

US EPA ARCHIVE DOCUMENT



United States
Environmental Protection
Agency New England

One Congress Street, Suite 1100
Boston, MA 02114

Prevention of Significant Deterioration Air Permit

issued to the

Dominion Energy Brayton Point, LLC

**1 Brayton Point Road
Somerset, MA 02726**

for the

**Brayton Point Station
PSD Permit Number
052-120-MA15**

Pursuant to the provisions of the Clean Air Act (CAA), Subchapter I, Part C (42 U.S.C. Section 7470, *et. seq.*), and the Code of Federal Regulations (CFR) Title 40, Section 52.21, the United States Environmental Protection Agency-New England (EPA) is issuing a *Prevention of Significant Deterioration* (PSD) air quality permit to Dominion Energy Brayton Point, LLC (Dominion). Dominion operates an existing 1,600 megawatt fossil-fueled fired power station known as the Brayton Point Station (Facility) located at 1 Brayton Point Road, Somerset, Massachusetts. The permit applies to the construction and operation of a Dry Scrubber and Fabric Filter (DS/FF) emission control system on the facility's Unit #3 boiler.

The design, construction and operation of DS/FF shall be subject to the attached permit conditions and permit limitations. This Permit is valid only for the equipment described herein and as described in an August 28, 2008 PSD permit application and a January 9, 2009 supplemental PSD application submitted to EPA under 40 CFR 52.21. This permit shall be effective upon signature and shall remain in effect until it is surrendered to EPA. This permit becomes invalid if Dominion does not commence construction within 18 months after the date of signature. EPA may extend the 18-month period upon a satisfactory showing that an extension is justified. This permit does not relieve Dominion from the obligation to comply with applicable state and federal air pollution control rules and regulations.

Lynne Hamjian, Acting Director
Office of Ecosystem Protection

10/7/09

Date of signature

Environmental Protection Agency - New England

Prevention of Significant Deterioration Air Permit

Dominion Energy Brayton Point, LLC Brayton Point Station

Background for informational purposes:

Dominion currently operates the Brayton Point facility at One Brayton Point Road, Somerset, Massachusetts. On August 28, 2008, Dominion submitted a PSD permit application to the U.S. EPA to construct and operate a DS/FF control system on the facility's existing Unit # 3 boiler. This application was significantly revised in a January 9, 2009 submittal. The Unit #3 boiler is a 650 mega-watt (MW) supercritical, once-through double reheat wall-fired generating unit that burns coal as its primary fuel, supplemented with No. 6 fuel oil or natural gas. The DS will control Sulfur Dioxide (SO₂) emissions from Unit #3. The FF and an existing electrostatic precipitator will control the particulate matter (PM) emissions from Unit #3. The FF will also control lime regent, powder activated carbon and DS byproduct (calcium sulfite/sulfate) emitted from the DS and Unit #3's mercury control system. The DS/FF will result in a significant emission increase of Particulate Matter less than 2.5 micrometers (PM_{2.5}) and Particulate Matter less than 10 micrometers (PM₁₀) and is a major modification for these pollutants at the facility.

Permit Terms and Conditions:

I. Emission Limitations

The owner/operator shall not discharge or cause to discharge into the atmosphere in excess of the following emission limits from Unit #3:

1. PM_{2.5} - Filterable emissions only: 0.010 pounds per million British thermal units (0.010 lbs/MMBtu) and 56.6 lbs per hour (lbs/hr). The mass emission limit is based on a one hour average.

2. Total PM_{2.5} - Filterable and Condensable emissions: 0.025 lbs/MMBtu and 141.4 lbs/hr. The mass emission limit is based on a one hour average.
3. PM₁₀ - Filterable emissions only: 0.010 lbs/MMBtu and 56.6 lbs/hr. The mass emission limit is based on a one hour average.
4. Total PM₁₀ - Filterable and Condensable emissions: 0.025 lbs/MMBtu and 141.4 lbs/hr. The mass emission limit is based on a one hour average.

II. Operational Conditions

1. The owner/operator shall operate the FF at all times while Unit # 3 is in operation.
2. The Unit #3 heat input shall not exceed 5,655 MMBtu/hr (24-hour block average).

III. Monitoring Requirements

1. The owner/operator shall monitor heat input on an hourly basis for Unit # 3 using the methods prescribed in 40 CFR Part 75.
2. The owner/operator shall continuously monitor the Unit #3 FF pressure drop.
3. The owner/operator shall continuously monitor the Unit #3 exhaust temperature at the inlet of the FF.
4. The owner/operator shall continuously monitor the amount of reagent used by the DS.

IV. Testing Requirements

1. The owner/operator shall ensure that all stack and exhaust ducts will accommodate the emission testing requirements stipulated in 40 CFR Part 60, Appendix A.
2. The owner/operator shall complete the following performance testing of Unit #3 within 90 days after accepting the DS/FF equipment pursuant to the contract with

its vendor or within 12 months of initial start-up of the DS/FF, whichever is earlier, and at least once in every 12 month period thereafter.

- a. Testing for filterable PM_{10} and $PM_{2.5}$ emission limits shall be conducted in accordance with 40 CFR 51, Appendix M, Method 201 or 201A or other test methods approved by EPA.
 - b. Testing for total PM_{10} and $PM_{2.5}$ emission limits shall be conducted in accordance with 40 CFR 51, Appendix M, Method 201 or 201A and Method 202 or other test methods approved by EPA.
 - c. Testing for volumetric flow rate and velocity shall be conducted by 40 CFR 60, Appendix A, Method 2, 2F, or 2G.
3. The owner/operator shall notify EPA of the tests in writing and provide EPA with a test protocol at least 45 days prior to such tests. The test protocol shall include a detailed description of sampling port locations, sampling equipment, sampling and analytical procedures, and operating conditions for any such emissions testing on Unit 3. The owner/operator shall revise the plan upon EPA request.
 4. Within 45 days after the completion of the tests required above, a preliminary report of the test results shall be submitted to EPA. The test report shall indicate:
 - a. the filterable and total PM_{10} and $PM_{2.5}$ emissions in lbs/MMBtu and lbs/hr.
 - b. the heat input for the Unit # 3 boiler in MMBtu/hr.
 5. The owner/operator shall submit the final emissions test report(s) to the EPA-Region 1 within 60 days after the completion of each of the tests.

V. Record Keeping Requirements

1. The owner/operator shall maintain a record of all information used to show compliance with the terms and conditions of this permit for five years in a location accessible to representatives of EPA and the Massachusetts Department of Environmental Protection.
2. The owner/operator shall maintain, at a minimum, the following information:

- a. Hourly heat input information obtained from 40 CFR Part 75 requirements.
 - b. Supporting documentation and results from all emission performance tests.
 - c. Number of hours Unit #3 operated for each day.
 - d. Number of hours the FF operated for each day.
 - e. Daily reagent usage in lbs/day.
 - f. Continuous measurement of the pressure drop across the FF.
 - g. Continuous measurement of the flue gas temperature at the inlet of the FF.
 - h. For each day, the hourly filterable and total PM₁₀ and PM_{2.5} emissions on an lbs/hr basis. Hourly emissions will be calculated by multiplying the results from the most recent stack test by the hourly heat input.
3. The owner/operator shall comply with any request by EPA to supply any of the above records.

VI. Reporting Requirements

1. The owner/operator shall submit all notifications and reports required by this permit to the address listed in Section XIII below.
2. The owner/operator shall submit to EPA Region 1 semi-annual reports postmarked by January 30th and July 30th of each year. Each semi-annual report shall contain the following information from the prior calendar 6-month period:

- a. Unit #3 rolling 12-month filterable and total PM emission rates using data collected in Section V.2;
- b. Date and time of all emission limit and permit condition violations; and
- c. All equipment malfunctions and corrective actions.

VII. General Requirements

1. The owner/operator shall affix a copy of this permit in the control room.
2. After the occurrence of any upset or malfunction to Unit #3 equipment or control devices that may result in a violation of any emission limitation or condition contained herein, the owner/operator must notify EPA Region 1, Office of Environmental Stewardship, attention Compliance and Enforcement Chief, by FAX at (617) 918-0905 within two business days, and subsequently in writing to the address listed in Section XIII below within seven calendar days or by e-mail to : R1.AirReports@epa.gov.

VIII. Right of Entry

The owner/operator shall allow all authorized representatives of EPA, upon presentation of credentials, to enter upon or through the facility where records required under this permit are kept. The owner/operator shall allow such authorized representatives, at reasonable times:

- a. To access and copy any records that must be kept under this permit;
- b. To inspect any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit; and
- c. To monitor substances or parameters for the purpose of assuring compliance with this permit.

IX. Transfer of Ownership

In the event of any changes in control or ownership of the Dominion facility, this permit

shall be binding on all subsequent owners and operators. The owner/operator shall notify the succeeding owner and operator of the existence of this permit and its conditions. Notification shall be by letter with a copy forwarded to the EPA.

X. Severability

The provisions of this permit are severable, and if any provision of the permit is held invalid, the remainder of this permit will not be affected thereby.

XI. Other Applicable Regulations

The owner/operator shall construct and operate the Unit #3 DS/FF in compliance with all other applicable provisions of federal and state regulations.

XII. Credible Evidence

For the purpose of submitting compliance certifications or establishing whether or not the owner/operator has violated or is in violation of any provision of this permit, the methods used in this permit shall be used, as applicable. However, nothing in this permit shall preclude the use, including the exclusive use, of any credible evidence or information, relevant to whether the owner/operator would have been in compliance with applicable requirements if the appropriate performance or compliance test procedures or methods had been performed.

XIII. Agency Addresses

All correspondence required by this permit shall be forwarded to the following address or other address specified in writing by EPA.

Air Compliance Clerk
U.S. EPA Region 1
One Congress Street
Suite 1100-SEA
Boston, MA 02114-2023