

STATE OF NEW HAMPSHIRE
INTER-DEPARTMENT COMMUNICATION

Admin # 388

DATE November 15, 1973
FROM Arthur E. Newell, Supervisor *R.N.* AT (OFFICE) Fish and Game Department
Fisheries Research
SUBJECT Discharge - MK I and II

TO Mr. Terrence Frost
Water Supply and Pollution Control Commission
Prescott Park
105 Loudon Road
Concord, New Hampshire 03301

In reference to the recent comments of Dave Merrill relative to the discharge at Bow from MK I and II, I have the following comments to offer:

I should like to refer you to page 2, item I of the permit, from which I quote, "The Public Service Company of New Hampshire shall not at any time cause, directly or indirectly, the total temperature rise in the Merrimack River to exceed 5° Fahrenheit unless it can be demonstrated to the satisfaction of the Commission that greater rises at various times will not be harmful to fish, other aquatic life, or other uses. The artificial temperature increase shall not raise the temperature of the receiving water above 68° Fahrenheit for cold water fisheries, or 83° Fahrenheit for warm water fisheries. Cognizance will be given to reasonable time and distance to allow for mixing of the heated effluent and receiving waters. Such distance required for mixing shall be defined by the Commission from time to time as is necessary to meet the Class B water quality and uses."

By agreement with Eliot Priest and members of your department plus our department it was decided that the point of compliance with this item would be Station S-4, established for the Normandeau studies. In addition, it was agreed that Station N-10 would be utilized for measurements of ambient ΔT s. Therefore, considerable concentration has been devoted to temperature measurements at these two stations.

I should like to quote from the "Merrimack River Monitoring Program - A Report for the Study Period 1972, Prepared for Public Service Company of New Hampshire", Normandeau Associates, Inc., page 9, item 3. Temperature "...Monthly means of daily peak temperature Δt 's between Stations N-10 and S-4 during July, August, and September ranged from 6.6°F in July to 10.9°F in September, the month of lowest flows..." Spot checks by Biologist Philip Wightman during the summer of 1973 revealed that these conditions of excess ΔT s are continuing even with only one unit operating.

Mr. Terrence Frost (continued)

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In reviewing the most recent report submitted to me with Dave Merrill's reply entitled "Merrimack River Temperature and Dissolved Oxygen Studies 1972" the problem becomes apparent. Public Service Company is interpreting the permit differently than what we believed at the time of our acceptance of the permit and, I believe, differently from what the Water Supply and Pollution Control Commission intended.

The company is apparently measuring the entire vertical temperature profile at Stations N-10 and S-4 and then computing the mean temperature rise of the entire cross-section of the river. If this type of interpretation were to be permitted and this type of computation allowed it would not have been necessary to install the spray modules in order to meet the permit. It is our interpretation that the maximum temperature rise permitted at any point at Station S-4 would be 5°. Our department further classifies this river as a cold water fishery which places greater controls upon thermal discharges when receiving water temperatures exceed 68°F.

Since anadromous shad are now present in the Merrimack River, and since our new searun salmon hatchery is scheduled for completion in the fall of 1974, I feel that it is important to clarify the intent of the permit at this time so that timely corrective action might be taken if necessary.

AEN/pd

cc: D. N. Merrill, Executive Vice President
Public Service Company

Richard Buck, Water Pollution Commissioner