



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION I

J. F. KENNEDY FEDERAL BUILDING, BOSTON, MASSACHUSETTS 02203

50-443

August 25, 1982

Mr. Frank J. Miraglia
Chief, Licensing Branch No. 3
Division of Licensing
Nuclear Regulatory Commission
Washington, D.C., 20555

Subj: Seabrook DES Comments regarding the Preliminary
Draft NPDES Permit.

Ref: USNRC letter Frank J. Miraglia to T. E. Landry
dated July, 1982.

Dear Mr. Miraglia:

Upon review of the comments provided in the referenced letter, T. Landry contacted your John Lehr to coordinate those questions and comments for EPA response. Attached are the responses agreed upon.

EPA, Region I, has received only one set of comments directly. These comments were from Public Service Company of New Hampshire (PSCNH letter, Bruce W. Smith to T. E. Landry, dated July 6, 1982) and a response was sent to Public Service Company with a copy to Mr. Louis L. Wheeler (USEPA letter, Edward K. McSweeney to Bruce W. Smith, dated July 15, 1982).

Should you have any questions concerning the NPDES Permit responses, please contact T. E. Landry at 617-223-5033.

Sincerely yours,

Stephen F. Ells
Stephen F. Ells, Director
Office of Intergovernmental Liaison

Attachments

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Comments of Mr. Andrew Robertson/Lou Butler

- Comment #2 There is no confusion between the DES and the Preliminary Draft NPDES Permit in terminology for Chlorination. The permit restricts the biocide to only chlorine type compounds while the permittee has chosen the specific chemical, sodium hypochlorite, as the source of the chlorine.
- Comment #3 The monitoring program for the Preliminary Draft NPDES Permit is based upon the following: the Steam Electric Power Generation Source Guidelines and the Water Quality Criteria of the receiving water. In review of the Table 4.3, "Chemical added to Discharge" the amount of chlorine being used is controlled through limitations on the Total Residual Oxidants. The acid and caustic materials are controlled through pH limitations. No chemical in this listing appears in the list of 129 Priority Pollutants.
- Comment #5 The use and control of chlorine as a biofouling agent is in accordance with the Steam Electric Power Generation Source Guidelines and its supporting "Development Document for Effluent Limitations Guidelines and Standards for the Steam Electric Point Source Category." The Chlorine Minimization Program will empirically explore the unique combination of biological fouling organisms, water characteristics, and types of equipment at Seabrook Station. The program will be a minimum of 18 months to cover seasonality problems.
- Comment #6 The Chlorine Minimization Program required by the NPDES Permit Program will provide "the precise" measurements of the Total Residual Oxidants in the discharge under actual operating conditions as well as the amount of sodium hypochlorite that was used since only estimates can now be made.
- Comment #7 The values for the effluent limitations for the NPDES Permit were based upon the Steam Electric Power Generation Source Guidelines, water quality requirements of the receiving waters, and the "Development Document of Effluent Limitations Guidelines and Standards for the Steam Electric Point Source Category."

Comment #8 The monitoring parameters and the effluent limitations are in accordance with the Steam Electric Power Generation Source Guidelines and the water quality requirements of the receiving waters. The NPDES Permit may be modified based upon the results of the Chlorine Minimization Program upon approval by the Regional Administrator and the Executive Director.

Comments of Mr. Richard L. Kaufmann

Comment #2 The staff recommendation of 0.1 mg/l of Total Residual Oxidant is based upon the chlorination of one of the two Seabrook Units at a time for two hours with a Total Residual Oxidant concentration of 0.2 mg/l from that single unit. This unit discharge would then be diluted to 0.1 mg/l when the two units/discharges were combined. Therefore, there is no change in chlorination discharge requirements: the discharge still must contain no more than 0.2 mg/l of Total Residual Oxidants. However, the staff recommendation for the duration of the chlorination cycle of 2 hours per unit has been changed to continuous chlorination during the appropriate seasons for crustacean control. This concept of crustacean control has been recognized for controlling mussels and barnacles on the Atlantic Coast in the proposed "Effluent Limitations Guidelines for Steam Electric Power Generating Point Source Category (40 FR 200 p. 68328).

Comment #3 Because of the high velocity of the discharge from the diffuser, 15 feet/second, there will be no resident organisms in the discharge plume. The plume will not impinge upon the ocean floor and impact benthic organisms. Therefore, any organism either motile or non-motile will have short transitory periods within the plume. The Total Residual Oxidant level will be reduced from the permitted 0.2 mg/l discharge concentration by a factor of 10 to 100 because the diffuser discharge will passively entrain about 10 times its volume with cold ocean water and the ocean water thus entrained will exert a chemical demand upon Total Residual Oxidants present. It is anticipated that the near surface plume Total Residual Oxidant concentration level

will be between 0.02 to 0.002 mg/l, well below the chronic toxicity levels for most aquatic organisms. The operational biological monitoring program and the Chlorine Minimization Program will provide accurate data on the impact of the chlorination upon the aquatic community and the chemical concentration in the discharge.

Comment #4

The two quoted values, 848 lb/hr in Section 5.3.1 and 5.5×10^5 lbs/year in Table 4.3, are correct since the first figure is a flow rate at which the chlorine will be produced when the system is operating and the second figure indicates the total amount of chlorine that will be used in a calendar year. From this data, the permittee will chlorinate the discharge about 1/3 of the year assuming the full production rate of chlorine equipment. The comparison of the chlorine usage at Seabrook with other regional usage of chlorine for disinfection at municipal waste water treatment plants would yield little useful data, because the Seabrook offshore discharge cannot be compared to discharges at other locations in New Hampshire.

Comments of Ms. Jane Doughty

Comment p.14

The NPDES Permit requires that a careful Chlorine Minimization Program be initiated by the permittee to reduce the chlorine consumption to a minimum consistent with efficient operation of the facility. The discharge limitation of Total Residual Oxidants to 0.2 mg/l includes all concurrent chlorination programs: condenser intake water system, service water system, and any condenser booster dosages for slime control. This 0.2 mg/l limitation is applicable whether one unit or two units are operating. The NPDES Permit will be modified based upon the results of the Chlorine Minimization Program upon the approval of the Regional Administrator and the Executive Director.