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
Draft PSD Permit Number
052-120-MA13

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 and the two new natural draft Cooling Towers.

The design, construction and operation of DS/FF and two 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, 2009 supplemental PSD application submitted to EPA under 40 CFR 52.21. This permit shall be effective 30 days after the date of signature or, if no comments requesting a change in the draft permit are received, shall be effective immediately 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.

_____ _____

Stephen S. Perkins, Director
Office of Ecosystem Protection

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 existing 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. 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 (SO_2) 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, power activated carbon and DS byproduct (calcium sulfite/sulfate) emitted from the DS and Unit #3's mercury control system. Cooling Towers # 1 and # 2 will be used to convert the Facility to a closed cycle cooling system. The combination of the new DS/FF and Cooling Towers ("the Project") is a major modification to 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 from Unit #3:

    a. Particulate Matter less than 2.5 micrometers ($PM_{2.5}$): 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.

    b. Total $PM_{2.5}$: 0.025 lbs/MMBtu and 141.4 lbs/hr. The mass emission limit is based on a one hour average.

    c. Particulate Matter less than 10 micrometers ($PM_{2.5}$): 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.

d. Total PM_{10}:
0.025 lbs/MMBtu and 141.4 lbs/hr. The mass emission limit is based on a one hour average.

e. Subject to the provisions of section XII, compliance with the $PM_{2.5}$ and PM_{10} concentration based emission limits for Unit #3 shall be determined by the test methods contained in section IV of this permit.

2. 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. PM_{10} (24-hour block average): 1,066 lbs

b. $PM_{2.5}$ (24-hour block average): 1,066 lbs

3. 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_{10} (24-hour block average): 1,066 lbs

b. $PM_{2.5}$ (24-hour block average): 1,066 lbs

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)

3. Cooling Tower #1 circulating water flow shall not exceed 400,000 gallons per minute (GPM) (24-hour block average).

4. Cooling Tower #2 circulating water flow shall not exceed 400,000 GPM (24-hour block average).

5. Cooling Tower 1 circulating water and blowdown water total dissolved solids shall not exceed 52,250 part per million solids (ppm_w).

6. Cooling Tower 2 circulating water and blowdown water total dissolved solids shall not exceed 52,250 ppm_w.

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 fabric filter.

4. The owner/operator shall continuously monitor the amount of reagent used by the DS.

5. The owner/operator shall determine the Cooling Tower #1 and #2 total dissolved solids (ppm_w) using a continuous conductivity monitoring of the circulating water or blowdown water.

6. The owner/operator shall determine the Cooling Tower #1 and #2 circulating water flow rate (GPM) using pump curves supplied by the manufacturer or pump curves established through testing by the owner/operator.

7. The owner/operator shall obtain guarantees from the drift eliminator vendor that show that the drift eliminators installed in cooling towers #1 and #2 will meet a drift rate of 0.0005%.

8. The owner/operator shall install and maintain non-resettable elapsed operating hour meters or the equivalent software to accurately indicate the elapsed operating time of Cooling Towers' #1 and #2 circulating water pump.

9. The owner/operator shall 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.

10. 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.

IV. Testing Requirements

1. The owner/operator will 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 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 using 40 CFR 51, Appendix M, Method 201 or 201A and Method 202 or other test methods approved by EPA for measuring PM_{10} or $PM_{2.5}$ emissions from this type of an emission unit.

    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 emissions of filterable and total PM emissions in lb/MMBtu and lbs/hr.

    b. The MMBtu/hr heat input for the Unit # 3 boiler.

5. The owner/operator shall submit the final emissions test report(s) to the EPA-New England 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. 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 filterable and total PM emissions.

3. For Unit #3 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 PM_{10} and $PM_{2.5}$ emissions on a lbs/hr basis. Hourly emissions will be calculated by multiplying the results from the most recent stack test by the hourly heat input.

4. For all emission units, control equipment, and monitoring equipment at both the Cooling Towers and Unit #3, the owner/operator shall maintain the following records:

    a. Periods of malfunctions including, at a minimum, the date and time the malfunction occurred; a description of the malfunction and the corrective action taken; the date and time corrective actions were initiated; and the date and time corrective actions were completed and the repaired equipment was returned to compliance. 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.

5. 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 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: Unit #3 and Cooling Towers #1 and #2 rolling 12-month filterable and total PM emission rates using data collected in Section V.2., date and time of all emission limit and permit condition violations, and 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 or 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 XIII below within seven calendar days or by e-mail to : R1.AirReports@epa.gov.

VIII. Right of Entry

1. 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 and Cooling Towers #1 and #2 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:

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