



State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF ENVIRONMENTAL QUALITY
JOHN FITCH PLAZA, P. O. BOX 1390, TRENTON, N. J. 08625

August 22, 1973

Director of Regulation
U. S. Atomic Energy Commission
Washington, D. C. 20545

Refer to: Docket No. 50-219

Dear Sir:

Attached are comments relating to the Draft
Environmental Statement for Oyster Creek 1.

Very truly yours,

John J. Russo
John J. Russo, Chief
Bureau of Radiation Protection

JJR:dg
Encl.

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Comments on Sections 5.3 through 5.4

1. The manner in which the material and dose calculations have been presented in this section does not lend itself to an independent verification of many parameters or the radiation dose values. No reference as to the critical radionuclides, other than airborne ^{131}I , was mentioned within the presented material.

2. Certain portions of this section describing the radiological impact on the biota and man have been based on calculated estimates of the annual releases of radioactive materials. In addition, bioaccumulation factors taken from the open literature were utilized to evaluate the uptake of radionuclides from the liquid effluents into the various marine flora and fauna. In view of the fact that detailed environmental data have been documented by several governmental agencies (the State of New Jersey, the U.S. Environmental Protection Agency, and the U.S. Atomic Energy Commission), the State objects to the omission of the documented data (and the interpretation) into this section of the report. Since no actual environmental data were considered in the evaluation, some of the basic theoretical assumptions and parameters may be too conservative in some cases and may be grossly exaggerated in other cases. For example, the bioaccumulation factors stated for Mn in Table 5.1 for mollusk and algae, appear to be two orders of magnitude greater than

the actual values based on empirical data. The bioaccumulation factors for Co and Mn for crustacea also appear to be several orders of magnitude greater than the actual values. Studies conducted by the State of New Jersey and the U.S. Environmental Protection Agency have indicated that very little ^{60}Co , ^{58}Co , and ^{54}Mn have been incorporated in crustacea from Barnegat Bay. The incorporation of these nuclides in crustacea was significantly less than that of shellfish. Therefore, the stated dose estimates based on the ingestion of these marine organisms would be greater than the actual values.

3. Dose rate values to crustaceans and mollusks living on the bottom sediments in the cooling water outfall have been estimated without defining the accumulation factor of radioactive materials in sediments.

4. No consideration has been given to the radiation dose to be incurred from the dredging of the discharge canal. Due to the severe sedimentation of Oyster Creek, the facility shall have to dredge the stream periodically in order to permit access of small vessels to the commercial marinas. Data collected by the State verifies radioactivity concentrations in sediment of the order of 30 to 40 pCi/g - dry for ^{60}Co and ^{54}Mn . If the dredged material was to be deposited on the banks of Oyster Creek, the resultant radiation dose to a fisherman on the stream bank would be very significant.

5. Since there is a great variation in the radioactive gaseous and aqueous effluents from the plant due to practices in waste treatment and the dependence of leakage rates on operating time, the estimated dose values should be evaluated in terms of a range rather than some finite numerical value.

6. H. Beck of the U.S. Atomic Energy Commission Health and Safety Laboratory has measured the offsite external radiation dose contributions from the radioactive gaseous plume during periods of operation in 1972. The data accumulated and reported by H. Beck should be incorporated into the report.

7. The report does not specify whether the ^{131}I thyroid dose calculations were based on the release of iodine in the form of I_2 . Studies conducted by C. Pelletier, Environmental Protection Branch, Directorate of Regulatory Operations, U.S. Atomic Energy Commission, indicate that over 80% of the ^{131}I released from the steam-jet-air ejector of Oyster Creek NGS was organic iodide. If this fact was not included in the parameters utilized for the calculation of the thyroid dose of a child drinking milk, then the stated thyroid dose value of 5.6 mrem/year is overestimated.

Comments on Section 6.2

The facility's current Environmental Radioactivity Monitoring Program, as outlined in Table 6.1, of the report, is very inadequate in terms of providing meaningful data in order to assess the radiological impact of the gaseous and aqueous discharges from the plant. This statement is based upon the State's knowledge of the current surveillance program maintained by the facility and upon independent measurements conducted by the State. Basically, if governmental agencies, namely the U.S.E.P.A. and the State of New Jersey, had not implemented detailed environmental surveillance programs of the facility, little or no data relative to the offsite abiotic and biotic accumulation of facility-related radionuclides would be available for evaluation.

The State finds the current radiation monitoring program outlined by the Oyster Creek Nuclear Generating Station inadequate in the following areas:

1. the use of film badges for the measurement of the external radiation dose due to the radioactive gaseous plume discharged from the facility. The State recommends the use of sensitive thermoluminescent dosimeters for measuring the integrated or quarterly radiation dose and the use of sensitive pressurized ionization chambers for measuring the instantaneous plume dose.
2. the positioning of the film badge dosimeters have not been predicated on theoretical data estimating the offsite locations of the maximum population dose.

3. the use of low-volume air samplers for the measurement of airborne radionuclides.

4. the failure to position the air samplers at locations of the predicted maximum ground level concentrations.

5. the failure to incorporate a means to evaluate the offsite airborne radioiodine originating from the plant.

6. the failure to analyze the air particulate filter samples, soil, vegetation, and precipitation for gamma-ray emitting radionuclides.

7. the failure to analyze surface water from Barnegat Bay and Oyster Creek for tritium, ^{89}Sr , ^{90}Sr , and gamma-ray emitting radionuclides.

8. the performance of unrelated radiochemical analyses (^{40}K , ^{226}Ra , ^{228}Ra) of surface water.

9. the collection of a monthly grab sample of Oyster Creek rather than having a continuous water sampling system.

10. the failure to analyze bottom sediment (silt) for gamma-ray emitting radionuclides.

11. the performance of somewhat meaningless gross alpha and beta analyses of clams taken from Barnegat Bay.

12. the failure to conduct a ^{89}Sr analysis on clams.

13. the failure to sample and analyze (radiochemically) the common benthic algae, aquatic plants, fin fish and other marine organism of Oyster Creek and Barnegat Bay.