



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION I
ONE CONGRESS STREET SUITE 1100
BOSTON, MASSACHUSETTS 02114-2023**

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

July 3, 2007

William H. Smagula, P.E., Director-Generation
Public Service of New Hampshire
P.O. Box 330
Manchester, NH 03305-0330

Re: Information Request for NPDES Permit Re-issuance, NPDES Permit No: NH0001465

Dear Mr. Smagula:

The New England Regional office of the United States Environmental Protection Agency (EPA) is continuing work on developing a new draft National Pollutant Discharge Elimination System (NPDES), Permit No. NH0001465, for Public Service of New Hampshire's (PSNH) Merrimack Station electrical generating facility in Bow, New Hampshire (Merrimack Station). EPA is sending PSNH this information request letter pursuant to Section 308(a) of the Clean Water Act (CWA), 33 U.S.C. § 1318(a), because EPA requires additional information to support development of the new permit for Merrimack Station.

CWA § 308(a) authorizes EPA to require the owner or operator of any point source to make reports and provide information as may reasonably be required to:

- ... carry out the objectives of ... [the CWA], including but not limited to: (1) developing or assisting in the development of any effluent limitation, or other limitation, prohibition ... or standard of performance under [the CWA] ...; (2) determining whether any person is in violation of any such effluent limitation, or other limitation, prohibition or effluent standard, . . . or standard of performance; (3) any requirement established under this section; or (4) carrying out section . . . 1342 . . . of [the CWA]

With any NPDES permit reissuance, EPA must evaluate a facility's current compliance with applicable CWA standards. EPA needs the information requested in this letter to assist in

determining appropriate NPDES permit limits for Merrimack Station's thermal discharges to, and cooling water intake withdrawals from, the Merrimack River.

The permit's thermal discharge limits will be based either on technology and water quality standards or a variance from those standards under CWA § 316(a), 33 U.S.C. § 1326(a), whereas the cooling water intake structure (CWIS) limits will be based on technology standards under CWA § 316(b), 33 U.S.C. § 1326(b), and/or applicable, more stringent state water quality standards, if any. With respect to CWA § 316(b) requirements, on January 25, 2007, the United States Court of Appeals for the Second Circuit issued its decision in a law suit challenging EPA regulations that, among other things, set technology requirements under CWA § 316(b) for CWISs at large, existing power plants (the Phase II Rule). See *Riverkeeper, Inc. v. EPA*, 475 F.3d 83 (2d Cir. 2007). The court struck down certain provisions of the Rule and remanded several others to the Agency for reevaluation. On March 20, 2007, Benjamin Grumbles, EPA Assistant Administrator for Water, sent a memorandum to EPA's Regional Administrators directing that the Phase II Rule should be considered suspended because so many of its provisions are affected by the court decision. In addition, the March 20, 2007, memorandum directed that "[i]n the meantime, all permits for Phase II facilities should include conditions under section 316(b) of the Clean Water Act developed on a Best Professional Judgment basis. See 40 C.F.R. § 401.14."

To assist in the development of thermal discharge and cooling water intake structure-related limits for the new Merrimack Station permit, EPA requires you to submit the information described below. PSNH must submit this information to EPA within seventy-five days of receipt of this letter.

Please note that to the extent you have already submitted any of the requested information to EPA as part of another submission, it is sufficient for you simply to reference where in the other submission the pertinent information is provided.

Information Requested

1. Please provide a detailed description of Merrimack Station's cooling system, including
 - a. the cooling water intake structure and related equipment,
 - b. the discharge canal or pipe,
 - c. cooling process flow diagram depicting the flow of cooling water through the facility,
 - d. all pumps of any type used in the cooling system,
 - e. any equipment for adding disinfectant or biocide to the cooling water, and
 - f. any equipment used for chilling the cooling water after it has been heated up in the power plant.

As part of this description, please also identify the age of the equipment and facilities involved and provide a brief description of all major upgrades and repairs to this equipment accomplished since January 2001.

2. Please identify the projected retirement date, if any, of Merrimack Station's existing coal-fired operation.
3. Please provide a description of the processes employed at Merrimack Station with regard to boiler operation, condenser operation, CWIS operation, and effluent treatment operations (including any chilling or cooling of heated cooling water).
4. Please describe the engineering aspects or considerations pertinent to considering the application of the following technologies at Merrimack Station:
 - a. Mechanical draft cooling towers for use in a recirculating (or "closed-cycle") cooling system for both generating units at Merrimack Station. The analysis must specify the number of cooling tower cells required based on the facility's heat balance, and a discussion of the major components that would need to be added, and the major modifications to the facility that would need to be undertaken, to retrofit Merrimack Station with this technology.
 - b. Mechanical draft cooling towers for use in a recirculating (or "closed-cycle") cooling system for only one of the generating units at Merrimack Station. The analysis must specify the number of cooling towers required based on the unit's heat balance, and a discussion of the major components that would need to be added, and the major modifications to the facility that would need to be undertaken, to retrofit Merrimack Station with this technology.
 - c. Mechanical draft cooling towers for use in a "helper tower" or "chiller" configuration that would not result in a recirculating (or "closed-cycle") cooling system, but could contribute to reducing thermal discharges by Merrimack Station. The analysis must specify the number of cooling towers required based on the facility's thermal discharges, and a discussion of the major components that would need to be added, and the major modifications to the facility that would need to be undertaken, to retrofit Merrimack Station with this technology.
 - d. CWIS screening systems including, at a minimum,
 - i. wedgewire screens,
 - ii. fine-mesh screens,
 - iii. geotextile barrier curtains;
 - iv. Ristroph screens; and
 - v. any other type of screening system that you deem worthy of consideration that will minimize entrainment, impingement and mortality.

Each analysis must include a discussion of the major components that would need to be added, and the major modifications to the facility that would need to be undertaken, to retrofit Merrimack Station with this technology.

- e. Any other technology that you deem worthy of consideration for reducing Merrimack Station's thermal discharges and/or its entrainment and impingement of aquatic organisms.
5. For each of the technologies evaluated under Item No. 4 above, please provide:
- a. A detailed explanation of the process changes required to operate and maintain.
 - b. An estimate of the most stringent thermal discharge limits that Merrimack Station would be able to comply with utilizing the technology in question.
 - c. An estimate of the most stringent cooling water withdrawal flow and thermal load limits that the facility would be able to comply with utilizing the technology in question.
 - d. An estimate of the most stringent cooling water through screen velocity limits that the facility would be able to comply with utilizing the technology in question.
 - e. An estimate of the extent to which (1) impingement, (2) impingement mortality, and (3) entrainment would be reduced at Merrimack Station by utilizing the particular technology.
 - f. To the extent that you believe any of these technologies would be infeasible for implementation at Merrimack Station, provide a detailed explanation for your conclusion in this regard.
 - g. An estimate of the cost for installing and operating each of these technologies, except that no cost estimate is required for any technology that you have determined is technologically infeasible for use at Merrimack Station.
 - h. Please describe in detail the non-water quality environmental impacts (including energy, air pollution, noise, public safety), if any, that you have determined will occur from the use of each technology.
6. Please identify and describe the least expensive, cost effective means by which Merrimack Station could comply with a permit condition that restricts the allowable ambient temperature differential occurring in the Hooksett Pool resulting from of Merrimack Station's thermal discharge. The ambient temperature differential restriction to evaluate is a restriction not to exceed a 5°F differential between Stations N10 and S4 in the Hooksett Pool. Additional means to achieve other ambient temperature differential scenarios

between Station N10 and different downstream S-Stations in the Hooksett Pool also may be described and evaluated. For each ambient temperature restriction scenario evaluated, provide all cost assumptions, cost estimates, technologies, methods, operational assumptions, and calculations.

7. Please provide all fisheries data collected during entrainment and impingement sampling conducted from 2005 to 2007, including all data collected in support of Merrimack Station's Proposal for Information (PIC). Specifically, EPA requests the following for each sampling event that was conducted:
 - a. Number of eggs of each fish species collected.
 - b. Number of larvae of each fish species collected.
 - c. Number of fish (juvenile and adult) of each species collected.
 - d. Duration of sampling event (in hours)
 - e. The location and method of sampling.
 - f. The in-stream temperature(s) measured during the sampling event.

8. Provide the following, based on the data described above in item 7:
 - a. The estimated average number of eggs entrained per calendar month for each species, and the estimated annual total number of eggs entrained for each species, based on Merrimack Station's typical recent water withdrawal rate for each calendar month;
 - b. The estimated average number of larvae entrained per calendar month, and the estimated annual total number of larvae for each species, based on Merrimack Station's typical recent water withdrawal rate for each calendar month;
 - c. The estimated average number of fish (juveniles and adults) of each species impinged per calendar month, and the estimated annual total number of each species impinged, based on Merrimack Station's typical recent water operations for each calendar month; and
 - d. The estimated adult equivalent of fish of each species lost to entrainment and impingement for each calendar month, and an annual adult equivalent total for each species, based on Merrimack Station's typical recent water withdrawal rate and operations for each calendar month.
 - e. All assumptions, methods and calculations for each of these estimates of entrainment and impingement effects.

Information submitted pursuant to this request shall be sent by certified mail and shall be addressed as follows:

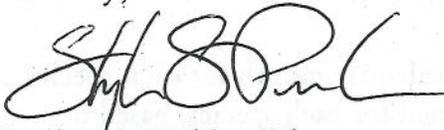
Mr. John Paul King, Environmental Scientist
U.S. Environmental Protection Agency
1 Congress Street
Suite 1100 (Mailcode CIP)
Boston, Massachusetts 02114-2023

Please be aware that failure to comply with this information request could, depending on the circumstances, subject the PSNH to enforcement action pursuant to Section 309 of the CWA, 33 U.S.C. §1319.

PSNH may assert a business confidentiality claim with respect to part or all of the information submitted to EPA in the manner described at 40 CFR Part 2.203(b). EPA will disclose information covered by such a claim only to the extent, and by means, of the procedures set forth in 40 CFR Part 2, Subpart B. If no such claim accompanies the information when it is submitted to EPA, it may be made available to the public by EPA without further notice to PSNH. Please note that effluent information may not be regarded as confidential.

If you have any technical questions regarding this information request, please contact John Paul King at (617) 918-1295. If you have any legal questions, please direct them to Mark Stein at (617) 918-1077.

Sincerely,



Stephen S. Perkins, Director
Office of Ecosystem Protection

cc: Permit File;

Stergios Spanos, New Hampshire Department of Environmental Services, Water Division
Wastewater Engineering Bureau, P.O. Box 95, Concord, NH 03302-0095