



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	PSEG Power Connecticut LLC – Bridgeport Harbor Station
Address	1 Atlantic Street, Bridgeport, CT 06604
Equipment Location	1 Atlantic Street, Bridgeport, CT 06604
Equipment Description	80 MMBtu/hr Victory Energy Natural Gas Fired Boiler with Ultra Low NOx Burners and Flue Gas Recirculation
Town-Permit Numbers	015-0300
Premises Number	045
Stack Number	18
Prior Permit Issue Date	April 11, 2017
Permit Issue Date	March 27, 2018
Expiration Date	None

/s/Robert E. Kaliszewski
Robert E. Kaliszewski
Deputy Commissioner

3/27/2018
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

The main purpose of the 80 MMBtu/hr (HHV) natural gas fired boiler is to produce auxiliary steam to provide certain heating functions prior to and during startups in order to allow shorter startup time durations.

B. Equipment Design Specifications

1. Fuel Type: Natural gas
2. Maximum Fuel Firing Rate: 78,000 scf/hr
3. Maximum Gross Heat Input: 80 MMBtu/hr (HHV)
4. Maximum Steam Flow: 64,675 lb/hr (Gross, at 100% steam load)

C. Control Equipment Design Specifications

1. Ultra Low NOx Burner/Flue Gas Recirculation
 - a. Make and Model: John Zink Hamworthy Combustion/C-RMB Burner

D. Stack Parameters

1. Minimum Stack Height: 160 ft
2. Minimum Exhaust Gas Flow Rate: 22,768 acfm (At typical operation of 98% steam load)
3. Minimum Stack Exit Temperature: 299 °F (At typical operation of 98% steam load)
4. Minimum Distance from Stack to Property Line: 400 ft

PART II. OPERATIONAL CONDITIONS

A. Equipment

1. Maximum Fuel Consumption over any Consecutive 12 Month Period: 687 MMscf
2. Maximum Fuel Sulfur Content: 0.5 grains/100 scf
3. The Permittee shall operate and maintain the boiler/control equipment in accordance with manufacturer's specifications and written recommendations.
4. The Permittee shall properly operate the flue gas recirculation (FGR) system at all times that this equipment is in operation and emitting air pollutants.

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 and Non-Criteria Pollutants

Pollutant	lb/hr	Other Units	TPY
PM/ PM ₁₀ / PM _{2.5}	0.48		2.1
SO ₂	0.12		0.5
NO _x	0.72	7.0 ppmvd@3% O ₂	3.2
VOC	0.32	0.004 lb/MMBtu	1.4
CO	2.88	50 ppmvd@3% O ₂	12.6
Pb	3.9 E-05		1.7E-4
H ₂ SO ₄	0.02		0.08
CO _{2e}	9,368	117 lb/MMBtu	41,031

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 §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 Part 60, Appendix A, Reference Method 9.

D. Demonstration of compliance with the above emission limits may be met by calculating the emission rates using the most recent approved stack test results for that pollutant, or if unavailable, emission factors from the following sources:

- NO_x, CO, VOC: stack testing data
- PM₁₀: Guaranteed Vendor Emissions Factor
- Opacity: Stack Test Data
- SO₂, H₂SO₄: Calculated from fuel sulfur content
- Pb: AP-42, Table 1.4-2, July 1998
- CO_{2e}: 40 CFR Part 98, Tables A-1 (Dec 2014), C-1 and C-2 (Nov 2013)

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 to the boiler using a non-resettable totalizing fuel meter.

2. The Permittee shall perform inspections of the low NO_x burners and flue gas recirculation system as recommended by the manufacturer.

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 calculate and record the monthly and consecutive 12 month PM, PM₁₀, PM_{2.5}, SO₂, NO_x, VOC, CO, Pb, H₂SO₄ and CO_{2e} 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 within 30 days of the end of the previous month.
3. The Permittee shall keep records of the fuel quality characteristics in a current, valid purchase contract, tariff sheet or transportation contract for the fuel specifying the maximum total sulfur content for the natural gas or periodic fuel sampling, to show compliance with the limit in Part II of this permit.
4. The Permittee shall make and keep records of all maintenance and tune-up activities for the boiler.
5. The Permittee shall make and keep records of all inspections of the low NO_x burners and flue gas recirculation system.
6. The Permittee shall make and keep records of manufacturer written specifications and recommendations for operation and maintenance.
7. The Permittee shall keep records of stack testing reports.
8. 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

The Permittee shall notify the commissioner, in writing, of the date of commencement of construction and the date of initial startup of the boiler. Such written notification shall be submitted no later than 30 days after the subject event. The Permittee shall submit the above notifications to the Supervisor of the Compliance Analysis & Coordination Unit, Enforcement Section, Bureau of Air Management; Department of Energy and Environmental Protection; 79 Elm Street, 5th Floor; Hartford, Connecticut 06106-5127.

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 PM₁₀ PM_{2.5} SO₂ NO_x CO
 VOC Opacity Other (HAPs):

- A. 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 30 days after completion of testing.
- B. Recurrent stack testing for the above pollutants shall be conducted within five years from the date of the previous stack test or when it was due.
- C. Stack test results shall be reported as follows:
 - 1. All pollutants in units of lb/hr.
 - 2. NO_x and CO in ppmvd at 3% O₂.
 - 3. Opacity: %.
 - 4. VOC: lb/MMBtu.

PART VI. 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 Subpart A – General Provisions

Title 40 CFR Part 60 Subpart Dc – Standards of Performance for Small Industrial Commercial-Institutional Steam Generating Units

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 §22a-174-23. [STATE ONLY REQUIREMENT]
- C. 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 §§22a-69-1 through 22a-69-7.4. [STATE ONLY REQUIREMENT]
- D. The Permittee shall resubmit for review and approval a Best Available Control Technology (BACT) analysis if such construction or phased construction has not commenced within the 18 months following the commissioner's approval of the current BACT determination (i.e., the date of this permit) for such construction or phase of construction. [RCSA §22a-174-3a(i)(4)]

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