Merrimack Station
Thermal Plume Study and Cooling Water Intake Structure Review
MEETING AGENDA
USEPA, Boston
June 27, 2002

Attendees:

EPA: John King, Eric Nelson
NHDES: Jeff Andrews, George Berlandi,
NHF&G: William Ingham
Normandeau Associates: Don Kretchmer
PSNH: Alan Palmer.

Proposed Thermal Numeric Limits and Request for 316 (a) Variance

1. Thermal limits to be established at the "end-of-pipe"

2. Request for temperature variance to these limits
   - mixing zone (spatial and temporal parameters)
   - must ensure protection and propagation of balanced indigenous community

3. Supporting data and analyses
   - existing temperature data
   - development of three dimensional spatial model of thermal plume
   - additional data requirements

4. Existing temperature data and analyses
   - what do they reveal?

5. Development of predictive model
   - Purpose of modeling plume
   - Preferred model - Cormix 3
   - Model input parameters and assumptions
     - 7Q10 (Not flow base)
     - Station at full power, capacity
     - Average high ambient temperature for air, river water

6. Data requirements to support and confirm model
   - Review of design specifications
     - Physical characteristics of river, discharge channel, low flow scenarios (7Q10), long term water temperature data at various depths and locations

     Dye Studies ?
   - Modeling results, interpretation, and verification

7. Fisheries Data
   - What do they reveal?
     - Impedance to migration?
     - Habitat alteration or exclusion (to fish and forage species, other animals?)
     - Cold shock, acute thermal stress?
     - Attractive nuisance of plume? Alter spawning activity?
   - Species-specific concerns
   - Additional data collection requirements

Review of Merrimack Station's Cooling Water Intake Structure Under 316 (b) of CWA

1. Requirements under the CWA

2. Review of design specifications
   - Cooling water requirements (MGD): Percent of 7Q10:
   - Intake Structure:
     - Number of Intakes:
     - Intake Dimensions:
     - Approach Velocity: Ft/sec.
     - Distance Above Substrate:
     - Distance below MLW (low flow):
   - Traveling Screens:
     - Mesh Size:
     - Operation Schedule:
     - Screen Wash Pressure: Low - none High - 100 psi
     - Screen Inspection for Fish/Debris?:
     - Unusual Impingement Event Threshold:
     - Last Reported Event:
       Duration:
   - Fish Return System: Yes/No - No
     - Fish Return Design: n/a
     - Discharge Location:
     - Location Relative to Intake:
     - Discharge Above/Below MLW If above, how high?
     - Discharge Into: Water/Rip Rap/Other:
   - Bio-fouling Control Agents:
     - Type(s): Chlorine (sodium hypochlorite)
     - Concentration:
     - Frequency of Use:
     - Dosing period:
     - Point of injection within CWIS:

3. Impact to Fish
   - Species and lifestage-specific concerns
   - Existing data and analyses

- Need for additional data?

4. How to proceed