



**Public Service
of New Hampshire**

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The Northeast Utilities System

November 1, 2007

UPS Overnight

Mr. John Paul King, Environmental Scientist
U.S. Environmental Protection Agency
One Congress Street
Suite 1100 (Mailcode CIP)
Boston, MA 02114-2023

**Re: Public Service Company of New Hampshire
Merrimack Station
National Pollutant Discharge Elimination System Permit No. NH0001465
Response to Information Request in support of NPDES Permit Reissuance**

Dear Mr. King:

Public Service Company of New Hampshire ("PSNH") hereby provides its response to the July 3, 2007 information request from the United States Environmental Protection Agency ("EPA") (the "Letter"). The Letter directed PSNH to provide certain information regarding PSNH's Merrimack Station in Bow, New Hampshire (the "Station"), to assist EPA in its renewal of the Station's existing Clean Water Act ("CWA") National Pollutant Discharge Elimination System permit ("Permit"), including renewal of the Station's existing CWA §316(a) variance pursuant to EPA regulations governing such renewals. EPA extended the due date for PSNH's response to November 2, 2007, and PSNH has provided its response with this allotted timeframe.

PSNH's response to the Letter consists of two reports, both enclosed, and this correspondence (collectively, the "Response"): (1) *Response to United States Environmental Protection Agency CWA § 308 Letter, PSNH Merrimack Station Units 1 & 2, Bow, New Hampshire* prepared by PSNH, Enercon Services, Inc. ("Enercon") and Normandeau Associates, Inc. ("Normandeau") dated October 2007, and (2) *Entrainment and Impingement Studies Performed at Merrimack Generating Station from June 2005 through June 2007* prepared by Normandeau dated October 2007 (which specifically responds to the Letter's Request Nos. 7 and 8). PSNH previously has provided extensive information, including the following reports prepared by Normandeau in support of PSNH's §316(a) variance renewal request: (1) *Merrimack Station Fisheries Survey Analysis of 1967 through 2005 Catch and Habitat Data* dated April 2007; (2) *Merrimack Station Thermal Discharge Effects On Downstream Salmon Smolt Migration* dated December 2006; and (3) *A Probabilistic Thermal Model of Merrimack River Downstream of Merrimack Station* dated April 2007.

PSNH's response to the Letter addresses the following points, with supporting data and analysis by Enercon and Normandeau, each leading experts, respectively, in the fields of engineering and biological assessment. With respect to CWA §316(b), as a threshold matter, the biological data from Merrimack Station's monitoring programs indicate that no adverse environmental impact ("AEI") to the aquatic ecosystems of the Merrimack River in the vicinity of

the Station has occurred, as measured by any representative important species or critical aquatic organism population, as a result of the Station's existing CWIS operation. As a result, the costs of certain of the technologies identified by EPA in the Letter – particularly closed-cycle cooling configuration for one or both units at the Station – would be, by any reasonable measure, wholly disproportionate to any environmental benefit attributable to any such retrofit. Moreover, retrofitting would present substantial negative impacts, including with respect to regional electric-system reliability and pricing, as well as industry-wide impacts that raise the specter of disruption of the electricity supply in a manner that suggests that such retrofitting may not be cost-effective. Instead, and assuming that the requisite AEI is established, the following combination of technologies and operational measures would constitute the “best technology available” for Merrimack Station under §316(b): (1) an upgraded fish return systems for both Unit 1 and Unit 2, (2) continuous operation of the Unit 1 and Unit 2 traveling screens from April through December (these screens are not presently operated on a continuous basis), (3) one-pump reduced flow operation for Unit 2 from December 15 through March 15, and (4) scheduling of Unit 2 maintenance outages to coincide with periods of high impingement and entrainment during early summer (ending June 15).

Without identifying the basis for its request, EPA also asked that PSNH identify and evaluate means by which Merrimack Station could achieve and maintain a maximum ambient temperature differential of 5°F in Hooksett Pool (i.e., between Station N10 and Station S4). As reflected in PSNH's response to the Letter, Enercon and Normandéau assessed EPA's request and presented two options for achieving such a maximum ambient temperature differential: (1) using exclusion hours for periods when extreme low river flow conditions occur, or (2) increasing the temperature differential value. Each of these options is supported by the thermal and biological monitoring data collected by PSNH in Hooksett Pool and upper Amoskeag Pool since 1967. These data provide no historical evidence that the Station's thermal discharge (1) may reasonably be considered to have caused any prior appreciable harm to the balanced indigenous population or community of shellfish, fish and wildlife that reside within, or are migratory through, the Merrimack River in the sphere of influence of Station's hydrothermal regime (i.e., the “BIP/C”), or (2) in the future, will not assure the protection and propagation of such BIP/C. Rather, these data confirm that the requirements in the Station's existing NPDES permit satisfy the §316(a) variance-renewal standard, and that renewal of the Station's §316(a) variance is again warranted.

One issue raised by the Letter warrants discussion. With respect to CWA §316(b), the Letter appears to signal that EPA Region 1 intends to exercise its “best professional judgment” by relying on *Riverkeeper, Inc. v. EPA*, 475 F.3d 83 (2nd Cir. 2007) (“*Riverkeeper II*”) rather than by applying the United States Court of Appeals for the First Circuit's holding in *Seacoast Anti-Pollution League v. Costle*, 597 F.2d 306, 311 (1st Cir. 1978) (“*SAPL*”) that §316(b) does not require the “use of technology whose cost is wholly disproportionate to the environmental benefit to be gained.” In light of the circuit court dispute and the expected United States Supreme court challenge implicating this dispute, PSNH has throughout its response to the Letter accounted for both standards. Assuming solely for purposes of PSNH's response to the Letter that *Riverkeeper II* could be applied to Merrimack Station (which PSNH does not concede), closed-loop cooling using a mechanical draft cooling tower would not be the most cost-effective technology available for minimizing AEI, if any, but rather raises significant concerns about negative impacts, particularly with respect to electric system impacts that may reverberate throughout the industry. In light of the fact that *SAPL*'s wholly disproportionate standard does apply, PSNH has provided all of the information necessary to conclude using that standard that the costs of implementing closed-cycle cooling in one or both units at Merrimack Station would, by any reasonable measure, outweigh any environmental benefits of doing so.

As in previous correspondence, we would like to remind EPA of Merrimack Station's vital role in the State of New Hampshire as a base-loaded generating station in the PSNH fleet which provides reliable, affordable electricity to more than 475,000 customers. As the Supreme Court of New Hampshire has noted, PSNH "provides retail electric service to more than seventy percent of New Hampshire's residents," see *In re Pinetree Power, Inc.*, 152 N.H. 92, 93 (2005), and Merrimack Station is the largest electric generating facility in PSNH's fleet. As a result, PSNH once again urges EPA during this permitting process to provide appropriate consideration to the critical importance of Merrimack Station in the electric grid and the potential implications and effects of any new permit limitations on electric system reliability and electricity pricing that squarely implicate PSNH's regulated status and, therefore, its obligation to serve the majority of New Hampshire electricity consumers. It is critical that permitting requirements not constrain Merrimack Station's ability to operate as designed and especially during the peak demand period (May 1-October 31). Again, electricity is an essential service, directly correlated to public health and safety, not to mention the state's economic well-being. PSNH believes it is imperative that these societal prerogatives receive appropriate recognition in the permitting process, in accordance with CWA provisions requiring EPA to take into account and consider energy requirements in developing NPDES permit requirements, including for thermal discharges.

PSNH's concerns are echoed by both ISO New England system managers and the North American Electric Reliability Corporation ("NERC"). In October 2006, ISO New England released its comprehensive ten-year Regional System Plan. This ISO study concluded that New England, with its lack of new capacity and increasing electricity demand, is facing a potentially severe electrical capacity shortage that could lead to a failure to meet established reliability criteria, thereby greatly increasing the possibility of emergency conditions (e.g., rolling blackouts) particularly during periods of peak demand. Shortages could occur as early as 2008. Thus, the Station's role is increasingly vital to the State of New Hampshire in meeting increasing demand and in averting an energy crisis in the next decade. Furthermore, of particular note and relevance to Merrimack Station, the ISO report emphasized the need for resources that can respond to system contingencies. EPA may not be aware that the Station has been identified as a key resource in the electric system restoration plan because of its ability to reenergize the system in the event of a system-wide blackout. In other words, the Station has a vital role in maintaining electric system equilibrium in New England. In addition, NERC, assigned under federal law to enforce the reliability of the U.S. power grids, concluded in its recently issued *2007 Long-Term Reliability Assessment, 2007-2016* that the amount of reserve electricity generation capacity available for emergency shortages will fall below a 15 percent safety margin in New England as early as 2009. The NERC report also expressly concludes that retrofitting existing power plants with cooling towers to meet CWA requirements is expected to exacerbate the power supply concerns identified in the assessment. The ISO study and the NERC assessment alone establish that EPA's issuance of a NPDES permit containing CWA Section 316 requirements that compel a reduction in Merrimack Station's capacity or otherwise impair its role in the ISO system could have significant adverse electric system impacts, including disruptions to system reliability, market pricing and voltage protection. PSNH is considering an assessment of additional sector-wide or site-specific data to further support ISO and NERC's conclusions.

Please be advised that this Response to the Letter, in its entirety with the exception of this cover letter, from which one could obtain or infer information about Merrimack Station's operating procedures and schedule is "confidential business information" under 40 C.F.R. Part 2, Subpart B and New Hampshire law. Therefore, PSNH asserts a claim of business confidentiality with regard to this information and requests that EPA handle these documents in full accordance with 40 C.F.R. Part 2, Subpart B.

Please be further advised that PSNH maintains the positions it has previously stated, in correspondence to and discussions with EPA Region 1 staff, with respect to EPA's interpretation and application of certain aspects of EPA's regulations implementing CWA §316(b) ("Phase II Regulations"). While EPA has suspended the Phase II Regulations pending further rulemaking, PSNH understands that challenges to the *Riverkeeper, Inc. v. EPA*, 475 F.3d 83 (2nd Cir. 2007) decision continue. PSNH respectfully reserves its rights with respect to the application of CWA §316, including with respect to §316(b) via Section 402 NPDES permits, to the Station.

As always, we stand ready to meet with you and technical personnel to discuss PSNH's response. To that end, we suggest a meeting in the near future, ideally with NHDES staff also present.

Thank you for your prompt attention to this matter, and do not hesitate to contact me (603-634-2851) or Allan Palmer (603-634-2439) with any questions or concerns you or your staff may have.

Very truly yours,



William H. Smagula, P.E.
Director – Generation

Enclosure

cc: Allan Palmer, PSNH
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