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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 1
1 CONGRESS STREET, SUITE 1100
BOSTON, MASSACHUSETTS 02114-2023

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

OCT 31 2007

Mr. John M. MacDonald
Vice President – Energy Delivery & Generation
Public Service Company of New Hampshire
Schiller Station
400 Gosling Road
Portsmouth, NH 03801

Re: Supplemental Information Request pursuant to Section 308 of the Clean Water Act to Supercede Previous Letter dated December 30, 2004 for Schiller Station NPDES Permit Reissuance - [NPDES Permit No: NH0001473]

Dear Mr. MacDonald:

The United States Environmental Protection Agency's office for the New England Region (EPA or the Region) is sending this letter to clarify and update certain information submission requirements for Public Service Company of New Hampshire (PSNH) related to the Schiller Station's (the Station) application for re-issuance of its National Pollutant Discharge Elimination System (NPDES) permit (NPDES Permit No. NH0001473). The information requirements in question pertain to your facility's cooling water intake structures (CWISs) regulated under section 316(b) of the Clean Water Act (CWA). See 33 U.S.C. § 1326(b).

Schiller Station's NPDES permit authorizes the facility to discharge pollutants into, and withdraw cooling water from, the Piscataqua River. The Station's current permit expired on October 11, 1995. The permit was administratively continued, however, because the Station timely applied to EPA for permit reissuance. As a result, Schiller Station remains subject to the existing permit until EPA issues it a new one.

With any NPDES permit reissuance, EPA evaluates a facility's current compliance with applicable standards, including the requirements of CWA § 316(b) governing CWISs. To satisfy § 316(b), the location, design, construction and capacity of a facility's CWISs must reflect the Best Technology Available (BTA) for minimizing adverse environmental impacts.

On December 30, 2004, EPA issued PSNH an information request letter under CWA § 308 (the December 30, 2004 § 308 Letter). CWA § 308(a), 33 U.S.C. §1318(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] . . ..

The December 30, 2004 § 308 Letter required the company to submit certain information to EPA by no later than January 7, 2008 for the purpose of developing CWIS limits under CWA § 316(b) for Schiller Station's permit re-issuance. EPA's Phase II Rule for CWISs under CWA § 316(b), 40 C.F.R. Part 125, Subpart J (the Phase II Rule), set national performance standards for, and information submission requirements regarding, CWISs at large, existing power plants. Because Schiller Station was subject to the Phase II Rule, EPA's December 30, 2004 § 308 Letter required the submission of information consistent with the requirements of the Rule. The required information included:

1. a Proposal for Information Collection (PIC) satisfying 40 C.F.R. §125.95(b)(1) by no later than October 7, 2006;
2. a Comprehensive Demonstration Study (CDS) satisfying 40 C.F.R. § 125.95 by no later than January 7, 2008; and
3. the information required by 40 C.F.R. §§ 122.21(r)(2), (3) and (5) by no later than January 7, 2008.

On January 25, 2007, the United States Court of Appeals for the Second Circuit issued its decision in a law suit challenging 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 dictating 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 (BPJ) basis. See 40 C.F.R. § 401.14." More recently, on July 9, 2007, EPA formally suspended the Phase II Rule, with the exception of 40 C.F.R. § 125.90(b), by publishing a notice of suspension in the Federal Register (*see* 72 Fed. Reg. 37107 (July 9, 2007)). Under 40 C.F.R. 125.90(b), permitting authorities are directed to establish § 316(b) requirements on a BPJ basis for existing facilities not subject to categorical standards contained in EPA regulations. As the Federal Register notice states, the BPJ requirement is consistent with the CWA, case law, and the March 20, 2007 memorandum's direction to do so. See 72 Fed. Reg. at 37108.

In light of these developments, the Region is now issuing PSNH this supplemental information request letter under CWA § 308. This letter clarifies and updates, consistent with 40 C.F.R. § 125.90(b), the information submission requirements of the December 30, 2004 § 308 Letter.

While the requirements of this letter are similar to those in the December 30, 2004 § 308 Letter, there are some differences. This new § 308 letter supersedes the December 30, 2004 § 308 Letter and seeks information to assist EPA in developing NPDES permit limits, including new CWIS limits under CWA § 316(b) on a BPJ basis, consistent with 40 C.F.R. § 125.90(b). Please be aware that any failure to comply with the requirements of this § 308 letter could, depending on the circumstances, subject PSNH to enforcement action pursuant to § 309 of the CWA, 33 U.S.C. § 1319.

Schedule for Information Collection and Submission

1. EPA received the Schiller Station PIC dated October 6, 2006, pursuant to the December 30, 2004, § 308 letter. EPA has reviewed the PIC and has included requests for additional information and biological monitoring requirements, described in Attachments A and B.

2. As expeditiously as practicable, but not later than April 7, 2008, the Station shall submit a CWIS Information Document that satisfies the specifications detailed in Attachment A to this letter. The purpose of this document will be to:

   • characterize impingement, impingement-induced mortality, and entrainment by Schiller Station's CWISs;
   • describe the operation of the facility's cooling water intake structures;
   • evaluate both the existing technologies and operational measures, as well as possible additional technologies and operational measures, as potential components of the BTA under § 316(b); and
   • establish whether the technologies and/or operational measures already installed, or that the Station proposes to install, at the facility reflect the BTA under CWA § 316(b).

   See Attachment A of this letter detailing the information requirements for the Station's CWIS Information Document.

3. The Station shall also submit to EPA by April 7, 2008, the information described in 40 C.F.R. §§ 122.21(r)(2) and (r)(3), which includes:

   • Source Water Physical Data
   • Cooling Water Intake Structure Data

4. The Station shall also submit to EPA an Impingement Monitoring Report (IMR) no later than April 7, 2008 that satisfies the specifications presented in the Schiller PIC and detailed in Attachment B to this letter. The report will be used to characterize impingement and impingement-induced mortality by the Station's CWISs.

5. The Station shall also submit to EPA no later than April 7, 2008 an Entrainment Monitoring Report (EMR) that satisfies the specifications presented in the Schiller PIC and detailed in Attachment B to this letter.

6. The Station shall provide a calculation of the dilution factor appropriate for the facility's receiving water accounting for tidal exchange no later than April 7, 2008.

With regard to the information that must be submitted under this letter, 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 C.F.R. § 2.203(b). Information covered by such a claim will be disclosed by EPA 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 data" under 40 C.F.R. § 2.302 may not be regarded as confidential business information.

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.

Please address your information submittals to:

Damien Houlihan
Office of Ecosystem Protection
U.S. EPA Region 1
One Congress Street, Mail Code CIP
Boston, MA 02114-2023

EPA looks forward to working with you on your new permit. If you have any questions concerning the required information requested above, please contact Damien Houlihan at (617) 918-1586.

Sincerely,

Stephen S. Perkins, Director
Office of Ecosystem Protection

cc. Jeff Andrews, NH DES

Attachment A

Information Requirements for the Cooling Water Intake Structure (CWIS) Information Document

Source Waterbody Flow

1. Provide the delineation of the hydraulic zone of influence for your cooling water intake structure; and

2. Provide a calculation of the intake volume (based on design flow) over one tidal cycle of ebb and flow as a percentage of the volume of water calculated using the surface area centered at the opening of the intake (with a diameter defined by the distance of one tidal excursion at the mean low water) and a depth based on the mean low water level.

Technology Assessment Information

1. Please provide a detailed description of Schiller 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,
   f. any equipment used for chilling the cooling water after it has been heated up in the power plant, and
   g. design calculations showing the through-screen velocity at the entrance to each intake structure at minimum ambient source water surface elevations.

   You must also provide a narrative description of the operation of the Station's cooling water system, the role of each CWIS in the overall cooling water system, the proportion of the design intake flow of each CWIS that is used in the system, the number of days of the year the cooling water system is in operation, and any seasonal changes in the operation of the system. In addition, you must include design and engineering calculations prepared by a qualified professional and relevant data to support your description of your cooling water system.

   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 Schiller Station's existing operation.

3. Please submit a Supplemental Information Report to the Station's June 6, 1995 NPDES Permit Application that includes a description of the processes employed at Schiller Station with regard to boiler operation, condenser operation, CWIS operation, and effluent treatment operations (including any chilling or cooling of heated cooling water) as well as any process changes that may have been implemented at the Station since the submission of the permit application. To the extent that this information is provided under item No. 1 above, you may simply cross-reference to where in your submission the information is already provided.

4. Please describe the engineering aspects or considerations pertinent to considering the possible application of the following technologies at Schiller Station:

   a. Mechanical draft or natural draft cooling towers for use in a recirculating (or "closed-cycle") cooling system for the generating unit and service water system at Schiller Station. The analysis must specify the number of cooling tower cells required based on the facility's heat balance, space requirements, 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 Schiller Station with this technology.

   b. CWIS screening systems or barrier technology that will minimize entrainment, impingement and impingement 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 Schiller Station with this technology.

   c. Reducing cooling water flow (i.e., "capacity") by using variable speed pumps and/or by reducing pumping operations from the current two pump operation. Such evaluation shall include consideration of any configuration, and/or additional "stand-by" pumping systems that may be necessary to address any safety concerns.

   d. The use of "grey water" for cooling purposes.

   e. Any other technology that you deem worthy of consideration for reducing Schiller Station's entrainment and/or impingement mortality 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 such technologies.

   b. An estimate of the most stringent thermal discharge limits that Schiller Station would be able to comply with utilizing the technology in question.

c. An estimate of the most stringent cooling water withdrawal flow limits that the facility would be able to comply with utilizing the technology in question.

d. An estimate of the most stringent cooling water intake 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 Schiller Station by utilizing the particular technology.

f. To the extent that you believe any of these technologies would be technically and/or economically infeasible for implementation at Schiller 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.

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.

Other Information Requested

Provide a description of the combination of existing and proposed technologies and operational measures at the Station for which Schiller Station believes the location, design, capacity, and construction reflect the Best Technology Available for minimizing adverse environmental impacts.

Attachment B

Requirements To Satisfy The Collection and Reporting Of Biological Monitoring Data

Impingement Monitoring, Data Analysis and Reporting

1. Impingement Monitoring

The permittee shall demonstrate the completion of one year of impingement monitoring to estimate impingement rates based on current operating conditions at Schiller Station according to the sampling plan specified in Schiller Station's Quality Assurance Plan for Standard Operating Procedures for Impingement Monitoring submittal, dated August 2006.

2. Impingement Data Analysis

Impingement data collected at Schiller Station shall undergo the following analysis and include the identified supporting information:

a. 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 Schiller Station's typical recent water withdrawal rate and operations for each calendar month.

b. The estimated number of "adult equivalent" fish of each species lost to impingement for each calendar month, and an annual adult equivalent total for each species, based on Schiller Station's typical recent water withdrawal rate and operations for each calendar month.

c. All assumptions, methods and calculations for each of the above estimates of impingement effects.

d. A justification that collection of one year of impingement data reflects an appropriate characterization of overall impingement at the Schiller Station CWIS, including seasonal and year-to-year variation in impingement.

3. Impingement Data Reporting

Impingement monitoring results specified in Section 1 (above) and all analysis and supporting information specified in Section 2 (above) shall be submitted to EPA in an Impingement Monitoring Report (IMR) submitted no later than April 7, 2008.

Entrainment Monitoring, Data Analysis and Reporting

1. Entrainment Sampling

At this time, ichthyoplankton data collected in the immediate vicinity of the Schiller Station CWIS during 2001 and 2003 appears to be sufficient to characterize nearfield ichthyoplankton densities in the Piscataqua River. Therefore additional ichthyoplankton sampling is not needed at this time. However, the permittee shall demonstrate completion of one year of entrainment sampling at the Schiller Station CWIS according to the sampling plan proposed in the Schiller Station Quality Assurance Plan and Standard Operating Procedures for Entrainment Monitoring, dated August 2006.

As proposed by the permittee, entrainment data is collected from a 4-inch raw water tap drawing unchlorinated ambient cooling water at low pressure from the common condenser supply line behind the circulating water pump. EPA considers sampling ambient cooling water prior to entry to pumps to be the preferred location as it ensures a representative sample of entrained organisms without the potential for organisms to become lost during pumping and discharge. Alternatively, a representative sample may be collected in the vicinity of the intake structure (e.g. in the intake forebay). If additional sampling is warranted, sampling should be conducted either from the supply line prior to pump entry or in the vicinity of the intake structure as opposed to after discharge. If these preferred locations are not accessible, the permittee shall provide EPA with a written statement justifying the chosen sampling location subject to EPA approval.

2. Entrainment Data Summary

Entrainment data collected at Schiller Station shall be summarized in the following manner:

a. Number of eggs of each fish species collected at each sampling location for each sampling event.

b. Number of larvae of each fish species collected at each sampling location for each sampling event.

c. Duration of each sampling event (in hours).

d. The location and method of sampling.

e. The in-stream temperature(s) measured during the sampling event.

4. Entrainment Data Analysis

Entrainment data collected at Schiller Station shall undergo the following analysis and include

the identified supporting information:

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 Schiller Station's typical recent water withdrawal rate for each calendar month;

b. The estimated average number of larvae entrained per calendar month for each species, and the estimated annual total number of larvae for each species, based on Schiller Station's typical recent water withdrawal rate for each calendar month;

c. The estimated number of "adult equivalent" fish of each species lost to entrainment for each calendar month, and an annual adult equivalent total for each species, based on Schiller Station's typical recent water withdrawal rate and operations for each calendar month;

d. An estimate of the percentage of eggs and larvae lost to entrainment compared to the density of eggs and larvae in the Piscataqua River for each week of sampling;

e. A justification that collection of one year of entrainment data reflects an appropriate characterization of overall entrainment at Schiller Station CWIS, including seasonal and year-to-year variation; and

f. All assumptions, methods and calculations for each of the above estimates of entrainment effects.

5. Entrainment Data Reporting

Entrainment data collected at Schiller Station, including data and analysis listed in Section 2 and 3, shall be presented in an Entrainment Monitoring Report submitted to EPA by April 7, 2008.