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TELEPHONE: AREA 704
373-4083

December 22, 1975

Mr. Norman C. Moseley, Director
U. S. Nuclear Regulatory Commission
Suite 818
230 Peachtree Street, Northwest
Atlanta, Georgia 30303

Re: Oconee Nuclear Station
Docket Nos. 50-269, -270, -287

Dear Mr. Moseley:

My letter of October 28, 1975, submitted pursuant to the requirements of Oconee Technical Specification 6.6.2.6.c, described a condition in which a measured level of radioactivity from an aquatic vegetation sample exceeded the control level by greater than ten times. This report stated that the buildup of activity in aquatic vegetation collected in the discharge area is to be expected due to the normal discharge of radioactive effluents. The following supplemental information is submitted to provide an evaluation of release conditions, environmental factors, and other aspects necessary to explain this condition:

The expected buildup of activity in organisms living in station effluents is discussed on pp. 130-133 of the Final Environmental Statement for Oconee Nuclear Station. From the information provided in FES, it is possible to calculate the concentrations one would expect to see in aquatic vegetation samples collected from the vicinity of the liquid effluent release point; the specific information required is:

1. The tailrace concentrations of the radionuclides found in the aquatic vegetation samples, discharged as radioactive waste. These concentrations can be calculated from the liquid effluent release information provided in the Semiannual Operating Report for the period ending June 30, 1975. The tailrace concentrations calculated in this manner compare favorably with those presented in Table III-12 of the FES for anticipated annual tailrace concentrations.

2. The biological accumulation factors for the radionuclides found in the aquatic vegetation samples. The biological accumulation factors used in the calculation of expected concentrations in aquatic vegetation are those found in Table V-7 of the FES.

3. The conversion factor to convert from wet weight to dry weight of aquatic vegetation. The aquatic vegetation sample collected on August 8, 1975 from Location 000.4 weighed 500 grams on wet weight basis and 18.63 grams on a dry weight basis.

The following table summarizes this data and provides a comparison of expected and actual concentrations:

Isotope	H_2O Conc.	Bioaccumulation Factor	Expected Vegetation Conc.	Actual Vegetation Conc.
	μCi/ml		pCi/g dry wt.	pCi/g dry wt.
^{134}Cs	7.74×10^{-11}	25000	52	10±3
^{137}Cs	2.40×10^{-10}	25000	161	24±3
^{58}Co	2.15×10^{-9}	2500	144	128±10
^{60}Co	4.23×10^{-10}	2500	28	77±10

Additional aquatic vegetation samples from the effluent discharge area were collected on October 24, 1975; the results, obtained from the analysis of these samples, indicate higher concentrations of the above listed radionuclides and in addition indicate the presence of manganese -54 and iodine -131. The sampling area is the old Keowee riverbed. This area fills with water during operation of the hydro and retains water in a backwater eddy when the hydro is not operating. This encourages the accumulation of radionuclides in aquatic vegetation and silt. The eddy-water concentrations of the radionuclides present in aquatic vegetation, are probably not average tailrace concentrations, but concentrations somewhere between 10 CFR 20 mpc discharge concentrations and the final effluent dilution concentrations resulting from operation of the hydro since radioactive effluent releases are also made when the hydro plant is not operating. This explains the higher concentrations seen in the follow-up aquatic vegetation samples.

Very truly yours,

William O. Parker, Jr.

EDB:mmb