.

9.3.1 Applicability

A Minor source permit is required for the construction, installation or modification of the following:

- (a) Any fuel burning device designed to burn:
 - (1) Residual oil or solid fossil fuels having a heat input capacity of one million Btu or more per hour;
 - (2) All other liquid fuels having a heat input capacity of five million Btu or more per hour;
 - (3) Gaseous fuel having a heat input capacity of ten million Btu or more per hour.

9.3.7 Temporary Permits

- (a) A stationary source that is required to obtain a minor source permit under subsection 9.3.1 may apply for a temporary permit.

If you need further information, please contact me.

Ruth A. Gold

Principal Air Quality Specialist
RI Department of Environmental Management
Office of Air Resources