RESPONSE TO COMMENTS - DATED JUNE 24, 1992
REISSUANCE OF PERMIT NO. NH0001465
PSNH MERRIMACK STATION
BOW, NEW HAMPSHIRE

The U.S. Environmental Protection Agency (EPA) and the New Hampshire Department of Environmental Services (NHDES) solicited public comments from December 18, 1991 to February 15, 1992, for the draft National Pollutant Discharge Elimination System (NPDES) permit to be reissued to PSNH - Merrimack Station (PSNH). This permit is for the discharge of once-through cooling water, operational plant wastewater, process water, and storm-water runoff, including treated coal-pile runoff to the Merrimack River from Outfall 003.

During the public notice (comment) period, PSNH Merrimack Station and NHDES submitted comments on the draft permit. Following is a response to all these comments, including identification and explanation of those provisions of the draft permit which have been changed in the final permit.

These responses and associated comments are complimentary to the FACT SHEET and Draft Permit. For the reader to fully understand them, they should be familiar with the draft permit and the associated FACT SHEET, applicable National Pollutant Discharge Elimination System's (NPDES) permit regulations and State of New Hampshire's Water Quality Statutes and Regulations.

Lastly, the final permit was also developed in consultation with the United States Fish and Wildlife Service and the New Hampshire Fish and Game Department. Both agencies concur with the conditions and requirements of the final permit as they relate to their program areas of interest and concern.

COMMENT 1

The permittee requests the addition of bromine as an optional biocide to prevent excessive condenser fouling.

RESPONSE 1

EPA and the State have agreed that the permittee may use bromine as a biocide to control biological fouling in the condensers in conjunction with or without the sodium hypochlorite. Sufficient information has been obtained from several manufacturers and the literature to ensure protection of the downstream aquatic community. The maximum residual chlorine effluent limitation remains at 0.200 mg/l, without change. The term "Total Residual Chlorine" (TRC) is used when only chlorine is measured; however, when the same test protocol is used to measure bromine or bromine-chlorine combinations, the term "Total Residual Oxidants" (TRO) is used, reflecting the inclusion of bromine in the analysis. Because of the many bromine compounds used in the treatment of circulating cooling water systems, the permittee must advise EPA and the State of the specific bromine treatment system to be used at least 30 days before its use.

COMMENT 2

The permittee requests that condition, Part I.A.1.c. of the draft permit be modified to read as: "All solid materials except for naturally occurring materials such as leaves, branches, grass, and so forth, will be removed from the screens and have land disposal."

RESPONSE 2

EPA and NHDES agree with the permittee that these naturally occurring materials should remain in the River as protection for the aquatic community. This modification has been incorporated in the final permit.

COMMENT 3

The permittee requests that condition, Part I.A.1.j. of the draft permit be eliminated, since PSNH does not draw off tank-bottom water from the fuel tanks.

RESPONSE 3

EPA and NHDES are not authorizing the discharge of fuel-tank bottom drawoffs into the Merrimack River in this permit. Therefore, Part I.A.1.j. remains as a condition in the final permit.

COMMENT 4

The permittee requests that the visual monitoring condition for oil and grease (O&G) for Outfall 003 in the current permit be retained in the final permit.

RESPONSE 4

EPA and NHDES agree in part. PSNH will monitor O&G daily by visual observations; when an oil sheen is observed, the permittee is required to report the O&G concentration.

COMMENT 5

The permittee requests that the total residual chlorine (TRC) monitoring requirements at Outfall 003 be eliminated. If not eliminated, the permittee requests that the limits be calculated based on intermittent exposure as opposed to continuous exposure of the aquatic biota to TRC. And, if the calculated limits are below detection limits of the analytical equipment, then the limits should be the actual detection limits and not the calculated limits based on the in-stream water quality criteria for chlorine.

RESPONSE 5

The effluent limits for TRC in the final permit have not been changed, since the objective is to protect the aquatic community in the Merrimack River and to protect human health based on the consumption of contaminated fish. At the present time, there are no approved unsteady-state models to calculate transient end-of-pipe discharge concentrations from in-stream water quality criteria. In using a steady-state model; i.e., "instantaneous-complete mixing with the receiving water", EPA calculates the "worst-case" scenario of TRC-slug flow in the receiving stream.

In the Technical Support Document For Water Quality-based Toxics Control (EPA/505/2-90-001), the recommended approach for the situation where the calculated discharge limit is below the analytical detection limit, is to include the appropriate permit limit derived from the water quality model, regardless of its proximity to the analytical detection level. It is EPA-Region I policy to include the analytical detection level (ML) as the compliance limit in the permit.

No substantial toxicity data are available on exposure of the aquatic community to intermittent chlorination as practiced at Merrimack Station. If and when this information (approved intermittent water quality criteria, site specific studies, etc.) becomes available, EPA will reconsider the specification of a TRC effluent limit at Outfall 003; i.e., either revise its numeric value, higher or lower, or eliminate it and use existing chlorine

limits for both condenser discharges to regulate TRC to the receiving water in this permit.

COMMENT 6

The permittee requests the pH limits for Outfall 003 be modified to the range of 6.0 - 8.0 standard units (s.u.), and the continuous sampling measurement requirement be changed to hourly.

RESPONSE 6

The pH-discharge limits are State certification requirements. EPA is maintaining the draft permit, pH limits of 6.5 - 8.0 s.u. in the final permit. Moreover, NHDES asserts that pH be sampled continuously. If equipment outages are incurred, the permittee should have the equipment repaired.

COMMENT 7

The permittee requests the discharge limitations for O&G at Outfall 003A be eliminated and the daily-visual monitoring condition in the current permit be retained in the final permit.

RESPONSE 7

O&G discharge limits are required by effluent limitations guideline (ELGs) [see 40 CFR Part 423]. EPA is required to consider both technology-based and water quality-based requirements when developing permit limits. EPA regulations also require NPDES permits to contain the more stringent of the two effluent limits for each pollutant parameter. In this case, the ELGs for O&G are more stringent.

COMMENT 8

The permittee requests that the total copper discharge limit at Outfall 003A be eliminated, since the ELGs regulate copper discharges for chemical cleaning operations only, and not for routine-low volume discharges from ash settling ponds, for example.

RESPONSE 8

The ELGs do not establish copper limitations on low volume wastes, ash pile runoff, or storm water runoff (components of the ash pond discharge, Outfall 003A). The maximum total copper limitation of 0.2 mg/l is being maintained in accordance with the anti-backsliding provision of 40 CFR 122.44 (l). It is to be noted that the this discharge has shown an average total copper concentration of 0.0015 mg/l in the past two years.

COMMENT 9

The permittee requests the pH monitoring requirements in the current permit at Outfall 003A be retained in the final permit.

RESPONSE 9

The pH of four internal streams are monitored without limitation, because the combined flows from the condensers (Outfalls 001 and 002) with the ash pond discharges (Outfalls 003A and 003B) are released through cooling canal (Outfall 003) into the Merrimack River. This discharge point has a pH effluent limitation range of 6.5 to 8.0 s. u. in accordance with State Water Quality Standards. The permit requires a continuous recording of the discharge pH. There have been no known violations of the pH limitation beyond the naturally occurring values due to acid rain.

COMMENT 10

The permittee requests the O&G discharge limits at Outfall 003B be eliminated and replaced with daily visual monitoring.

RESPONSE 10

O&G discharge limits are technology-based requirements. These discharge limits will remain in the final permit. The reader is referred to Comment 7 for further discussion.

COMMENT 11

The permittee requests the existing copper discharge limit of 0.2 mg/l in the current permit as opposed to the 0.077 mg/l limit in the draft permit be retained at Outfall 003B.

RESPONSE 11

The 0.077 mg/l discharge limit in the draft permit is based on a hardness of 20 mg/l, as $CaCO_3$, for the Merrimack River (in the vicinity of Bow, NH) versus a hardness of 50 mg/l which was used in the current permit. In addition, the current Water Quality Standards (WQS) for the State (and subsequent to the issuance of the current permit) take into account a 10 percent factor for river-assimilation capacity. These two changes account for the difference (draft versus current permit) in copper discharge limits. The 0.077 mg/l discharge limit for copper will remain in the final permit.

COMMENT 12

The permittee requests the pH monitoring requirements in the current permit for Outfall 003B be retained in the final permit.

RESPONSE 12

The pH of four internal streams are monitored without limitation, because the combined flows from the condensers (Outfalls 001 and 002) with the ash pond discharges (Outfalls 003A and 003B) are released through cooling canal (Outfall 003) into the Merrimack River. This discharge point has a pH effluent limitation range of 6.5 to 8.0 s. u. in accordance with State Water Quality Standards. The permit requires a continuous recording of the discharge pH. There have been no known violations of the pH limitation beyond the naturally occurring values due to acid rain.

COMMENT 13

The permittee requests the statement: "No weekend chemical(s) are allowed" be deleted from Part I.A.6.d.

RESPONSE 13

EPA and the State agree. This condition is discussed under State certification requirements, Part I.C.1.d.

COMMENT 14

The permittee requests daily-visual monitoring for O&G versus an annual monitoring requirement, at Outfall 004; see Part I.A.7.a.

RESPONSE 14

This is a State certification requirement. Subsequent to the public notice period, NHDES modified the O&G condition. In the final permit, there is a daily-visual monitoring requirement with sampling, only if an oil sheen is observed.

COMMENT 15

The permittee requests daily-visual monitoring for O&G versus once/outage monitoring requirement, for Outfall 005; see Part I.A.8.a.

RESPONSE 15

As is the case with Comment 14, this is a State certification requirement. Response 14 is applicable here. In addition, the term "outage" has been expanded to denote "annual outage".

COMMENT 16

The State has certified numerical pH limits of 6.5 to 8.0 s.u. for the discharges at Outfalls 004 and 005.

RESPONSE 16

No response is required here.

COMMENT 17

The permittee requests: daily-visual monitoring for O&G, elimination of total suspended solids (TSS) monitoring requirements, and elimination of pH discharge limits at Outfall 006; see Part I.A.9.a.

RESPONSE 17

Prior to the public-notice period, the State was certifying O&G, TSS, and pH discharge limits; and monitoring requirements for stormwater discharges, e.g., at Outfall 006. During the public-notice period, the State chose not to certify stormwater discharge limits/monitoring requirements in the final permit. Therefore, these conditions do not appear in the final permit. However, EPA is requiring an annual reporting of O&G, TSS, pH, and a "no oil sheen" requirement.

COMMENT 18

The permittee requests that reference to the phrase <u>water box Station N-5</u> be eliminated from the first paragraph, last sentence of Part I.A.11.a., since temperature is not measured at Station N-5.

RESPONSE 18

EPA and the State agree. This phrase has been eliminated in the final permit.

COMMENT 19

The permittee requests that the paragraph concerning continuous monitoring of dissolved oxygen (DO) of both an ambient river control station and the circulating water discharge (see Part I.A.12.b.) be eliminated on the grounds that the DO system is difficult to maintain and no violations have occurred in approximately 20 years of data acquisition.

RESPONSE 19

EPA and the State agree in part. New Hampshire class specific criteria apply for DO. The State is approving a DO discharge

limit of 75% saturation (minimum); with monthly monitoring requirements. For the present time, the permittee will continue to monitor DO of both an ambient river control station and the circulating water discharge (Part I.A.12.b. remains in effect in the final permit). Based on a review of both the monitoring data collected during the first 12 months after final-permit issuance, and previously acquired data, monitoring requirements for DO may be reduced or eliminated.

COMMENT 20

The permittee is requesting a modification of the State certified cooling canal dredging and power spray module maintenance requirements presented in Part I.C.1.g.

RESPONSE 20

NHDES revised the State Permit Conditions (SPCs) subsequent to the public-notice period. The revised SPCs do not include the dredging conditions. Part I.C.1.g. is not included in the final permit.

COMMENT 21

The permittee indicates that the impingement monitoring program (see Part I.A.10.a.) as outlined in the existing (current) permit is still appropriate and should be retained with a provision that the New Hampshire Fish and Game Department (NHFGD) can enact weekly monitoring when it is determined that significant numbers of juvenile clupeids are likely to migrate past the station.

RESPONSE 21

At the permittee's request, the impingement monitoring conditions in the draft permit (Part I.A.10.a.) were authorized by EPA on September 23, 1987 upon recommendations from NHDES, NHFGD, and Unites States Fish and Wildlife Service (USFWS). As part of the downstream fish passage agreement; the NHFGD, the USFWS, PSNH and other State and federal agencies are negotiating an agreement relative to the downstream migration of anadromous fish at several hydroelectric facilities on the Merrimack River. When this agreement is finalized the technical advisory committee (TAC) may recommend revisions to the fish impingement and pump entrainment monitoring programs. Subsequent to the public-notice period, and at the present time however, the NHFGD and the NHDES, with the approval of the USFWS, submitted impingement and pump entrainment monitoring conditions (which are essentially the same as in the current permit) for inclusion in the final permit. These conditions are incorporated in the final permit as Parts I.A.10.b. and I.A.10.c., respectively.

COMMENT 22

The permittee requests that the pump entrainment condition in the draft permit should remain in suspension until such time as significant numbers of fish are restored to the River as defined in their previous discussion.

RESPONSE 22

The permittee is correct. The pump entrainment condition has been modified (essentially the same as in the current permit) for inclusion in the final permit. The reader is referred to Comment and Response 21 for further discussion.

COMMENT 23

The permittee requests that the permit condition (Part I.A.14.), be revised accordingly, since they have (at the close of the public notice period) submitted the referenced report and the 1991 update. In addition, the permittee states that annual summaries will be provided in March of every year.

RESPONSE 23

Part I.A.14 of the final permit has been modified to adequately substantiate the permittee's request.

COMMENT 24

The permittee questions the establishment of a technical advisory committee (TAC) [see Part I.A.15.], and requests direct participation and voting privileges in the committee. Also, NHDES requests a clarification to Part I.A.15.; i.e., TAC biologists are to be appointed by the appropriate Division/Branch Directors.

RESPONSE 24

The requested clarifications have been implemented in Part I.A.15. of the final permit.

COMMENT 25

NHDES requests the inclusion of language in Part I.A.16. which adequately reflects the approval-hierarchy for proposed revisions of existing/new biological and/or hydrological monitoring programs.

RESPONSE 25

In the final permit, Part I.A.16. has been expanded to clarify the roles of the permittee, TAC, Regional Administrator, and

Director in the proposed study to determine the effects of the Merrimack Station-thermal discharge on resident sensitive fish populations and anadromous aquatic life in the Merrimack River.

COMMENT 26

The permittee agrees that additional thermal plume studies are needed. However, the permittee seeks a more concise, general study plan, such as the NHDES proposed plan of August 26, 1991 (Correspondence: J. Andrews, NHDES, to N. Prodany, EPA) rather than the EPA-outlined study of Part I.A.17 of the draft permit.

RESPONSE 26

The experimental program (Part I.A.17.) as outlined by EPA is meant as a guide for the permittee to design, develop, and implement a study to determine the effects of the Merrimack Station-thermal discharge on resident sensitive fish populations and anadromous aquatic life in the Merrimack River and to define a T_{max} or "Delta-T" and/or other parameter that may be required to control the cooling canal discharge into the River. During the public-notice period, copies of the draft permit were sent to the senior biologists of EPA, NHDES, NHFGD, and USFWS for comments. As opposed to acknowledging all the detailed comments received in this document/Response to Comments, EPA has synthesized them into the final permit as Part I.A.17.

COMMENT 27

Both permittee and NHDES requested that if EPA upheld Part I.A.17.g. in the final permit, it should be separate and distinct from Part I.A.17.

RESPONSE 27

EPA agrees, the objective of Part I.A.17.g. in the draft permit is to expedite the study of alternate techniques of lowering the cooling water discharge temperature. The cost/benefit study will consist of approximate "order of magnitude" cost factors that will assist in the selection of cooling processes/equipment. This condition is incorporated in the final permit as Part I.A.20.

COMMENT 28

Because the available time-line between final permit issuance and initiation of the experimental program (Part I.A.17.) is decreasing to a point where successful data acquisition may be in jeopardy due to unforeseen and/or uncontrollable circumstances such as unsuitable climactic conditions; EPA and NHDES decided after the public comment period to expand the time-line in Part I.A.18. to include both interim and final reporting periods.

RESPONSE 28

Part I.A.18. has been amended and incorporated in the final permit.

COMMENT 29

NHDES requested the appropriate federal regulations citation for reopening of permits in Part I.A.19.

RESPONSE 29

The appropriate NPDES regulation has been cited in Part I.A.19. in the final permit.