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 50-270 Oconee Nuclear Station, Unit 2, Duke Power Co. 05000270  
 50-287 Oconee Nuclear Station, Unit 3, Duke Power Co. 05000287

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O'REILLY Region 2, Office of Director

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	NRR/DL/GRAB 09	1	1	NRR/DSI/METB		2	2
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EXTERNAL:	LPDR 03	1	1	NRC PDR 02		1	1
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DUKE POWER COMPANY  
OCONEE NUCLEAR STATION  
ENVIRONMENTAL MONITORING REPORT

January 1, 1981 - December 31, 1981

8504100331 811231  
PDR ADOCK 05000269  
R PDR

IE25 1/1  
82-84

Oconee Nuclear Station  
Annual Environmental Radiological Monitoring Program  
Operating Report

Table 1 summarizes the results of the Environmental Radiological Program for 1981. Table 2 provides the locations of milch animals within a 5 mile radius of the station as determined by the semi-annual census of milch animals.

Some unavoidable deviations from the routine sampling schedule occurred during the year. These deviations are tabulated below:

<u>Unavailable Analysis</u>	<u>Reason</u>
1) Air Filter/Cartridge	
a) (000), 2/4 - 2/10/81	Motor out of order
b) (009), 2/4 - 2/10/81	Motor out of order
2) Aquatic Vegetation	
a) (005.2), 2/10/81	Lake Hartwell water level low, no aquatic vegetation available
3) Commercial Crops	
a) (015), 3/31/81	Crops unavailable
b) (015), 6/30/81	Crops unavailable
c) (015), 9/30/81	Crops unavailable
d) (015), 12/31/81	Crops unavailable
4) Fish	
a) (000.5), 3/24/81	Forage fish-insufficient quantity

Unavailable AnalysisReason

- |                              |  |
|------------------------------|--|
| 5) Milk                      |  |
| a) (015-Fowler), 6/9/81      | Milk spoiled upon receipt-<br>no Low Level I-131 performed |
| 6) Rain and Settled Dust     |  |
| a) (000), 12/1/81            | Bucket split during transport                              |
| b) (000.1) 12/1/81           | Bucket split during transport                              |
| 7) Surface Water             |  |
| a) (000.6), 3/3/81           | Sample leaked out of container<br>during transport         |
| 8) TLD                       |  |
| a) (005), 12/17-3/31/81      | Missing from location                                      |
| b) (PB000.18), 12/17-3/31/81 | Missing from location                                      |
| c) (PB000.18), 3/31-6/24/81  | Missing from location                                      |
| d) (004), 6/24-9/23/81       | Missing from location                                      |
| e) (008), 6/24-9/23/81       | Missing from location                                      |
| f) (000.2), 9/23-12/30/81    | Missing from location                                      |

During the year, several sample types, primarily in the aquatic pathway and locations near the waste discharge area, showed activities that were statistically higher than their associated control locations. As was expected, aquatic vegetation at location 000.4 (immediately below the discharge point) showed Co-58, Co-60, Cs-134 and Cs-137, bottom sediment samples at location 000.4 and farther downstream at location 005.2 showed Co-60, Cs-134 and Cs-137 and fish samples at location 013 showed Cs-134 and Cs-137. Second and third quarter surface water composites showed H-3 levels that were statistically higher than background at location 000.7 and farther downstream at locations 005.2 and 013. The liquid effluents released from the station in each of these quarters were in accordance with release requirements. However, due to a lack of adequate rainfall in the area for the previous 18 months, Lake Hartwell was approximately 15 feet below full pond level which contributed to a reduced mixing area and insufficient dilution. Vendor analyses results for Sr-89 and Sr-90 on air particulate samples were higher than background for samples composited for March and samples composited for April. Since the Sr-89 and Sr-90 activities associated with gaseous releases from Oconee's vent stacks in March and April, prior to dilution, were lower than the activities measured at the sampling locations, it was concluded that the anomalous Sr-89 and Sr-90 activities were not the result of strontium released from Oconee.

Whenever any of the observed activities exceeded limits, reports were written (see last column of Table 1) as required by Technical Specifications. None of the observed activities resulted in a significant environmental dose potential or represent a hazard to the health and safety of the public.

Trend analyses for 1981 indicate no significant long-term positive trends in environmental media.

## ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM ANNUAL SUMMARY

OCONEE NUCLEAR STATION  
PICKENS COUNTY, SOUTH CAROLINA

DOCKET NUMBER 50-269,-270,-287  
JANUARY 1, 1981 - DECEMBER 31, 1981

Table 1

MEDIUM SAMPLED UNITS	TYPE & TOTAL NO. OF ANALYSES PERFORMED	(LLD)	ALL INDICATOR LOCATIONS MEANS (F) RANGE	LOCATION W/ HIGHEST ANN. MEAN NAME DIST/ DIRECTION	CONTROL LOCATIONS MEAN (F) RANGE 006 9.5 mi/SSE	NO. OF NON- ROUTINE REPORT MEAS.
AIR FILTER PCI/CUBIC MET. 4 LOCATIONS	ALPHA-T 206	0.00	2.70E-03( 143/ 154)	014	3.15E-03( 49/ 52)	1.69E-03( 48/ 52)
	BETA-T 206	0.01	1.29E-01( 154/ 154)	014	1.36E-01( 52/ 52)	7.48E-02( 52/ 52)
	MN-54 206	0.00	4.99E-04( 13/ 154)	014	7.14E-04( 8/ 52)	-1.04E-04( 1/ 52)
	FE-59 206	0.00	1.53E-03( 10/ 154)	014	1.83E-03( 5/ 52)	2.63E-03( 3/ 52)
	CO-58 206	0.00	1.62E-04( 3/ 154)	009	2.76E-04( 1/ 51)	-3.22E-05( 0/ 52)
	CO-60 206	0.00	8.45E-04( 12/ 154)	000	1.11E-03( 4/ 51)	4.75E-04( 4/ 52)
	ZN-65 206	0.00	-4.38E-04( 2/ 154)	000	-2.90E-04( 1/ 51)	3.05E-04( 0/ 52)
	ZR-95 206	0.00	8.49E-03-- 8.52E-03	000	8.52E-03-- 8.52E-03	0.00E-01-- 0.00E-01
	NB-95 206	0.00	6.25E-02( 108/ 154)	000	6.39E-02( 38/ 51)	3.12E-02( 35/ 52)
	I-131 206	0.07	3.16E-03( 26/ 154)	000	6.31E-03( 15/ 51)	5.39E-04( 1/ 52)
	CS-134 206	0.01	7.31E-05( 3/ 154)	014	2.47E-04( 1/ 52)	3.50E-04( 3/ 52)
	CS-137 206	0.01	5.03E-03( 81/ 154)	009	5.36E-03( 27/ 51)	2.73E-03( 14/ 52)
	BALA-140 206	0.00	9.00E-04( 8/ 154)	009	1.41E-03( 3/ 51)	8.31E-04( 2/ 52)
			3.48E-03-- 1.39E-02		6.38E-03-- 1.39E-02	8.09E-03-- 8.93E-03

MEAN BASED UPON ALL NET ACTIVITY MEASUREMENTS

RANGE BASED UPON DETECTABLE ACTIVITY MEASUREMENTS ONLY

ZERO RANGE INDICATES NO DETECTABLE ACTIVITY MEASUREMENTS

FRACTION OF DETECTABLE ACTIVITY MEASUREMENTS AT SPECIFIED LOCATIONS IS INDICATED IN PARENTHESES, (F)

## ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM ANNUAL SUMMARY

OCONEE NUCLEAR STATION  
PICKENS COUNTY, SOUTH CAROLINA

DOCKET NUMBER 50-269, -270, -287  
JANUARY 1, 1981 - DECEMBER 31, 1981

MEDIUM SAMPLED UNITS	I	TYPE & TOTAL NO. OF ANALYSES PERFORMED	I	(LLD)	I	ALL INDICATOR LOCATIONS MEANS (F) RANGE	I	LOCATION W/ HIGHEST ANN. MEAN NAME DIST/ DIRECTION	I	CONTROL LOCATIONS MEAN (F) RANGE 006 9.5 mi/SSE	I	NO. OF NON- ROUTINE REPORT MEAS.				
AIR FILTER	I		I		I		I		I		I					
COMPOSITE	I		I		I		I		I		I					
PCI/CUBIC MET.	I		I		I		I		I		I					
4 LOCATIONS	I		I		I		I		I		I					
	I	SR-89	I	48	I	0.00	I	9.93E-03( 19/ 36)	I	009	I	1.29E-02( 6/ 12)	I	5.46E-03( 5/ 12)	I	1
	I		I		I		I	1.30E-03-- 2.40E-02	I	14.5 mi/E	I	3.70E-03-- 2.40E-02	I	1.60E-03-- 1.10E-02	I	13
	I	SR-90	I	48	I	0.00	I	8.50E-04( 26/ 36)	I	014	I	1.04E-03( 9/ 12)	I	3.90E-04( 7/ 12)	I	1
	I		I		I		I	1.70E-04-- 5.20E-03	I	12.0 mi/SW	I	2.10E-04-- 5.20E-03	I	2.20E-04-- 7.40E-04	I	13

MEAN BASED UPON ALL NET ACTIVITY MEASUREMENTS

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FRACTION OF DETECTABLE ACTIVITY MEASUREMENTS AT SPECIFIED LOCATIONS IS INDICATED IN PARENTHESES. (F)

## ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM ANNUAL SUMMARY

OCONEE NUCLEAR STATION  
PICKENS COUNTY, SOUTH CAROLINA

DOCKET NUMBER 50-269,-270,-287  
JANUARY 1, 1981 - DECEMBER 31, 1981

MEDIUM SAMPLED UNITS	TYPE & TOTAL NO. OF ANALYSES PERFORMED	(LLD)	ALL INDICATOR LOCATIONS MEANS (F) RANGE	LOCATION W/ HIGHEST ANN. MEAN NAME DIST/ DIRECTION	CONTROL LOCATIONS MEAN (F) RANGE 014 2.0 mi/SW	NO. OF NON- ROUTINE REPORT MEAS.
GROUND						
WATER						
PCI/L						
2 LOCATIONS						
	ALPHA-T	8	0.50	2.57E-01( 2/ 4)	015 2.57E-01( 2/ 4)	4.47E 00( 3/ 4)
				3.24E-01-- 3.75E-01	12.0 mi/SSE 3.24E-01-- 3.75E-01	3.63E 00-- 9.68E 00
	BETA-T	8	1.00	9.58E-01( 2/ 4)	015 9.58E-01( 2/ 4)	7.76E 00( 4/ 4)
				1.20E 00-- 2.61E 00	1.20E 00-- 2.61E 00	2.10E 00-- 1.35E 01
	SR-89	8	10.00	< LLD ( 0/ 4)	< LLD	< LLD ( 0/ 4)
	SR-90	8	2.00	< LLD ( 0/ 4)	< LLD	1.80E 00( 1/ 4)
						1.80E 00-- 1.80E 00
	H-3	8	330.00	2.20E 02( 4/ 4)	015 2.20E 02( 4/ 4)	1.50E 02( 2/ 4)
				1.80E 02-- 2.50E 02	1.80E 02-- 2.50E 02	1.20E 02-- 1.80E 02
	MN-54	8	15.00	2.48E-01( 0/ 4)	015 2.48E-01( 0/ 4)	6.38E-01( 0/ 4)
				0.00E-01-- 0.00E-01	0.00E-01-- 0.00E-01	0.00E-01-- 0.00E-01
	FE-59	8	30.00	4.83E 00( 0/ 4)	015 4.83E 00( 0/ 4)	-1.75E 00( 0/ 4)
				0.00E-01-- 0.00E-01	0.00E-01-- 0.00E-01	0.00E-01-- 0.00E-01
	CO-58	8	15.00	-1.83E 00( 0/ 4)	015 -1.83E 00( 0/ 4)	2.04E 00( 0/ 4)
				0.00E-01-- 0.00E-01	0.00E-01-- 0.00E-01	0.00E-01-- 0.00E-01
	CO-60	8	15.00	5.28E-01( 0/ 4)	015 5.28E-01( 0/ 4)	1.34E-01( 0/ 4)
				0.00E-01-- 0.00E-01	0.00E-01-- 0.00E-01	0.00E-01-- 0.00E-01
	ZN-65	8	30.00	3.38E-01( 0/ 4)	015 3.38E-01( 0/ 4)	1.96E 00( 0/ 4)
				0.00E-01-- 0.00E-01	0.00E-01-- 0.00E-01	0.00E-01-- 0.00E-01
	ZR-95	8	20.00	4.20E 00( 1/ 4)	015 4.20E 00( 1/ 4)	-1.90E 00( 0/ 4)
				1.41E 01-- 1.41E 01	1.41E 01-- 1.41E 01	0.00E-01-- 0.00E-01
	NB-95	8	10.00	1.09E 00( 1/ 4)	015 1.09E 00( 1/ 4)	6.55E 00( 2/ 4)
				7.05E 00-- 7.05E 00	7.05E 00-- 7.05E 00	1.25E 01-- 1.28E 01
	I-131	8	15.00	1.31E-01( 0/ 4)	015 1.31E-01( 0/ 4)	1.96E 00( 1/ 4)
				0.00E-01-- 0.00E-01	0.00E-01-- 0.00E-01	6.35E 00-- 6.35E 00
	CS-134	8	15.00	-2.45E-01( 0/ 4)	015 -2.45E-01( 0/ 4)	1.80E 00( 0/ 4)
				0.00E-01-- 0.00E-01	0.00E-01-- 0.00E-01	0.00E-01-- 0.00E-01
	CS-137	8	15.00	8.89E-01( 0/ 4)	015 8.89E-01( 0/ 4)	-8.40E-02( 0/ 4)
				0.00E-01-- 0.00E-01	0.00E-01-- 0.00E-01	0.00E-01-- 0.00E-01
	BALA-140	8	15.00	-3.51E-01( 0/ 4)	015 -3.51E-01( 0/ 4)	-3.69E-01( 0/ 4)
				0.00E-01-- 0.00E-01	0.00E-01-- 0.00E-01	0.00E-01-- 0.00E-01

MEAN BASED UPON ALL NET ACTIVITY MEASUREMENTS

RANGE BASED UPON DETECTABLE ACTIVITY MEASUREMENTS ONLY

## ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM ANNUAL SUMMARY

OCONEE NUCLEAR STATION  
PICKENS COUNTY, SOUTH CAROLINA

DOCKET NUMBER 50-269,-270,-287  
JANUARY 1, 1981 - DECEMBER 31, 1981

MEDIUM SAMPLED UNITS	TYPE & TOTAL NO. OF ANALYSES PERFORMED	(LLD)	ALL INDICATOR LOCATIONS MEANS (F) RANGE	LOCATION W/ HIGHEST ANN. MEAN NAME DIST/ DIRECTION	CONTROL LOCATIONS MEAN (F) RANGE 000.3 0.6 mi/NNW	NO. OF NON- ROUTINE REPORT MEAS.
SURFACE						
WATER						
PCI/L						
6 LOCATIONS						
	ALPHA-D	71	0.50	1.44E-01( 19/ 59)	000.7 2.16E-01( 3/ 12)	1.57E-01( 3/ 12)
				1.58E-01-- 1.44E 00	0.9 mi/ESE 1.83E-01-- 1.44E 00	3.16E-01-- 4.79E-01
	ALPHA-S	71	0.50	1.38E-01( 13/ 59)	005.2 5.23E-01( 6/ 12)	2.32E-02( 2/ 12)
				2.63E-01-- 3.24E 00	4.5 mi/SSE 3.40E-01-- 3.24E 00	3.97E-01-- 4.06E-01
	BETA-D	71	1.00	3.43E 00( 59/ 59)	000.7 9.57E 00( 12/ 12)	1.74E 00( 12/ 12)
				5.51E-01-- 2.48E 01		1.12E 00-- 2.89E 00
	BETA-S	71	1.00	5.51E-01( 23/ 59)	005.2 1.04E 00( 7/ 12)	6.77E-02( 2/ 12)
				5.23E-01-- 4.14E 00		7.11E-01-- 4.14E 00
	MN-54	71	15.00	-1.33E-01( 3/ 59)	000.6 4.28E-01( 2/ 11)	1.43E 00( 1/ 12)
				5.20E 00-- 5.89E 00	0.2 mi/NNE 5.20E 00-- 5.67E 00	7.35E 00-- 7.35E 00
	FE-59	71	30.00	1.22E 00( 2/ 59)	005.2 2.66E 00( 0/ 12)	4.24E-01( 0/ 12)
				1.08E 01-- 1.19E 01		0.00E-01-- 0.00E-01
	CO-58	71	15.00	1.53E-01( 1/ 59)	013 1.10E 00( 1/ 12)	4.36E-01( 0/ 12)
				5.13E 00-- 5.13E 00	17.8 mi/SSE 5.13E 00-- 5.13E 00	0.00E-01-- 0.00E-01
	CO-60	71	15.00	1.45E-01( 5/ 59)	000.6 6.10E-01( 1/ 11)	1.12E 00( 1/ 12)
				2.10E 00-- 8.81E 00		4.20E 00-- 4.20E 00
	ZN-65	71	30.00	1.06E-01( 0/ 59)	013 1.58E 00( 0/ 12)	1.62E-01( 0/ 12)
				0.00E-01-- 0.00E-01		0.00E-01-- 0.00E-01
	ZR-95	71	20.00	1.37E 00( 3/ 59)	000.7 2.39E 00( 3/ 12)	9.25E-01( 1/ 12)
				9.28E 00-- 1.02E 01		1.13E 01-- 1.13E 01
	NB-95	71	10.00	5.19E-01( 6/ 59)	013 1.70E 00( 1/ 12)	-8.61E-01( 0/ 12)
				6.11E 00-- 8.40E 00		7.23E 00-- 7.23E 00
	I-131	71	15.00	1.26E 00( 5/ 59)	000.6 2.65E 00( 1/ 11)	7.54E-01( 0/ 12)
				7.54E 00-- 2.22E 01		2.22E 01-- 2.22E 01
	CS-134	71	15.00	9.95E-01( 3/ 59)	000.7 3.26E 00( 3/ 12)	-4.01E-01( 0/ 12)
				4.83E 00-- 1.53E 01		4.83E 00-- 1.53E 01
	CS-137	71	15.00	9.78E-01( 5/ 59)	000.7 3.90E 00( 4/ 12)	1.23E 00( 2/ 12)
				5.17E 00-- 1.22E 01		5.17E 00-- 1.22E 01
	BALA-140	71	15.00	1.71E-01( 0/ 59)	013 8.36E-01( 0/ 12)	-9.29E-01( 0/ 12)
				0.00E-01-- 0.00E-01		0.00E-01-- 0.00E-01

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RANGE BASED UPON DETECTABLE ACTIVITY MEASUREMENTS ONLY

ZERO RANGE INDICATES NO DETECTABLE ACTIVITY MEASUREMENTS

PROPORTION OF DETECTABLE ACTIVITY MEASUREMENTS AT SPECIFIED LOCATIONS IS INDICATED IN PARENTHESES (%)



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SURFACE WATER	I	I	I	I	I	I	I	I	I	I	I	I
COMPOSITE	I	I	I	I	I	I	I	I	I	I	I	I
PCI/L	I	I	I	I	I	I	I	I	I	I	I	I
6 LOCATIONS	I	I	I	I	I	I	I	I	I	I	I	I
	I	SR-89	24	I	10.00	I	< LLD ( 0/ 20)	I	< LLD	I	< LLD ( 0/ 4)	I
	I		I	I	I	I	I	I	I	I	I	I
	I	SR-90	24	I	2.00	I	6.33E-01( 3/ 20)	I	000.6 6.90E-01( 2/ 4)	I	< LLD ( 0/ 4)	I
	I		I	I	I	I	5.20E-01-- 8.00E-01	I	0.2 mi/NNE 5.80E-01-- 8.00E-01	I		I
	I	H-3	24	I	330.00	I	1.92E 03( 20/ 20)	I	000.7 7.21E 03( 4/ 4)	I	1.73E 02( 4/ 4)	I
	I		I	I	I	I	1.00E 02-- 9.13E 03	I	0.9 mi/ESE 2.54E 03-- 9.13E 03	I	1.00E 02-- 2.90E 02	I 16

MEAN BASED UPON ALL NET ACTIVITY MEASUREMENTS

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ZERO RANGE INDICATES NO DETECTABLE ACTIVITY MEASUREMENTS

FRACTION OF DETECTABLE ACTIVITY MEASUREMENTS AT SPECIFIED LOCATIONS IS INDICATED IN PARENTHESES, (F)

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MEDIUM SAMPLED UNITS	TYPE & TOTAL NO. OF ANALYSES PERFORMED	(LLD)	ALL INDICATOR LOCATIONS MEANS (F) RANGE	LOCATION W/ HIGHEST ANN. MEAN NAME DIST/ DIRECTION	CONTROL LOCATIONS MEAN (F) RANGE 004.1 6.0 mi/SSW	NO. OF NON- ROUTINE REPORT MEAS.
DRINKING						
WATER						
PCIA/L						
3 LOCATIONS						
ALPHA-T	36	0.50	2.39E-02( 3/ 24)	006.1 3.38E-02( 1/ 12)	5.46E-02( 1/ 12)	
BETA-T	36	1.00	2.72E-01-- 3.27E-01 1.94E 00( 24/ 24)	18.5 mi/SSE 3.27E-01-- 3.27E-01 012 1.98E 00( 12/ 12)	2.61E-01-- 2.61E-01 1.88E 00( 12/ 12)	
MN-54	36	15.00	5.87E-01-- 3.51E 00 7.31E-01( 1/ 24)	119.0 mi/SSE 1.03E 00-- 3.51E 00 012 1.42E 00( 1/ 12)	9.86E-01-- 3.95E 00 6.25E-02( 0/ 12)	
FE-59	36	30.00	4.48E 00-- 4.48E 00 3.76E 00( 2/ 24)	012 4.48E 00-- 4.48E 00 5.85E 00( 1/ 12)	0.00E-01-- 0.00E-01 2.06E 00( 1/ 12)	
CO-58	36	15.00	1.12E 01-- 1.43E 01 -2.46E-01( 0/ 24)	012 1.12E 01-- 1.12E 01 006.1 -2.11E-01( 0/ 12)	1.44E 01-- 1.44E 01 6.52E-02( 0/ 12)	
CO-60	36	15.00	0.00E-01-- 0.00E-01 9.34E-01( 2/ 24)	012 0.00E-01-- 0.00E-01 1.44E 00( 2/ 12)	0.00E-01-- 0.00E-01 5.63E-01( 0/ 12)	
ZN-65	36	30.00	6.24E 00-- 8.40E 00 4.31E-01( 0/ 24)	012 6.24E 00-- 8.40E 00 006.1 7.30E-01( 0/ 12)	0.00E-01-- 0.00E-01 2.57E 00( 0/ 12)	
ZR-95	36	20.00	0.00E-01-- 0.00E-01 8.61E-01( 2/ 24)	012 0.00E-01-- 0.00E-01 9.21E-01( 1/ 12)	0.00E-01-- 0.00E-01 9.37E-01( 1/ 12)	
NB-95	36	10.00	8.66E 00-- 9.84E 00 5.38E-02( 0/ 24)	012 8.66E 00-- 9.84E 00 4.92E-01( 0/ 12)	1.09E 01-- 1.09E 01 1.96E 00( 1/ 12)	
I-131	36	15.00	0.00E-01-- 0.00E-01 1.23E 00( 0/ 24)	012 0.00E-01-- 0.00E-01 1.52E 00( 0/ 12)	1.69E 01-- 1.69E 01 3.33E-01( 0/ 12)	
CS-134	36	15.00	0.00E-01-- 0.00E-01 5.05E-01( 1/ 24)	012 0.00E-01-- 0.00E-01 5.54E-01( 1/ 12)	0.00E-01-- 0.00E-01 -5.74E-02( 0/ 12)	
CS-137	36	15.00	6.32E 00-- 6.32E 00 1.07E 00( 1/ 24)	006.1 6.32E 00-- 6.32E 00 1.34E 00( 1/ 12)	0.00E-01-- 0.00E-01 -4.49E-01( 0/ 12)	
BALA-140	36	15.00	6.74E 00-- 6.74E 00 -2.28E-01( 0/ 24)	012 6.74E 00-- 6.74E 00 1.71E-01( 0/ 12)	0.00E-01-- 0.00E-01 2.92E-01( 0/ 12)	
			0.00E-01-- 0.00E-01	0.00E-01-- 0.00E-01	0.00E-01-- 0.00E-01	

MEAN BASED UPON ALL NET ACTIVITY MEASUREMENTS

RANGE BASED UPON DETECTABLE ACTIVITY MEASUREMENTS ONLY

ZERO RANGE INDICATES NO DETECTABLE ACTIVITY MEASUREMENTS

FRACTION OF DETECTABLE ACTIVITY MEASUREMENTS AT SPECIFIED LOCATIONS IS INDICATED IN PARENTHESES, (F)

## ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM ANNUAL SUMMARY

OCONEE NUCLEAR STATION  
PICKENS COUNTY, SOUTH CAROLINA

DOCKET NUMBER 50-269,-270,-287  
JANUARY 1, 1981 - DECEMBER 31, 1981

MEDIUM SAMPLED UNITS	I TYPE & TOTAL NO. OF ANALYSES PERFORMED	I (LLD)	I ALL INDICATOR LOCATIONS MEANS (F) RANGE	I LOCATION W/ HIGHEST ANN. MEAN NAME DIST/ DIRECTION	I CONTROL LOCATIONS MEAN (F) RANGE 004.1 6.0 mi/SSW	I NO. OF NON- ROUTINE REPORT MEAS.
DRINKING WATER	I	I	I	I	I	I
COMPOSITE	I	I	I	I	I	I
PCI/L	I	I	I	I	I	I
3 LOCATIONS	I	I	I	I	I	I
I SR-89	I 12	I 10.00	I < LLD ( 0/ 8)	I < LLD	I < LLD ( 0/ 4)	I
I SR-90	I 12	I 2.00	I < LLD ( 0/ 8)	I < LLD	I < LLD ( 0/ 4)	I
I H-3	I 12	I 330.00	I 5.93E 02( 8/ 8)	I 006.1 8.30E 02( 4/ 4)	I 1.27E 02( 3/ 4)	I
I	I	I	I 3.00E 02-- 9.90E 02	I 18.5 mi/SSE 7.40E 02-- 9.90E 02	I 1.00E 02-- 1.80E 02	I

MEAN BASED UPON ALL NET ACTIVITY MEASUREMENTS

RANGE BASED UPON DETECTABLE ACTIVITY MEASUREMENTS ONLY

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FRACTION OF DETECTABLE ACTIVITY MEASUREMENTS AT SPECIFIED LOCATIONS IS INDICATED IN PARENTHESES, (F)

# ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM ANNUAL SUMMARY

PAGE 8 OF 16

OCONEE NUCLEAR STATION  
PICKENS COUNTY, SOUTH CAROLINA

DOCKET NUMBER 50-269,-270,-287  
JANUARY 1, 1981 - DECEMBER 31, 1981

MEDIUM SAMPLED UNITS	TYPE & TOTAL NO. OF ANALYSES PERFORMED	(LLD)	ALL INDICATOR LOCATIONS MEANS (F) RANGE	LOCATION W/ HIGHEST ANN. MEAN NAME DIST/ DIRECTION	CONTROL LOCATIONS MEAN (F) RANGE 004.1 6.0 mi/SSW	NO. OF NON- ROUTINE REPORT MEAS.
RAW WATER PCI/L 3 LOCATIONS						
ALPHA-D	36	0.50	2.02E-01( 5/ 24)	006.1 2.57E-01( 3/ 12)	4.68E-01( 2/ 12)	
ALPHA-S	36	0.50	1.62E-01-- 1.69E 00 1.23E-01( 6/ 24)	8.5 mi/SSE 1.62E-01-- 1.69E 00 006.1 1.37E-01( 4/ 12)	3.20E-01-- 4.77E 00 -5.63E-03( 1/ 12)	
BETA-D	36	1.00	3.97E-01-- 1.08E 00 1.95E 00( 24/ 24)	012 3.97E-01-- 7.32E-01 012 2.09E 00( 12/ 12)	3.33E-01-- 3.33E-01 1.74E 00( 12/ 12)	
BETA-S	36	1.00	1.18E 00-- 2.88E 00 3.72E-01( 6/ 24)	19.0 mi/SSE 1.18E 00-- 2.88E 00 006.1 3.80E-01( 4/ 12)	8.36E-01-- 2.62E 00 1.61E-01( 4/ 12)	
I-131/LL	36	1.50	5.62E-01-- 1.31E 00 -9.14E-02( 0/ 24)	012 5.62E-01-- 1.07E 00 012 -6.40E-02( 0/ 12)	5.62E-01-- 8.08E-01 -6.03E-02( 1/ 12)	
IN-54	36	15.00	0.00E-01-- 0.00E-01 -6.78E-01( 0/ 24)	012 0.00E-01-- 0.00E-01 012 -4.15E-01( 0/ 12)	2.16E-01-- 2.16E-01 -6.14E-01( 0/ 12)	
FE-59	36	30.00	0.00E-01-- 0.00E-01 9.79E-01( 0/ 24)	006.1 0.00E-01-- 0.00E-01 006.1 2.19E 00( 0/ 12)	0.00E-01-- 0.00E-01 1.28E 00( 1/ 12)	
CO-58	36	15.00	0.00E-01-- 0.00E-01 -1.17E-01( 0/ 24)	012 0.00E-01-- 0.00E-01 012 3.85E-02( 0/ 12)	1.17E 01-- 1.17E 01 7.57E-01( 2/ 12)	
CO-60	36	15.00	0.00E-01-- 0.00E-01 4.35E-01( 1/ 24)	006.1 0.00E-01-- 0.00E-01 006.1 5.21E-01( 1/ 12)	4.45E 00-- 6.13E 00 7.63E-01( 2/ 12)	
ZN-65	36	30.00	5.88E 00-- 5.88E 00 -6.01E-01( 0/ 24)	006.1 5.88E 00-- 5.88E 00 006.1 -5.20E-01( 0/ 12)	4.48E 00-- 7.35E 00 5.94E-01( 0/ 12)	
ZR-95	36	20.00	0.00E-01-- 0.00E-01 9.67E-01( 0/ 24)	006.1 0.00E-01-- 0.00E-01 006.1 2.73E 00( 0/ 12)	0.00E-01-- 0.00E-01 1.44E 00( 2/ 12)	
NB-95	36	10.00	0.00E-01-- 0.00E-01 6.17E-01( 3/ 24)	012 0.00E-01-- 0.00E-01 012 1.86E 00( 2/ 12)	1.04E 01-- 1.21E 01 4.72E-01( 1/ 12)	
I-131	36	15.00	5.51E 00-- 7.62E 00 1.10E 00( 0/ 24)	012 5.51E 00-- 7.62E 00 012 1.66E 00( 0/ 12)	5.05E 00-- 5.05E 00 -1.12E-01( 0/ 12)	
CS-134	36	15.00	0.00E-01-- 0.00E-01 9.27E-01( 1/ 24)	006.1 0.00E-01-- 0.00E-01 006.1 1.26E 00( 1/ 12)	0.00E-01-- 0.00E-01 2.17E-02( 0/ 12)	
CS-137	36	15.00	8.61E 00-- 8.61E 00 1.70E 00( 3/ 24)	012 8.61E 00-- 8.61E 00 012 1.77E 00( 2/ 12)	0.00E-01-- 0.00E-01 1.50E 00( 0/ 12)	
BALA-140	36	15.00	5.37E 00-- 1.54E 01 4.36E-01( 0/ 24)	006.1 5.37E 00-- 9.19E 00 006.1 6.84E-01( 0/ 12)	0.00E-01-- 0.00E-01 8.74E-01( 0/ 12)	
			0.00E-01-- 0.00E-01	0.00E-01-- 0.00E-01	0.00E-01-- 0.00E-01	

MEAN BASED UPON ALL NET ACTIVITY MEASUREMENTS

RANGE BASED UPON DETECTABLE ACTIVITY MEASUREMENTS ONLY

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM ANNUAL SUMMARY

PAGE 9 OF 16

OCONEE NUCLEAR STATION  
PICKENS COUNTY, SOUTH CAROLINA

DOCKET NUMBER 50-269,-270,-287  
JANUARY 1, 1981 - DECEMBER 31, 1981

MEDIUM SAMPLED UNITS	I I I I	I TYPE & TOTAL NO. OF ANALYSES PERFORMED	I I I I	I (LLD)	I I I I	I ALL INDICATOR LOCATIONS MEANS (F) RANGE	I I I I	I LOCATION W/ HIGHEST ANN. MEAN I----- I NAME I DIST/ I DIRECTION	I I I I	I CONTROL LOCATIONS MEAN (F) RANGE 004.1 6.0 mi/SSW	I I I I	I NO. OF NON- ROUTINE REPORT MEAS.
RAW WATER	I	I	I	I	I	I	I	I	I	I	I	I
COMPOSITE	I	I	I	I	I	I	I	I	I	I	I	I
PCI/L	I	I	I	I	I	I	I	I	I	I	I	I
3 LOCATIONS	I	I	I	I	I	I	I	I	I	I	I	I
	I	SR-89	12	I	10.00	I	< LLD ( 0/ 8)	I	< LLD	I	< LLD ( 0/ 4)	I
	I			I		I		I		I		I
	I	SR-90	12	I	2.00	I	< LLD ( 0/ 8)	I	< LLD	I	< LLD ( 0/ 4)	I
	I			I		I		I		I		I
	I	H-3	12	I	330.00	I	6.45E 02( 8/ 8)	I	006.1 8.58E 02( 4/ 4)	I	1.73E 02( 4/ 4)	I
	I			I		I	3.40E 02-- 1.30E 03	I	18.5 mi/SSE 6.00E 02-- 1.30E 03	I	1.00E 02-- 2.90E 02	I

MEAN BASED UPON ALL NET ACTIVITY MEASUREMENTS

RANGE BASED UPON DETECTABLE ACTIVITY MEASUREMENTS ONLY

ZERO RANGE INDICATES NO DETECTABLE ACTIVITY MEASUREMENTS

FRACTION OF DETECTABLE ACTIVITY MEASUREMENTS AT SPECIFIED LOCATIONS IS INDICATED IN PARENTHESES, (F)

## ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM ANNUAL SUMMARY

OCCONEE NUCLEAR STATION  
PICKENS COUNTY, SOUTH CAROLINA

DOCKET NUMBER 50-269,-270,-287  
JANUARY 1, 1981 - DECEMBER 31, 1981

MEDIUM SAMPLED UNITS	TYPE & TOTAL NO. OF ANALYSES PERFORMED	(LLD)	ALL INDICATOR LOCATIONS MEANS (F) RANGE	LOCATION W/ HIGHEST ANN. MEAN NAME DIST/ DIRECTION	CONTROL LOCATIONS MEAN (F) RANGE 006.3 9.5 mi/SSE	NO. OF NON- ROUTINE REPORT MEAS.
MILK						
PCI/L						
3 LOCATIONS						
	SR-89	28	10.00	7.20E 00( 1/ 22)	015 7.20E 00( 1/ 10)	< LLD ( 0/ 6)
				7.20E 00-- 7.20E 00	12.0 mi/SSE 7.20E 00-- 7.20E 00	
	SR-90	28	2.00	4.53E 00( 21/ 22)	015 6.64E 00( 10/ 10)	2.92E 00( 6/ 6)
				8.90E-01-- 1.00E 01	2.20E 00-- 1.00E 01	1.60E 00-- 4.50E 00
	H-3	28	330.00	2.06E 02( 21/ 22)	002.1 2.27E 02( 11/ 12)	2.98E 02( 6/ 6)
				1.10E 02-- 4.80E 02	14.5 mi/W 1.30E 02-- 4.80E 02	2.30E 02-- 3.40E 02
	I-131/LL	67	0.50	4.38E-02( 5/ 61)	002.1 4.70E-02( 5/ 52)	-1.33E-01( 0/ 6)
				2.17E-01-- 7.78E-01	2.17E-01-- 7.78E-01	0.00E-01-- 0.00E-01
	K-40	28	200.00	1.35E 03( 22/ 22)	002.1 1.42E 03( 12/ 12)	1.42E 03( 6/ 6)
				9.96E 02-- 1.62E 03	1.10E 03-- 1.62E 03	1.14E 03-- 1.68E 03
	MN-54	28	0.00	-2.56E-01( 0/ 22)	002.1 8.54E-02( 0/ 12)	2.60E 00( 0/ 6)
				0.00E-01-- 0.00E-01	0.00E-01-- 0.00E-01	0.00E-01-- 0.00E-01
	FE-59	28	0.00	1.53E-01( 0/ 22)	002.1 4.53E-01( 0/ 12)	1.23E 00( 0/ 6)
				0.00E-01-- 0.00E-01	0.00E-01-- 0.00E-01	0.00E-01-- 0.00E-01
	CO-58	28	0.00	1.02E 00( 2/ 22)	002.1 1.40E 00( 1/ 12)	-3.37E-01( 0/ 6)
				7.10E 00-- 7.18E 00	7.18E 00-- 7.18E 00	0.00E-01-- 0.00E-01
	CO-60	28	0.00	3.66E-01( 0/ 22)	002.1 5.20E-01( 0/ 12)	1.21E 00( 0/ 6)
				0.00E-01-- 0.00E-01	0.00E-01-- 0.00E-01	0.00E-01-- 0.00E-01
	ZN-65	28	0.00	-7.43E-01( 0/ 22)	002.1 -1.10E-01( 0/ 12)	-1.02E-02( 0/ 6)
				0.00E-01-- 0.00E-01	0.00E-01-- 0.00E-01	0.00E-01-- 0.00E-01
	ZR-95	28	0.00	5.43E-01( 1/ 22)	002.1 1.38E 00( 1/ 12)	1.62E 00( 0/ 6)
				1.39E 01-- 1.39E 01	1.39E 01-- 1.39E 01	0.00E-01-- 0.00E-01
	NB-95	28	0.00	-2.28E-01( 0/ 22)	002.1 4.29E-01( 0/ 12)	2.94E-01( 0/ 6)
				0.00E-01-- 0.00E-01	0.00E-01-- 0.00E-01	0.00E-01-- 0.00E-01
	I-131	28	15.00	1.43E 00( 1/ 22)	015 1.95E 00( 1/ 10)	3.50E 00( 1/ 6)
				1.05E 01-- 1.05E 01	1.05E 01-- 1.05E 01	9.43E 00-- 9.43E 00
	CS-134	28	15.00	1.45E-01( 0/ 22)	015 6.53E-01( 0/ 10)	1.30E 00( 0/ 6)
				0.00E-01-- 0.00E-01	0.00E-01-- 0.00E-01	0.00E-01-- 0.00E-01
	CS-137	28	15.00	5.22E 00( 9/ 22)	015 5.52E 00( 4/ 10)	5.51E 00( 2/ 6)
				5.42E 00-- 1.27E 01	7.26E 00-- 1.27E 01	8.29E 00-- 1.03E 01
	BALA-140	28	15.00	5.52E-02( 0/ 22)	015 9.51E-02( 0/ 10)	-4.54E-01( 0/ 6)
				0.00E-01-- 0.00E-01	0.00E-01-- 0.00E-01	0.00E-01-- 0.00E-01

MEAN BASED UPON ALL NET ACTIVITY MEASUREMENTS

RANGE BASED UPON DETECTABLE ACTIVITY MEASUREMENTS ONLY

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM ANNUAL SUMMARY

PAGE 11 OF 16

OCONEE NUCLEAR STATION  
PICKENS COUNTY, SOUTH CAROLINA

DOCKET NUMBER 50-269,-270,-287  
JANUARY 1, 1981 - DECEMBER 31, 1981

MEDIUM SAMPLED UNITS	TYPE & TOTAL NO. OF ANALYSES PERFORMED	(LLD)	ALL INDICATOR LOCATIONS MEANS (F) RANGE	LOCATION W/ HIGHEST ANN. MEAN NAME DIST/ DIRECTION	CONTROL LOCATIONS MEAN (F) RANGE 006 9.5 mi/SSE	NO. OF NON- ROUTINE REPORT MEAS.
BROAD-LEAF VEGETATION PCI/KG (WET) 4 LOCATIONS						
	K-40	16	400.00	7.17E 03( 12/ 12)	015 7.92E 03( 4/ 4)	8.67E 03( 4/ 4)
				2.50E 03-- 9.87E 03	2.0 mi/SSE 5.42E 03-- 9.78E 03	5.84E 03-- 1.15E 04
	MN-54	16	0.00	7.89E 00( 1/ 12)	015 1.89E 01( 1/ 4)	-4.38E 00( 0/ 4)
				6.33E 01-- 6.33E 01	6.33E 01-- 6.33E 01	0.00E-01-- 0.00E-01
	FE-59	16	0.00	-2.87E-01( 0/ 12)	000 7.96E 00( 0/ 4)	-9.73E-03( 0/ 4)
				0.00E-01-- 0.00E-01	0.3 mi/N 0.00E-01-- 0.00E-01	0.00E-01-- 0.00E-01
	CO-58	16	0.00	7.23E-01( 1/ 12)	015 4.67E 00( 1/ 4)	2.97E 00( 0/ 4)
				3.32E 01-- 3.32E 01	3.32E 01-- 3.32E 01	0.00E-01-- 0.00E-01
	CO-60	16	0.00	3.54E-01( 0/ 12)	002.1 2.84E 00( 0/ 4)	-2.92E 00( 0/ 4)
				0.00E-01-- 0.00E-01	14.5 mi/W 0.00E-01-- 0.00E-01	0.00E-01-- 0.00E-01
	ZN-65	16	0.00	1.86E 00( 0/ 12)	002.1 6.41E 00( 0/ 4)	6.28E-01( 0/ 4)
				0.00E-01-- 0.00E-01	0.00E-01-- 0.00E-01	0.00E-01-- 0.00E-01
	ZR-95	16	0.00	1.34E 02( 9/ 12)	015 2.35E 02( 4/ 4)	7.88E 01( 2/ 4)
				6.73E 01-- 6.09E 02	6.73E 01-- 6.09E 02	6.09E 01-- 1.73E 02
	NB-95	16	0.00	2.36E 02( 11/ 12)	015 4.55E 02( 4/ 4)	1.21E 02( 3/ 4)
				5.06E 01-- 1.17E 03	1.18E 02-- 1.17E 03	1.07E 02-- 2.70E 02
	I-131	16	80.00	6.03E 00( 2/ 12)	000 1.74E 01( 1/ 4)	-7.14E 00( 0/ 4)
				6.62E 01-- 6.87E 01	6.87E 01-- 6.87E 01	0.00E-01-- 0.00E-01
	CS-134	16	100.00	4.31E-01( 0/ 12)	000 2.30E 00( 0/ 4)	4.39E 00( 0/ 4)
				0.00E-01-- 0.00E-01	0.00E-01-- 0.00E-01	0.00E-01-- 0.00E-01
	CS-137	16	100.00	2.01E 01( 3/ 12)	015 2.99E 01( 1/ 4)	2.60E 01( 1/ 4)
				3.87E 01-- 7.46E 01	7.46E 01-- 7.46E 01	5.92E 01-- 5.92E 01
	BALA-140	16	0.00	5.10E 00( 0/ 12)	002.1 8.95E 00( 0/ 4)	6.03E 00( 0/ 4)
				0.00E-01-- 0.00E-01	0.00E-01-- 0.00E-01	0.00E-01-- 0.00E-01

MEAN BASED UPON ALL NET ACTIVITY MEASUREMENTS

RANGE BASED UPON DETECTABLE ACTIVITY MEASUREMENTS ONLY

ZERO RANGE INDICATES NO DETECTABLE ACTIVITY MEASUREMENTS

FRACTION OF DETECTABLE ACTIVITY MEASUREMENTS AT SPECIFIED LOCATIONS IS INDICATED IN PARENTHESES. (F)

## ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM ANNUAL SUMMARY

OCCONEE NUCLEAR STATION  
PICKENS COUNTY, SOUTH CAROLINA

DOCKET NUMBER 50-269,-270,-287  
JANUARY 1, 1981 - DECEMBER 31, 1981

MEDIUM SAMPLED UNITS	TYPE & TOTAL NO. OF ANALYSES PERFORMED	(LLD)	ALL INDICATOR LOCATIONS MEANS (F) RANGE	LOCATION W/ HIGHEST ANN. MEAN NAME DIST/ DIRECTION	CONTROL LOCATIONS MEAN (F) RANGE 000.5 1.0 mi/NNE	NO. OF NON- ROUTINE REPORT MEAS.
AQUATIC						
VEGETATION						
PCI/KG (WET)						
3 LOCATIONS						
SR-89	5	40.00	< LLD ( 0/ 3)	< LLD	< LLD ( 0/ 2)	
SR-90	5	8.00	7.63E 00( 3/ 3)	000.4 8.80E 00( 2/ 2)	4.30E 00( 1/ 2)	
K-40	5	400.00	5.30E 00-- 1.10E 01	10.7 mi/ENE 6.60E 00-- 1.10E 01	4.30E 00-- 4.30E 00	
			3.03E 03( 3/ 3)	000.4 4.06E 03( 2/ 2)	6.84E 03( 2/ 2)	
			9.56E 02-- 4.43E 03	3.69E 03-- 4.43E 03	2.20E 03-- 1.15E 04	
MN-54	5	0.00	9.03E 01( 2/ 3)	000.4 1.24E 02( 1/ 2)	1.71E 01( 0/ 2)	
			2.37E 01-- 2.29E 02	2.29E 02-- 2.29E 02	0.00E-01-- 0.00E-01	
FE-59	5	0.00	-1.23E 01( 0/ 3)	005.2 -1.20E 01( 0/ 1)	-2.09E 01( 0/ 2)	
			0.00E-01-- 0.00E-01	14.5 mi/SSE 0.00E-01-- 0.00E-01	0.00E-01-- 0.00E-01	
CO-58	5	0.00	2.22E 03( 3/ 3)	000.4 3.31E 03( 2/ 2)	6.86E 00( 0/ 2)	1
			3.13E 01-- 6.31E 03	3.09E 02-- 6.31E 03	0.00E-01-- 0.00E-01	
CO-60	5	0.00	1.50E 03( 3/ 3)	000.4 2.21E 03( 2/ 2)	-4.77E 00( 0/ 2)	1
			9.08E 01-- 4.18E 03	2.31E 02-- 4.18E 03	0.00E-01-- 0.00E-01	
ZN-65	5	0.00	-6.54E 00( 0/ 3)	000.4 -5.01E 00( 0/ 2)	1.43E 01( 0/ 2)	
			0.00E-01-- 0.00E-01	0.00E-01-- 0.00E-01	0.00E-01-- 0.00E-01	
ZR-95	5	0.00	8.24E 01( 2/ 3)	000.4 9.85E 01( 1/ 2)	7.33E 01( 1/ 2)	
			5.01E 01-- 1.66E 02	1.66E 02-- 1.66E 02	4.04E 01-- 4.04E 01	
NB-95	5	0.00	2.44E 02( 3/ 3)	000.4 3.28E 02( 2/ 2)	2.40E 02( 2/ 2)	
			7.53E 01-- 5.56E 02	1.01E 02-- 5.56E 02	3.05E 01-- 4.50E 02	
I-131	5	80.00	-0.35E 00( 0/ 3)	005.2 -6.23E 00( 0/ 1)	-4.66E 00( 0/ 2)	
			0.00E-01-- 0.00E-01	0.00E-01-- 0.00E-01	0.00E-01-- 0.00E-01	
CS-134	5	100.00	1.04E 03( 3/ 3)	000.4 1.55E 03( 2/ 2)	-9.44E 00( 0/ 2)	
			2.58E 01-- 2.96E 03	1.40E 02-- 2.96E 03	0.00E-01-- 0.00E-01	1
CS-137	5	100.00	2.65E 03( 3/ 3)	000.4 3.78E 03( 2/ 2)	4.40E 01( 1/ 2)	
			3.86E 02-- 7.09E 03	4.78E 02-- 7.09E 03	7.94E 01-- 7.94E 01	2
BALA-140	5	0.00	-3.28E 00( 0/ 3)	000.4 -2.92E 00( 0/ 2)	2.33E 01( 0/ 2)	
			0.00E-01-- 0.00E-01	0.00E-01-- 0.00E-01	0.00E-01-- 0.00E-01	

MEAN BASED UPON ALL NET ACTIVITY MEASUREMENTS

RANGE BASED UPON DETECTABLE ACTIVITY MEASUREMENTS ONLY

ZERO RANGE INDICATES NO DETECTABLE ACTIVITY MEASUREMENTS

FRACTION OF DETECTABLE ACTIVITY MEASUREMENTS AT SPECIFIED LOCATIONS IS INDICATED IN PARENTHESES, (F)



## ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM ANNUAL SUMMARY

OCONEE NUCLEAR STATION  
PICKENS COUNTY, SOUTH CAROLINA

DOCKET NUMBER 50-269,-270,-287  
JANUARY 1, 1981 - DECEMBER 31, 1981

MEDIUM SAMPLED UNITS	TYPE & TOTAL NO. OF ANALYSES PERFORMED	(LLD)	ALL INDICATOR LOCATIONS MEANS (F) RANGE	LOCATION W/ HIGHEST ANN. MEAN NAME DIST/ DIRECTION	CONTROL LOCATIONS MEAN (F) RANGE 006 9.5 mi/SSE	NO. OF NON- ROUTINE REPORT MEAS.
RAIN & SETTLED DUST PCI/SQ M 6 LOCATIONS						
	ALPHA-T	70	0.00	1.09E 02( 49/ 58) 9.25E 00-- 6.69E 02 10.0 mi/WSW	1.35E 02( 9/ 12) 4.64E 01-- 6.69E 02	1.37E 02( 11/ 12) 2.64E 01-- 6.34E 02
	BETA-T	70	0.00	3.28E 03( 57/ 58) 1.87E 02-- 1.50E 04 10.5 mi/S	3.56E 03( 10/ 11) 3.51E 02-- 1.19E 04	3.92E 03( 12/ 12) 1.24E 02-- 1.43E 04
	MN-54	70	0.00	9.22E 01( 2/ 58) 9.34E 02-- 1.46E 03 10.7 mi/SSW	2.89E 02( 2/ 12) 9.34E 02-- 1.46E 03	8.68E 01( 0/ 12) 0.00E-01-- 0.00E-01
	FE-59	70	0.00	3.74E 02( 3/ 58) 2.02E 03-- 2.80E 03 12.0 mi/ENE	5.78E 02( 1/ 12) 2.11E 03-- 2.11E 03	1.75E 02( 0/ 12) 0.00E-01-- 0.00E-01
	CO-58	70	0.00	5.67E 01( 1/ 58) 1.88E 03-- 1.88E 03	1.64E 02( 1/ 12) 1.88E 03-- 1.88E 03	-1.92E 02( 1/ 12) 2.82E 02-- 2.82E 02
	CO-60	70	0.00	1.48E 02( 8/ 58) 4.77E 02-- 1.15E 03	3.72E 02( 2/ 12) 7.48E 02-- 7.95E 02	6.15E 01( 0/ 12) 0.00E-01-- 0.00E-01
	ZN-65	70	0.00	1.76E 01( 1/ 58) 2.21E 03-- 2.21E 03 10.3 mi/N	2.18E 02( 1/ 11) 2.21E 03-- 2.21E 03	-1.67E 02( 0/ 12) 0.00E-01-- 0.00E-01
	ZR-95	70	0.00	1.21E 03( 17/ 58) 6.44E 02-- 8.55E 03	1.70E 03( 5/ 11) 2.18E 03-- 6.10E 03	8.03E 02( 3/ 12) 1.34E 03-- 3.48E 03
	NB-95	70	0.00	3.06E 03( 37/ 58) 2.39E 02-- 1.87E 04	3.93E 03( 7/ 11) 2.39E 02-- 1.87E 04	3.17E 03( 6/ 12) 2.13E 03-- 1.37E 04
	I-131	70	0.00	2.87E 02( 1/ 58) 1.72E 03-- 1.72E 03	7.57E 02( 0/ 12) 0.00E-01-- 0.00E-01	1.30E 02( 0/ 12) 0.00E-01-- 0.00E-01
	CS-134	70	0.00	4.13E 01( 1/ 58) 3.33E 02-- 3.33E 02	1.39E 02( 1/ 12) 3.33E 02-- 3.33E 02	5.18E 01( 0/ 12) 0.00E-01-- 0.00E-01
	CS-137	70	0.00	1.53E 02( 4/ 58) 2.94E 02-- 1.10E 03	2.11E 02( 0/ 12) 0.00E-01-- 0.00E-01	1.39E 02( 1/ 12) 1.12E 03-- 1.12E 03
	BALA-140	70	0.00	3.49E 01( 0/ 58) 0.00E-01-- 0.00E-01	1.44E 02( 0/ 12) 0.00E-01-- 0.00E-01	-1.17E 02( 0/ 12) 0.00E-01-- 0.00E-01

MEAN BASED UPON ALL NET ACTIVITY MEASUREMENTS

RANGE BASED UPON DETECTABLE ACTIVITY MEASUREMENTS ONLY

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FRACTION OF DETECTABLE ACTIVITY MEASUREMENTS AT SPECIFIED LOCATIONS IS INDICATED IN PARENTHESES, (F)

## ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM ANNUAL SUMMARY

PAGE 14 OF 16

OCONEE NUCLEAR STATION  
PICKENS COUNTY, SOUTH CAROLINA

DOCKET NUMBER 50-269,-270,-287  
JANUARY 1, 1981 - DECEMBER 31, 1981

MEDIUM SAMPLED UNITS	TYPE & TOTAL NO. OF ANALYSES PERFORMED	(LLD)	ALL INDICATOR LOCATIONS MEANS (F) RANGE	LOCATION W/ HIGHEST ANN. MEAN NAME DIST/ DIRECTION	CONTROL LOCATIONS MEAN (F) RANGE 000.5 1.0 mi/NNE	NO. OF NON- ROUTINE REPORT MEAS.
BOTTOM SEDIMENT PCI/KG (DRY) 6 LOCATIONS						
SR-89	12	600.00	< LLD ( 0/ 10)	< LLD	< LLD ( 0/ 2)	
SR-90	12	150.00	8.10E 01( 3/ 10) 5.30E 01-- 1.10E 02	10.2 mi/NNE 000.6 5.30E 01-- 1.10E 02	< LLD ( 0/ 2)	
MN-54	12	0.00	1.32E 01( 1/ 10) 1.20E 02-- 1.20E 02	14.5 mi/SSE 005.2 1.20E 02-- 1.20E 02	8.29E 00( 0/ 2) 0.00E-01-- 0.00E-01	
FE-59	12	0.00	1.59E 01( 0/ 10) 0.00E-01-- 0.00E-01	005.2 0.00E-01-- 0.00E-01	0.00E-01( 0/ 2) 0.00E-01-- 0.00E-01	
CO-58	12	0.00	7.84E 01( 3/ 10) 1.51E 02-- 2.90E 02	10.7 mi/ENE 000.4 1.51E 02-- 2.90E 02	-2.57E 00( 0/ 2) 0.00E-01-- 0.00E-01	
CO-60	12	0.00	3.34E 02( 4/ 10) 2.69E 02-- 2.29E 03	005.2 0.00E-01-- 0.00E-01	0.00E-01( 0/ 2) 0.00E-01-- 0.00E-01	
ZN-65	12	0.00	7.40E 00( 0/ 10) 0.00E-01-- 0.00E-01	005.2 0.00E-01-- 0.00E-01	8.99E 00( 0/ 2) 0.00E-01-- 0.00E-01	
ZR-95	12	0.00	3.27E 01( 3/ 10) 7.69E 01-- 1.16E 02	10.9 mi/ESE 000.7 7.69E 01-- 1.16E 02	6.63E 01( 1/ 2) 1.06E 02-- 1.06E 02	
NB-95	12	0.00	3.64E 01( 3/ 10) 4.68E 01-- 7.67E 01	000.7 0.00E-01-- 0.00E-01	4.48E 01( 1/ 2) 6.74E 01-- 6.74E 01	
I-131	12	0.00	1.24E 00( 0/ 10) 0.00E-01-- 0.00E-01	006.2 0.00E-01-- 0.00E-01	3.04E 01( 0/ 2) 0.00E-01-- 0.00E-01	
CS-134	12	150.00	8.12E 02( 7/ 10) 5.13E 01-- 2.87E 03	18.0 mi/SSE 000.4 1.97E 03-- 2.87E 03	-9.43E 00( 0/ 2) 0.00E-01-- 0.00E-01	
CS-137	12	150.00	3.13E 03( 10/ 10) 1.01E 02-- 1.07E 04	000.4 0.00E-01-- 0.00E-01	1.15E 02( 2/ 2) 4.70E 01-- 1.84E 02	
BALA-140	12	0.00	6.36E 00( 1/ 10) 8.26E 01-- 8.26E 01	006.2 0.00E-01-- 0.00E-01	0.00E-01( 0/ 2) 0.00E-01-- 0.00E-01	

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## ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM ANNUAL SUMMARY

OCONEE NUCLEAR STATION  
PICKENS COUNTY, SOUTH CAROLINA

DOCKET NUMBER 50-269,-270,-287  
JANUARY 1, 1981 - DECEMBER 31, 1981

MEDIUM SAMPLED UNITS	TYPE & TOTAL NO. OF ANALYSES PERFORMED	(LLD)	ALL INDICATOR LOCATIONS MEANS (F) RANGE	LOCATION W/ HIGHEST ANN. MEAN NAME DIST/ DIRECTION	CONTROL LOCATIONS MEAN (F) RANGE 000.5 0.5 mi/SW	NO. OF NON- ROUTINE REPORT MEAS.
FISH						
PCI/KG (WET) 2 LOCATIONS						
SR-89	11	40.00	< LLD ( 0/ 6)	< LLD	< LLD ( 0/ 5)	
SR-90	11	8.00	2.15E 02( 6/ 6)	013 2.15E 02( 6/ 6)	3.72E 02( 5/ 5)	
K-40	11	1200.00	1.10E 02-- 4.50E 02	7.8 mi/SSE 1.10E 02-- 4.50E 02	1.00E 02-- 6.40E 02	
			2.40E 03( 6/ 6)	013 2.40E 03( 6/ 6)	2.68E 03( 5/ 5)	
			1.84E 03-- 3.48E 03		2.17E 03-- 3.09E 03	
MN-54	11	130.00	-1.59E 00( 1/ 6)	013 -1.59E 00( 1/ 6)	-1.01E-01( 0/ 5)	
			1.72E 01-- 1.72E 01		0.00E-01-- 0.00E-01	
FE-59	11	260.00	-8.22E 00( 0/ 6)	013 -8.22E 00( 0/ 6)	-1.60E 00( 0/ 5)	
			0.00E-01-- 0.00E-01		0.00E-01-- 0.00E-01	
CO-58	11	130.00	2.25E 01( 2/ 6)	013 2.25E 01( 2/ 6)	5.08E 00( 0/ 5)	
			1.63E 01-- 8.42E 01		0.00E-01-- 0.00E-01	
CO-60	11	130.00	1.49E 01( 0/ 6)	013 1.49E 01( 0/ 6)	7.02E 00( 1/ 5)	
			0.00E-01-- 0.00E-01		2.11E 01-- 2.11E 01	
ZN-65	11	260.00	1.93E 01( 0/ 6)	013 1.93E 01( 0/ 6)	-1.44E 00( 0/ 5)	
			0.00E-01-- 0.00E-01		0.00E-01-- 0.00E-01	
ZR-95	11	0.00	-4.71E 00( 0/ 6)	013 -4.71E 00( 0/ 6)	2.79E 01( 3/ 5)	
			0.00E-01-- 0.00E-01		3.59E 01-- 5.40E 01	
NB-95	11	0.00	6.97E 00( 0/ 6)	013 6.97E 00( 0/ 6)	2.72E 01( 4/ 5)	
			0.00E-01-- 0.00E-01		2.45E 01-- 4.78E 01	
I-131	11	0.00	2.54E 01( 0/ 6)	013 2.54E 01( 0/ 6)	1.60E 00( 0/ 5)	
			0.00E-01-- 0.00E-01		0.00E-01-- 0.00E-01	
CS-134	11	130.00	1.40E 02( 5/ 6)	013 1.40E 02( 5/ 6)	4.44E 00( 0/ 5)	11
			8.02E 01-- 2.23E 02		0.00E-01-- 0.00E-01	
CS-137	11	130.00	4.51E 02( 6/ 6)	013 4.51E 02( 6/ 6)	5.90E 01( 5/ 5)	3
			2.85E 02-- 7.26E 02		2.67E 01-- 1.37E 02	
BALA-140	11	0.00	1.44E 00( 0/ 6)	013 1.44E 00( 0/ 6)	-4.61E 00( 0/ 5)	
			0.00E-01-- 0.00E-01		0.00E-01-- 0.00E-01	

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ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM ANNUAL SUMMARY

PAGE 16 OF 16

OCONEE NUCLEAR STATION  
PICKENS COUNTY, SOUTH CAROLINA

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TLD'S	I I I I I		I I I I I		I I I I I		I I I I I		I I I I I		I I I I I		
MR/HOUR 26 LOCATIONS	I I I I I		I I I I I		I I I I I		I I I I I		I I I I I		I I I I I		
	I	MR/HOUR	98	I	0.00	I	2.03E-02( 95/ 95)	I	000.17	7.50E-02( 4/ 4)	I	1.23E-02( 3/ 3)	I
	I			I		I	7.00E-03-- 8.00E-02	I	Site fence/W6.80E-02-- 8.00E-02	I	9.00E-03-- 1.40E-02	I	I

MEAN BASED UPON ALL NET ACTIVITY MEASUREMENTS

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FRACTION OF DETECTABLE ACTIVITY MEASUREMENTS AT SPECIFIED LOCATIONS IS INDICATED IN PARENTHESES, (F)

Oconee Nuclear Station  
Semi-Annual Census of Milch Animals  
Table 2

<u>Name</u>	<u>Distance/Direction From Station</u>	<u>June 9, 1981</u>		<u>December 12, 1981</u>	
		<u>Cows</u>	<u>Goats</u>	<u>Cows</u>	<u>Goats</u>
I. C. Few	4.0 mi. ENE	1	0	1	0
R. Fowler	4.5 mi. E	1	0	1	0
T. I. Miller	5.0 mi. E	2	0	1	0
B. Powell	4.5 mi. W	72	0	78	0
B. Shirley	4.0 mi. W	1	0	1	0

PRP  
MR. C C Cunningham

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

WILLIAM O. PARKER, JR.  
VICE PRESIDENT  
STEAM PRODUCTION

April 21, 1982

TELEPHONE: AREA 704  
373-4063

Mr. James P. O'Reilly, Regional Administrator (2)  
U. S. Nuclear Regulatory Commission  
Region II  
101 Marietta Street, Suite 3100  
Atlanta, Georgia 30303

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

Dear Mr. O'Reilly:

Pursuant to Oconee Technical Specification 6.6.1.5, please find attached the Environmental Radiological Monitoring Program Annual Summary for 1981.

Very truly yours,

*William O. Parker, Jr.*

William O. Parker, Jr. *PHB*

JFK/php  
Attachment

cc: Mr. Harold R. Denton, Director  
Office of Nuclear Reactor Regulation  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555

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