

US EPA ARCHIVE DOCUMENT



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-MA14

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 two new natural draft Cooling Towers.

The design, construction and operation of the Cooling Towers 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 30 days after the date of 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.

Ken Moraff, Acting Director
Office of Ecosystem Protection

4/2/09

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 new dry scrubber and fabric filter on the Unit # 3 boiler and two new natural draft Cooling Towers #1 and #2 at the existing Brayton Point facility. This application was significantly revised in a January 9, 2009 submittal. This permit applies to Cooling Towers #1 and 2. The Cooling Towers are part of a closed cycle cooling system that Dominion is installing at the Brayton Point facility. The Cooling Towers project will result in a significant emission increase of Particulate Matter less than 2.5 micrometers and Particulate Matter less than 10 micrometers and is a major modification for these pollutants at the facility.

Permit Terms and Conditions

I. Emission Limitations

1. The owner/operator shall not discharge or cause to discharge into the atmosphere in excess of the following emission limits for Cooling Tower #1:
 - a. Particulate Matter less than 2.5 micrometers ($PM_{2.5}$) (24-hour block average): 1,066 lbs
 - b. Particulate Matter less than 10 micrometers (PM_{10}) (24-hour block average): 1,066 lbs
2. The owner/operator shall not discharge or cause to discharge into the atmosphere in excess of the following emission limits for Cooling Tower #2:
 - a. $PM_{2.5}$ (24-hour block average): 1,066 lbs
 - b. PM_{10} (24-hour block average): 1,066 lbs

II. Monitoring Requirements

1. The owner/operator shall determine the Cooling Towers #1 and #2 total dissolved solids in parts per million by weight (ppm_w) using continuous conductivity monitors.
2. The owner/operator shall determine the Cooling Towers #1 and #2 circulating water flow rate using pump curves supplied by the manufacturer or pump curves established through testing by the owner/operator.
3. The owner/operator shall obtain guarantees from the drift eliminator vendor that show the drift eliminators installed in Cooling Towers #1 and #2 will meet a drift rate of 0.0005%.
4. The owner/operator shall install and maintain non-resettable elapsed operating hour meters or equivalent software to accurately indicate the elapsed operating time of Cooling Towers #1 and #2 circulating water pumps.
5. The owner/operator shall install, maintain and calibrate in accordance with the manufacturer's recommendations conductivity monitors for the circulating water or blowdown water in Cooling Towers #1 and #2.
6. The owner/operator shall inspect Cooling Towers #1 and #2 from the internal walkways not less than every three months to assure that the drift eliminators are clean and in good working order and shall keep records of the inspection. Not less than once per calendar year, the owner/operator shall conduct a complete inspection of the towers using an inspector with recognized expertise in the field of natural draft cooling tower drift eliminators and shall keep records of the inspection, including the inspector's resume or credentials.
7. The owner/operator shall determine PM_{2.5} emissions and PM₁₀ emissions for each cooling tower using the following equation. Dominion shall obtain the information for the Total Circulating Water Flow Rate from data obtained from Section II.2. Dominion shall obtain the information for the Total Dissolved Solids from Section II.1.

Cooling tower emissions in pounds/hour (lb/hr) = Total Circulating Water Flow Rate (gallons/minute) x 60 (minutes/hour) x Drift Rate (0.0005%) x Density Water (8.57 pounds/gallon) x Total Dissolved Solids (ppm_w)/1,000,000

III. Recordkeeping 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. For Cooling Towers #1 and #2, the owner/operator shall maintain, at a minimum, the following information:
 - a. Hours of operation of each circulating water flow pump for each operating day.
 - b. For each 24 hour time block, an average of the circulating water flow rate in gpm.
 - c. Continuous readings of total dissolved solids in the circulating water.
 - d. Quarterly and annual drift eliminator inspection records, including certification as to whether the drift eliminators are properly installed and in good working order.
 - e. Monitoring equipment design data, maintenance, and repair information, including dates and times of repairs or maintenance.
 - f. For each operating day, record total PM_{2.5} and PM₁₀ emissions.
3. The owner/operator shall maintain the following records for the control and monitoring equipment on the Cooling Towers. For purposes of this permit, a malfunction is a sudden and reasonably unforeseeable failure that results in the possible exceedance of the emission limits or conditions in this permit:
 - a. Periods of malfunctions including, at a minimum, the date and time the malfunction occurred;
 - b. A description of the malfunction and the corrective action taken;
 - c. The date and time corrective actions were initiated; and
 - d. The date and time corrective actions were completed and the repaired equipment was returned to compliance.
4. The owner/operator shall comply with any request by EPA to supply any of the above records.

IV. Reporting Requirements

1. The owner/operator shall submit all notifications and reports required by this permit to the address listed in Section XI below.
2. After either Cooling Tower #1 or #2 commences operation, the owner/operator shall submit to EPA New England 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. Cooling Towers #1 and #2 rolling 12-month total PM_{2.5} and PM₁₀ emission rates using data reported in Section III.2;
 - b. Date and time of all emission limit and permit condition violations; and
 - c. All equipment malfunctions and corrective actions.

V. 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 Cooling Towers #1 or #2 equipment or control devices that may result in a violation of any emission limitation or condition contained herein, the owner/operator must notify EPA New England, 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 XI below within seven calendar days or by e-mail to: R1.AirReports@epa.gov.

VI. 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.

VII. 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 EPA.

VIII. 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.

IX. Other Applicable Regulations

The owner/operator shall construct and operate Cooling Towers #1 and #2 in compliance with all other applicable provisions of federal and state regulations.

X. 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.

XI. Agency Addresses

All correspondence required by this permit shall be forwarded to:

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