



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 1

1 CONGRESS STREET, SUITE 1100
BOSTON, MASSACHUSETTS 02114-2023

OCT 16 2009

Pamela F. Faggert
Vice President and Chief Environmental Officer
Dominion Energy Brayton Point, LLC
Brayton Point Station
One Brayton Point Road
Somerset, Massachusetts 02725

Re: Brayton Point Station National Pollutant Discharge Elimination System (NPDES)
Permit Renewal (MA00003645)

Dear Ms. Faggert:

In response to a request by Dominion Energy Brayton Point, LLC (Dominion), this letter presents a preliminary assessment by the United States Environmental Protection Agency-Region I (EPA-Region I) and the Massachusetts Department of Environmental Protection (MassDEP) of certain changes requested by Dominion to the limits included in Brayton Point Station's current National Pollutant Discharge Elimination System (NPDES) permit (Permit No. MA00003645).

As you know, Brayton Point Station's current NPDES permit was first issued by Region I and MassDEP in October 2003. As a result of a permit appeal, parts of the permit became effective in May 2004, while the balance of the permit did not become effective until December 2007 and the final resolution of the appeal. Given that part of the permit went into effect in May 2004, the five-year term of the permit "expired" in May 2009. Consistent with the regulations and standard practice, the permit has been administratively continued as a result of Dominion's filing of a timely, complete application for permit reissuance. 40 C.F.R. § 122.6.

Dominion is now in the process of converting Brayton Point Station's cooling system from an open-cycle system to a closed-cycle system using natural draft cooling tower technology. With the new system, waste heat will be primarily ejected to the atmosphere, allowing the facility to reuse its cooling water. This will have two major environmental benefits for the Mount Hope Bay estuary. First, it will greatly reduce the station's discharge of heat to the estuary, enabling the facility to meet the 2003 permit's new, stringent thermal discharge limit of 1.7 Trillion British Thermal Units (BTUs) per year. Second, it will enable the facility to greatly reduce its withdrawal of water from the estuary for cooling purposes, thus achieving corresponding reductions in entrainment and impingement of marine organisms, consistent with the permit's new stringent cooling water intake limits. On December 17, 2007, EPA-Region I issued an Administrative Order (AO) to Dominion Energy Brayton Point, LLC ("Dominion") that sets an enforceable schedule for the conversion of Brayton Point Station to "closed-cycle" cooling to enable the facility to comply with its new permit limits. Dominion worked cooperatively with EPA-Region I in the development of the AO's schedule.

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Dominion has explained to EPA and MassDEP that as it moved from preliminary engineering and planning, to detailed engineering and implementation, of the new cooling system, it identified certain relatively small permit changes that it has determined are needed to fit with the new cooling system. Dominion has identified and explained these permit changes in its August 2008 permit application and in subsequent meetings with EPA-Region I and/or MassDEP. In addition, Dominion has asked EPA-Region I and MassDEP for the agencies' preliminary reaction to the proposed changes.

This letter presents EPA-Region I and MassDEP's initial evaluation of the requested changes based on current information. Of course, EPA-Region I and MassDEP will further evaluate the matter and ultimately issue a draft permit for public review and comment. EPA would then consider any public comments before issuing a final permit. The agencies currently anticipate developing a draft permit for public review during this coming fiscal year. Any final permit limits that differ from Dominion's current permit, will only become effective after the public process is complete, including the opportunity for permit appeal.

EPA-Region I and MassDEP's preliminary assessment of Dominion's requested NPDES permit changes is presented below.

I. Cooling Water Intake and Outfall 001 Blowdown Effluent Flow Rate

Dominion requests an increase in the limit on cooling water intake volume (for cooling tower "make-up" water) from the existing permit's limit of 56.2 Million Gallons per Day (MGD) to a new limit of 70 MGD. (Consistent with the conversion from open-cycle to closed-cycle cooling, this represents an approximately 94 percent reduction from the approximately one billion gallons per day withdrawn by the open-cycle system.) Dominion explains that the 56.2 MGD value was based on an error in its November 2001 316 Determination Document that inadvertently omitted the make-up water necessary to account for the operation of the Station's unit 2 condenser.

EPA and MassDEP have reviewed the November 2001 316 Determination Document and agree that the make-up water for unit 2 was mistakenly omitted. EPA further agrees that this error must be corrected when a new permit is issued in order for the cooling towers to work properly. Therefore, EPA-Region I anticipates issuing a draft permit that contains an intake flow limit of 70 MGD.

Dominion also requests that the cooling tower blowdown discharge flow rate be increased to 70 MGD. Dominion requests this change because more detailed weather simulations used during the detailed design of the natural draft cooling towers indicate that there will likely be periods of time in which very little or no evaporation of water will take place in the cooling tower (most likely during winter operation). During these periods, it will be necessary for the water flows to balance so that the volume of the discharge must equal that of the intake. Therefore, in order to enable the station to properly manage the cooling towers in all anticipated weather conditions, EPA and

MassDEP anticipate setting the maximum cooling tower blowdown discharge flow rate to equal the intake flow rate in the draft permit. In addition, when the discharge from the wastewater treatment plant is taken into account, the permit's maximum daily flow rate will need to increase to 74 MGD.

2. Outfall 001 "Delta T"

The NPDES permit issued to Brayton Point Station in 2003 set new, stringent limits on the discharge of heat by the facility to Mount Hope Bay. The permit limits the discharge of heat to 1.7 Trillion BTUs per year, an approximately 96 percent reduction as compared to the approximately 42 Trillion BTUs per year discharged by the facility's open-cycle cooling system. The permit also sets a maximum temperature limit of 95 degrees Fahrenheit (F). Furthermore, the permit's thermal discharge limits, set under section 316(a) of the Clean Water Act, allowed Brayton Point Station to operate on an open-cycle basis for 122 hours per year and set a limit on the difference between the temperature of the intake water and the effluent of no greater than 22 degrees F (Delta T). Brayton Point Station's previous permit(s), issued in 1993, authorized once-through cooling and contained a Delta T limit of 22 degrees F. The Delta T requirement was carried forward since the current permit allows a limited amount of once-through cooling. The allowance to switch from closed-cycle cooling to open-cycle for 122 hours per year was intended to give the permittee some operational flexibility, while still meeting the maximum thermal discharge limit of 1.7 Trillion BTUs per year.

As a result of further detailed engineering work on the closed-cycle cooling system, Dominion requests certain changes to the permit's thermal related discharge limits. First, and importantly, Dominion is not seeking any change to either the permit's discharge limit of 1.7 Trillion BTUs per year, or the maximum temperature limit of 95 degrees F. Second, Dominion indicates that it will not seek to operate on an open-cycle basis at any time and the permit may eliminate the allowance for 122 hours of once-through cooling operation. Third, Dominion asks that the permit's Delta T limit of 22 degrees F be eliminated and replaced with a reporting-only requirement for Delta T. Dominion explains that because the November 2001 316 Demonstration Study included only conceptual engineering for closed-cycle cooling, the actual operating cooling tower delta T was not fully evaluated. Dominion has moved past conceptual engineering and it now is apparent that the Delta T of the much smaller thermal discharge resulting from the cooling tower operation will, at times, exceed 22 degrees F, and that this Delta T will vary according to meteorological conditions not controlled by the company. Therefore, Dominion requests elimination of the permit limit for Delta T to reflect closed-cycle operation.

EPA and MassDEP agree that a plant's Delta T, when operating using cooling towers, depends on the ambient weather condition and the river water temperature, and that these conditions will result in variation in the Delta T of the discharge.

The permit's yearly heat load limit was determined based on an assessment of environmental impacts from several plant operating scenarios. EPA and MassDEP asked

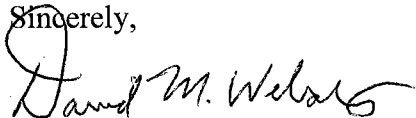
Dominion to evaluate the impact of unrestricting the Delta T and increasing the allowable maximum flow rate from the cooling towers (blowdown) using the same model that was used to develop the current thermal load. The results indicate that the new operating scenarios with a thermal discharge limit of 1.7 Trillion BTUs per year, together with eliminating the provision allowing limited once-through cooling and retaining the 95 degree F maximum temperature limit, will continue to be protective of the balanced, indigenous population of fish and shellfish in Mount Hope Bay. Moreover, since EPA anticipates removing the permit condition that allows periods of once-through cooling, the need to include a delta T limit will no longer apply. Therefore, EPA and MassDEP anticipate issuing a draft permit for public review that is based on these conditions and that will only require Brayton Point to report the Delta T. That reported value will then be used to calculate the heat load discharged from the Station.

EPA-Region I currently anticipates releasing a draft permit for public comment in fiscal year 2010.

EPA appreciates Dominion's efforts regarding the conversion of Brayton Point's cooling system, with the completion still on track for the spring of 2012.

Please feel free to contact me or Damien Houlihan at (617) 918-1586 if you have any related permitting questions.

Sincerely,

A handwritten signature in black ink that reads "David M. Webster". The signature is written in a cursive style with a large initial "D".

David M. Webster, Chief
Industrial Permits Branch

Cc: Dave Johnston, MassDEP