State of New Hampshire
DEPARTMENT OF ENVIRONMENTAL SERVICES
6 Hazen Drive, P.O. Box 95, Concord, NH 03302-0095
(603) 271-3503 FAX (603) 271-2867

July 21, 1999

Allan Palmer, Senior Engineer
PSNH - Merrimack Station
97 River Road
Bow, N.H. 03304

Subject: National Pollutant Discharge Elimination System (NPDES) Compliance Inspection at Public Service of New Hampshire (PSNH) Merrimack Station (MS) Bow, NPDES # NH0001465

Dear Mr. Palmer:

On May 21, 1999, a Compliance Evaluation Inspection (CEI) was conducted at PSNH-MS in Bow. Objectives of a CEI include determining compliance status with NPDES permit conditions, verifying accuracy of permit required information and verifying the adequacy of permittee sampling and monitoring. The following people were present during this inspection:

Allan Palmer, Senior Engineer, PSNH
Bruce Evans, Maintenance Supervisor, PSNH-MS
Kendall Perkins, Environmental Inspector, NHDES

This inspection involved evaluations of the PSNH-MS permit, records, reports, site, effluent, receiving waters, flow, laboratory and self-monitoring program. There were no deficiencies recorded for this CEI.

Please note that areas not covered in this CEI may be evaluated during a future NPDES inspection, and any area evaluated during this CEI is subject to a more thorough evaluation in the future. I would like to thank everyone for your time and efforts during this compliance inspection. Feel free to contact me if you have any questions.

Respectfully,

Kendall L. Perkins Jr.
Environmental Inspector,
Wastewater Engineering Bureau

cc. Charles I. Hirshberg, P.E., Compliance Supervisor, SWQB, NHDES
Joy Palmer, Compliance Section, USEPA
William Nadeau, Vice President, Northeast Utilities System
Bruce Evans, Chemistry Supervisor, PSNH-MS

EPA

United States Environmental Protection Agency
Washington, D.C. 20460

Water Compliance Inspection Report

Form Approved.
OMB No. 2040-0057
Approval expires 10-31-95

Section A: National Data System Coding (i.e., PCS)

Transaction Code	NPDES	yr/mo/day	Inspection Type	Inspector	Fac Type
1 N 2 5	3 N H 0 0 0 1 4 6 5 11	12 9 9 0 5 2 1 17	18 C	19 S	20 2

Remarks: 21 ____ 66

Inspection Work Days	Facility Self-Monitoring Evaluation Rating	B1	QA	Reserved	Reserved
67 4 0 69	70 4	71 N	72 N	73 74	75 80

Section B: Facility Data

Name and Location of Facility Inspected (*For industrial users discharging to POTW, also include POTW name and NPDES permit number*)

PSNH Merrimack Station
97 River Road
Bow NH 03304

Entry Time/Date: 9:00 AM 5/21/99
Exit Time/Date: 1:00 PM 5/21/99
Permit Effective Date: 7/25/92
Permit Expiration Date: 7/25/97

Name(s) of On-Site Represenative(s)/Title(s)/Phone and Fax Number(s)

Allan Palmer — Senior Engineer — Phone: 634-2439
Bruce Evans — Maint. Supervisor — Fax:

Other Facility Data

Name, Address of Responsible Official/Title/Phone and Fax Number

William Nadeau
VP Engineering and Operations
Phone: 860-665-5315
Fax: 860-665-6263
Contacted: ☐ Yes ☑ No

Section C: Areas Evaluated During Inspection (*Check only those areas evaluated*)

☑ Permit	☑ Flow Measurement	☐ Operations & Maintenance	☐ CSO/SSO (Sewer Overflow)
☑ Records/Reports	☑ Self Monitoring Program	☐ Sludge Handling/Disposal	☐ Pollution Prevention
☑ Facility Site Review	☐ Compliance Schedules	☐ Pretreatment	☐ Multimedia
☑ Effluent/Receiving Waters	☑ Laboratory	☐ Storm Water	☐ Other:

Section D: Summary of Findings/Comments (*Attach additional sheets of narrative and checklists as necessary*)

See attached report

DB 6/3

Name(s) and Signature(s) of Inspector(s)	Agency/Office/Phone and Fax Numbers	Date
Kendall L Perkins	NHDES/WD/SWQB (603)271-2457/7894	7/14/99
Signature of Mangement QA Reviewer: Charles I. Hirshberg, P.E.	Agency/Office/Phone and Fax Numbers: NHDES/WD/SWQB (603)271-2457/7894	Date: 7/14/99

EPA Form 3560-3 (Rev 9-94) Previous editions are obsolete.

Northeast Utilities System

07 Selden Street, Berlin CT 06037

Northeast Utilities Service Company
P.O. Box 270
Hartford, CT 06141-0270
(860) 665-5315
Fax (860) 665-6263

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March 4, 1998

Ronald G. Chevalier
Vice President - Fossil/Hydro Engineering
and Operations

D12113

Mr. Kendall L. Perkins Jr., Environmental Inspector
NH Department of Environmental Services
Surface Water Quality Bureau
64 No. Main Street, P.O. Box 2008
Concord, New Hampshire 03302-2008

Reference: Merrimack Station Compliance Sampling Inspection Report (C07862), K. L. Perkins to A. G. Palmer dated December 26, 1997.

Dear Mr. Perkins:

Merrimack Station
NPDES Permit No. NH0001465

In the December 26, 1997 Compliance Sampling Inspection (CSI) Report, Reference, you cite a pH excursion from the data tables submitted with the March 1997 Discharge Monitoring Report, and request more information to determine if the pH excursion constitutes a permit violation of the 6.5 SU limit. On March 25, a minimum pH of 6.44 SU was reported at Outfall 003 (Station S-0) while the minimum pH at the river inlet (Station N-5) was 6.87 SU. A summary of the data for the time frame in question is contained in the following table (All other values for the day were in the 6.8 range):

Merrimack Station River Monitoring Program March 25, 1997		
Time	pH at Station N-5	pH at Station S-0
12:45	6.89	6.77
13:00	6.89	6.77
13:15	6.87	6.77
13:30	6.88	6.78
13:45	6.88	**6.50**
14:00	6.88	**6.44**
14:15	6.88	6.76
14:30	6.88	6.79
14:45	6.88	6.80

As the data illustrate, two Station S-0 readings dropped sharply from an established baseline of 6.8 SU, falling to the minimum reading of 6.44 SU. There were no pH excursions at Station N-5. PSNH believes the two readings were likely due to a malfunction, e.g., debris on the in-situ probe, and do not represent a true pH concentration. Also, per EPA regulations 40 CFR Part 401.17, this event does not represent a permit violation since it was the only recorded excursion for the month and it did not exceed 60 minutes in duration.

PSNH would like to take this opportunity to review several observations we have made in the nearly thirty years of operating this extensive ambient monitoring program:

- River conditions are "seasonally stable". It is typical for the ambient pH of the river to fall below our discharge permit limit of 6.5 SU.
- The only impact from Merrimack Station on pH and dissolved oxygen, are from temperature increases and summertime aeration of the spray modules. There are brief periods during the year when, due to ambient conditions, the thermal and aeration process will cause the pH to decrease *or increase* by marginal amounts, typically 0.2 to 0.3 units. The Technical Advisory Committee has acknowledged that such temperature-induced impacts are fully permissible, and that existing monitoring is probably excessive.
- pH readings can vary significantly depending upon the water depth of the in-situ probe. Also, fluctuations on the order of 0.2 to 0.3 units can be expected based on the relative instrument uncertainty and drift of the monitoring equipment.
- Thermal impacts are considerable and should continue to be monitored.
- Equipment malfunctions that generate invalid data sometimes occur. Since use of malfunctioning equipment is not prescribed methodology for gathering data, such invalid data should be discarded rather than reported.

PSNH in its NPDES permit renewal application has requested that this monitoring program be reduced from continuous monitoring to periodic grab sampling because of the various issues discussed above. The request to downsize this program was based on our historical record, and on the potential of minimal impact to the river conditions. Beyond the established thermal affects, standard practices at Merrimack Station and the wastewater treatment capability make it highly unlikely that ordinary activities could alter the pH or dissolved oxygen concentrations of the enormous volumes of cooling water.

As you know, PSNH considers environmental affairs as a top priority and sets a goal of absolute compliance. We hope this letter provides you all of your requested information. Allan G. Palmer, PSNH Fossil/Hydro, will call you to arrange a meeting to discuss these important matters further.

Very truly yours,
PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE

R.G. Chevalier

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