NRC FORM 195 (2-76)

U.S. NUCLEAR REGULATORY COMMISSION

NRC DISTRIBUTION FOR PART 50 DOCKET MATERIAL

DOCKET NUMBER: 50-269

FILE NUMBER:

TO: MR B C RUSCHE

FROM: DUKE POWER CO
CHARLOTTE, NC
W O PARKER JR

DATE OF DOCUMENT: 4-15-76

DATE RECEIVED: 4-19-76

X LETTER
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PROP

INPUT FORM

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DESCRIPTION
LTR RE THEIR 4-13-76 LTR.....AND 4-15-76 LTR.....ADVISING OCONEE 3, CYCLE 1 HAVE BEEN IMPOSED ON OCONEE 1, CYCLE 3 OPERATION UNTIL THE UNIT IS SHUTDOWN FOR HOLDER TUBE REMOVAL.....

ENCLOSURE

ACKNOWLEDGED

DO NOT REMOVE

PLANT NAME: OCONEE #1

SAFETY — FOR ACTION/INFORMATION — ENVIRO 4-27-76 RKCB

	SAFETY		ENVIRO
	ASSIGNED AD :		ASSIGNED AD :
X	BRANCH CHIEF : (6)	Purple	BRANCH CHIEF :
	PROJECT MANAGER:		PROJECT MANAGER :
X	LIC. ASST. :	SHEPPARD	LIC. ASST. :

INTERNAL DISTRIBUTION

X	REG FILE		SYSTEMS SAFETY		PLANT SYSTEMS		ENVIRO TECH
X	NRC PDR		HEINEMAN		TEDESCO		ERNST
X	I & E (2)		SCHROEDER		BENAROYA		BALLARD
X	OELD				LAINAS		SPANGLER
	GOSSICK & STAFF		ENGINEERING		IPPOLITO		
	MIPC		MACCARY				SITE TECH
	CASE		KNIGHT		OPERATING REACTORS		GAMMILL
	HANAUER		SIHWEIL		STELLO		STEPP
	HARLESS		PAWLICKI				HULMAN
					OPERATING TECH		
	PROJECT MANAGEMENT		REACTOR SAFETY	\	EISENHUT		SITE ANALYSIS
	BOYD		ROSS	\	SHAO		VOLLMER
	P. COLLINS		NOVAK	\	BAER		BUNCH
	HOUSTON		ROSZTOCZY	\	SCHWENCER	\	J. COLLINS
	PETERSON		CHECK	\	GRIMES		KREGER
	MELTZ						
	HELTEMES		AT & I		SITE SAFETY & ENVIRO		
	SKOVHOLT		SALTZMAN		ANALYSIS		
			RUTBERG		DENTON & MULLER		

EXTERNAL DISTRIBUTION

X	LPDR: WALHALLA, SC		NATL LAB		BROOKHAVEN NATL LAB
X	TIC		REG. V-IE		ULRIKSON(ORNL)
X	NSIC		LA PDR		
	ASLB		CONSULTANTS		
	ACRS 16 HOLDING/SENT				

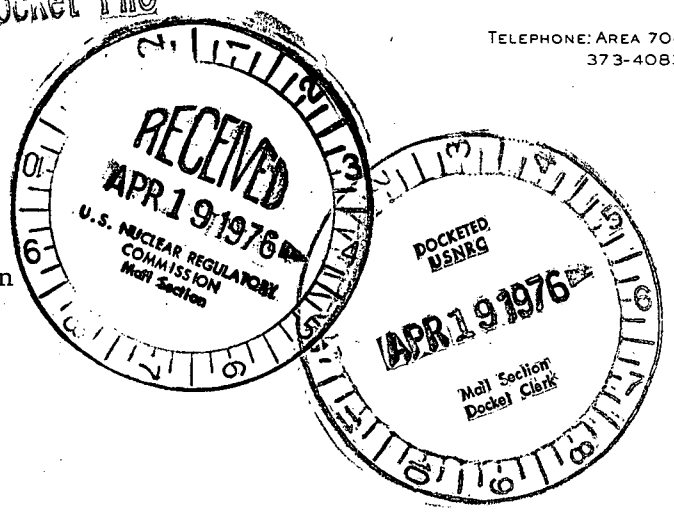
CONTROL NUMBER: 3938

DUKE POWER COMPANY
POWER BUILDING
422 SOUTH CHURCH STREET, CHARLOTTE, N. C. 28242

WILLIAM O. PARKER, JR.
VICE PRESIDENT
STEAM PRODUCTION

TELEPHONE: AREA 704
373-4083

Regulatory Docket File



April 15, 1976

Mr. Benard C. Rusche
Director of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Re: Oconee Unit 1
Docket No. 50-269

Dear Mr. Rusche:

My letter of April 13, 1976 identified that as a result of inspections performed at another Babcock and Wilcox reactor, which revealed evidence of wear to the reactor vessel surveillance specimen holder tube journal bearings that it was anticipated that Oconee 1 would be shutdown in the near future to remove the holder tubes and associated spring loaded retaining devices for the duration of Cycle 3 operation.

My letter of April 15, 1976 in reference to Oconee 3 transmitted proposed changes to the Oconee Nuclear Station Technical Specifications. These proposed specifications provided limiting conditions for operation for Oconee 3, Cycle 1 to assure that the possibility of further degradation of the reactor vessel surveillance specimen holder tubes is minimized and to assure that, in the unlikely event of such an occurrence, a failed holder tube could be detected and corrective action taken. Similar changes to the Oconee Technical Specifications have not been proposed for Oconee 1 operation until the previously identified shutdown is accomplished as that shutdown is imminent. However, restrictions consistent with those proposed for Oconee 3, Cycle 1 have been imposed on Oconee 1, Cycle 3 operation until the unit is shutdown for holder tube removal.

Very truly yours,

William O. Parker, Jr.

DCH:mmb

3938

DUKE POWER COMPANY
POWER BUILDING
422 SOUTH CHURCH STREET, CHARLOTTE, N. C. 28242

WILLIAM O. PARKER, JR.
VICE PRESIDENT
STEAM PRODUCTION

TELEPHONE: AREA 704
373-4083

April 2, 1976

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:

Pursuant to the requirements of Oconee Nuclear Station Technical Specification 6.6.2.2.d, this report is submitted describing a condition in which a measured level of radioactivity exceeded the control level by greater than four times, but less than ten times.

On March 25, 1976, analytical results of a well water sample collected on January 8, 1976 were reviewed. Given below is a summary of the pertinent results of the radioactive concentrations of this sample:

Sample Location	Type of Sample	Gross Alpha pCi/l	Gross Beta pCi/l
015 Farm Within 5 mile radius (Control)	Well	$(7.72 \pm 3.64)E-1$	$(9.67 \pm 4.89)E-1$
014 Old Highway 183	Well	$(3.42 \pm 0.83)E0$	$(4.77 \pm 0.69)E0$

It is considered that these results are due to the statistical fluctuation of naturally occurring radionuclides in well water since Oconee does not make any ground releases of radionuclides.

Very truly yours,

W. O. Parker, Jr.

William O. Parker, Jr. By MST

MST:mmb

DUKE POWER COMPANY
POWER BUILDING
422 SOUTH CHURCH STREET, CHARLOTTE, N. C. 28242

WILLIAM O. PARKER, JR.
VICE PRESIDENT
STEAM PRODUCTION

TELEPHONE: AREA 704
373-4083

March 31, 1976

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:

Pursuant to the requirements of Oconee Nuclear Station Technical Specification 6.6.2.2, this report is submitted describing a condition in which measured levels of radioactivity exceeded the control levels by greater than ten times. A description of a condition in which a measured level of radioactivity exceeded the control level by greater than four times, but less than ten times is also provided.

On March 26, 1976, semiannual analytical results of bottom sediment and aquatic vegetation samples collected on February 17, 1976 were reviewed. Listed below is a summary of the pertinent results:

Sample Location	Type of Sample	Radionuclide Concentrations
006.2 Clemson Water Intake Hartwell Reservoir (Control)	Bottom Sediment	Mn-54 < 2E-2 pCi/gm (dry) Co-58 < 2E-2 pCi/gm (dry) Co-60 < 2E-2 pCi/gm (dry) Cs-134 2.59E-1 ± 0.34E-1 pCi/gm (dry) Cs-137 4.27E-1 ± 0.43E-1 pCi/gm (dry) 1-131 < 7.0E-2 pCi/gm (dry)
000.4 Near Liquid Effluent Release Point	Bottom Sediment	Mn-54 3.10E-1 ± 0.36E-1 pCi/gm (dry) Co-58 9.04E-1 ± 0.90E-1 pCi/gm (dry) Co-60 4.31E-1 ± 0.45E-1 pCi/gm (dry) Cs-134 3.67E-1 ± 0.37E0 pCi/gm (dry) Cs-137 6.38E0 ± 0.64E0 pCi/gm (dry) 1-131 3.52E-1 ± 1.18E-1 pCi/gm (dry)
000.5 1 mile radius of site Lake Keowee (Control)	Aquatic Vegetation	Co-58 < 1E-1 pCi/gm (wet) Cs-134< 1E-1 pCi/gm (wet) Cs-137< 1E-1 pCi/gm (wet)

005.2 Hwy. 127 Bridge	Aquatic Vegetation	Co-58	1.03E0 ± 0.10E0	pCi/gm (wet)
		Cs-134	1.16E0 ± 0.12E0	pCi/gm (wet)
		Cs-137	2.30E0 ± 0.23E0	pCi/gm (wet)

The expected buildup of activity in sediment downstream from the station effluent release point has been calculated using the following formula from WASH 1258, p. F25:

$$S_i = 2.5E\text{-}3 \times T_i \times C_i \times W \times (1 - e^{-\lambda i^{TL}})$$

W - stream width factor - 0.2

TL - station life

T_i - half life of radionuclide i

C_i - concentration of radionuclide i in water in pCi/l

λ_i - decay constant of radionuclide i

Using this formula, it is possible to calculate the expected concentrations in bottom sediment samples collected downstream of the liquid effluent release point. The specific information required to perform this calculation is the tailrace concentrations of the same radionuclide as found in the sediment samples, discharged as radioactive waste. The concentrations are based on effluent discharges for January and February 1976. These tailrace concentrations were a factor of ten greater than those presented in Table III-12 of the FES for anticipated annual tailrace concentrations.

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

Radionuclide	Water Concentration µCi/ml	Expected Sediment Concentration pCi/g	Actual Sediment Concentration pCi/g
^{54}Mn	1.41E-10	1.92E0	(3.10 ± 0.36)E-1
^{58}Co	2.76E-09	9.85E0	(9.04 ± 0.90)E-1
^{60}Co	6.56E-10	1.99E0	(4.31 ± 0.45)E-1
^{134}Cs	2.58E-09	5.80E0	(3.67 ± 0.37)E0
^{137}Cs	4.13E-09	6.87E0	(6.38 ± 0.64)E0
^{131}I	5.57E-09	2.24E0	(3.52 ± 1.18)E-1

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 for this calculation is:

1. The tailrace concentrations of those radionuclides which were found in the aquatic vegetation samples, discharged as radioactive waste. These concentrations are based on effluent discharges for January and February 1976. The tailrace concentrations are a factor of 10 greater than those presented in Table 111-12 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.

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.
	Ci/ml		pCi/g wet wt.	pCi/g wet wt.
^{134}Cs	2.58×10^{-9}	25000	64.5	$(1.16 \pm 0.12)E0$
^{137}Cs	4.13×10^{-9}	25000	103	$(2.30 \pm 0.23)E0$
^{58}Co	2.76×10^{-9}	2500	6.9	$(1.03 \pm 0.10)E0$

With both bottom sediment and aquatic vegetation samples, the calculated or expected concentrations of radionuclides, based on effluent releases, are greater than those actually determined by laboratory analyses. The calculated concentrations of radionuclides in bottom sediment and aquatic vegetation are based on tailrace concentrations a factor of ten greater than those presented in Table 111-12 of the FES. The tailrace concentrations are high due to an error in the method for calculating effluent release rates as discussed in NRC/OIE Inspection Reports No. 269/76-2, 270/76-2, and 287/76-2. The method for calculating effluent release rates has been corrected; in the future, the concentrations of radionuclides in bottom sediment and aquatic vegetation samples should level off or decrease due to this correction.

Very truly yours,

W. O. Parker, Jr.

William O. Parker, Jr. By

MST:mmb