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Georgia Power
the southern electric system

May 1, 1996

LCV-765-B

Docket Nos. 50-424
50-425

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D. C. 20555

VOGTLE ELECTRIC GENERATING PLANT
1995 ANNUAL REPORT - PART 2

Gentlemen:

In accordance with the applicable regulatory requirements, Georgia Power Company hereby submits Part 2 of the 1995 Annual Report of operating information.

The remainder of the 1995 reports not previously submitted are included.

Sincerely,

C. K. McCoy

CKM/JLL/gmb

Enclosure: Annual Report - Part 2

xc: Georgia Power Company
Mr. J. B. Beasley, Jr.
Mr. M. Sheibani
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U. S. Nuclear Regulatory Commission
Mr. S. D. Ebneter, Regional Administrator
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Mr. C. R. Ogle, Senior Resident Inspector, Vogtle

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VOGTLE ELECTRIC GENERATING PLANT - UNITS 1 AND 2
NRC DOCKET NOS. 50-424 AND 50-425
FACILITY OPERATING LICENSE NOS. NPF-68 AND NPF-81
1995 ANNUAL REPORT - PART 2

TABLE OF CONTENTS

I

VOGTLE ELECTRIC GENERATING PLANT - UNITS 1 AND 2
1995 ANNUAL REPORT - PART 2

INTRODUCTION

The Vogtle Electric Generating Plant Units 1 and 2 are powered by pressurized water reactors, each rated at 3565 megawatts thermal. It is located on the Savannah River in Burke County Georgia, 34 miles southeast of Augusta. The Unit 1 operating license was received on January 16, 1987 and commercial operation started on May 31, 1987. Unit 1 is operating in its seventh fuel cycle. Unit 2 received its operating license on February 9, 1989, began commercial operation on May 19, 1989. Unit 2 is operating in its fifth fuel cycle.

II

VOGTLE ELECTRIC GENERATING PLANT - UNITS 1 AND 2
1995 ANNUAL REPORT - PART 2

ANNUAL ENVIRONMENTAL OPERATING REPORT
(NONRADIOLOGICAL)

SPECIFICATION

In accordance with Section 5.4.1 of the Vogtle Electric Generating Plant (VEGP) Environmental Protection Plan (Nonradiological), Appendix B to Facility Operating License Nos. NPF-68 and NPF-81, this report is submitted describing implementation of the Environmental Protection Plan for the calendar year 1995.

REPORTING REQUIREMENTS

A. Summaries and Analyses of Results of Environmental Monitoring Activities for the Reporting Period

1. Aquatic Monitoring - Liquid effluent monitoring was performed in accordance with National Pollutant Discharge Elimination System (NPDES) Permit GA 0026786; there was no additional requirement for aquatic monitoring during 1995. Three minor NPDES permit noncompliance events were reported to the State of Georgia during 1995.

2. Terrestrial Monitoring - Terrestrial monitoring is not required.

3. Maintenance of Transmission Line Corridors

a. Corridor reclearing was conducted on the VEGP-Thalman 500-kV line in 1995. Maintenance work was performed with rotary mowers equipped with low ground pressure tires. In cultural resource areas, clearing was conducted by hand utilizing chain saws and brush axes where necessary.

There was no herbicide usage associated with any corridor maintenance during 1995.

There were no other transmission corridor maintenance activities conducted on VEGP-related transmission lines during 1995.

b. There were no clearing or maintenance activities conducted within the Ebenezer Creek or Francis Plantation areas during 1995.

c. Routine maintenance activities within the designated cultural properties along transmission line corridors were conducted in accordance with the Final Cultural Resources Management Plan.

4. Noise Monitoring - There were no complaints received by Georgia Power Company during 1995 regarding noise along the VEGP-related, high-voltage transmission lines.

B. Comparison of the 1995 Monitoring Activities with Preoperational Studies, Operational Controls, and Previous Monitoring Reports

These programs were not required because no nonradiological environmental monitoring programs were conducted during the reporting period beyond those performed in accordance with NPDES Permit No. 0026786 referenced in Section A above.

C. Assessment of the Observed Impacts of Plant Operations on the Environment

There were no significant adverse environmental impacts associated with plant operations during 1995.

D. Environmental Protection Plan (EPP) Noncompliance and Corrective Actions

There were no EPP noncompliances during 1995.

E. Changes in Station Design or Operations, Tests, or Experiments Made in Accordance with EPP Subsection 3.1 which Involved a Potentially Significant Unreviewed Environmental Question

There were no changes, tests, or experiments in 1995 which involved a potentially significant unreviewed environmental question.

F. Nonroutine reports Submitted in Accordance with EPP Section 5.4.2

There were no nonroutine reports submitted in 1995.

III

VOGTLE ELECTRIC GENERATING PLANT - UNITS 1 AND 2
1995 ANNUAL REPORT - PART 2

ANNUAL RADIOLOGICAL ENVIRONMENTAL SURVEILLANCE REPORT

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ACRONYMS

A2LA	American Association of Laboratory Accreditation
ASTM	American Society for Testing and Materials
CL	Confidence Level
EL	Environmental Laboratory
EPA	Environmental Protection Agency
GPC	Georgia Power Company
MDC	Minimum Detectable Concentration
MDD	Minimum Detectable Difference
NA	Not Applicable
NDM	No Detectable Measurement(s)
NRC	Nuclear Regulatory Commission
ODCM	Offsite Dose Calculation Manual
REMP	Radiological Environmental Monitoring Program
RL	Reporting Level
RM	River Mile
SRS	Savannah River Site
TLD	Thermoluminescent Dosimeter
TS	Technical Specifications
VEGP	Alvin W. Vogtle Electric Generating Plant

1.0 INTRODUCTION

The objectives of the Radiological Environmental Monitoring Program (REMP) are to ascertain the levels of radiation and concentrations of radioactivity in the environs of the Alvin W. Vogtle Electric Generating Plant (VEGP) and to assess any radiological impact upon the environment due to plant operation.

The bases for such an assessment include appropriate comparisons between results obtained at control stations (locations where radiological levels are not expected to be significantly affected by plant operation) with those obtained at indicator stations (locations where it is anticipated that radiological levels are more likely to be affected by plant operation), and comparisons between results obtained during preoperation with those obtained during operation.

The preoperational stage of the REMP started in August of 1981 when initial collections of samples were made. There was a phase-in period of a few years before the preoperational program was fully implemented. The transition from the preoperational stage to the operational stage hinged about initial criticality for Unit 1 which occurred on March 9, 1987.

The REMP is conducted in accordance with Technical Specifications (TS) 6.7.4.g and Chapter 4 of the Offsite Dose Calculation Manual (ODCM). The REMP activities for 1995 are reported herein in accordance with TS 6.8.1.3 and ODCM 7.1. All dates in this report are for 1995 unless otherwise indicated.

A summary description of the REMP is provided in Section 2 of this report; maps showing the sampling stations are keyed to a table indicating the direction and distance of each station from a point midway between the two reactors. An annual summary of the main laboratory analysis results obtained from the samples utilized for environmental monitoring is presented in Section 3. A discussion of the results, including assessments of any radiological impacts upon the environment and the results of the land use census and the river survey, is provided in Section 4. The results of the Interlaboratory Comparison Program are presented in Section 5. Conclusions are stated in Section 6.

2.0 SUMMARY DESCRIPTION

A summary description of the REMP is provided in Table 2-1. This table portrays the program in the manner by which it is being regularly carried out. Table 2-1 is essentially a copy of ODCM Table 4-1 which delineates the program's requirements. Sampling locations required by Table 2-1 are described in Table 2-2 and are shown on maps in Figures 2-1 through 2-4. This description of the sample locations closely follows the table and figures in ODCM 4.2.

In accordance with ODCM 4.1.1.2.1, deviations from the required sampling schedule as set forth in Table 2-1 are permitted if specimens are unobtainable due to hazardous conditions, unavailability, inclement weather, equipment malfunction or other just reasons. Any deviations are accounted for in the discussions for the particular sample types in Section 4.

All laboratory analyses were performed by Georgia Power Company's (GPC) Environmental Laboratory (EL) in Smyrna, Georgia. Since 1987, the EL has been accredited by the American Association of Laboratory Accreditation (A2LA) for radiochemistry. The A2LA is a nonprofit, nongovernmental, public service, membership society dedicated to the formal recognition of competent laboratories and related activities. Accreditation is based upon internationally accepted criteria for laboratory competence[1].

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1. ISO/IEC Guide 25, 1990, "General Requirements for the Competence of Calibration and Testing Laboratories"

TABLE 2-1 (SHEET 1 OF 5)

SUMMARY DESCRIPTION OF RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

Exposure Pathway and/or Sample	Number of Representative Samples and Sample Locations	Sampling and Collection Frequency	Type and Frequency of Analysis
1. Direct Radiation	Thirty nine routine monitoring stations with two or more dosimeters placed as follows: An inner ring of stations, one in each meteorological sector in the general area of the site boundary; An outer ring of stations, one in each meteorological sector at approximately 5 miles from the site: and Special interest areas, such as population centers, nearby recreation areas, and control stations.	Quarterly	Gamma dose, quarterly

TABLE 2-1 (SHEET 2 OF 5)

SUMMARY DESCRIPTION OF RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

Exposure Pathway and/or Sample	Number of Representative Samples and Sample Locations	Sampling and Collection Frequency	Type and Frequency of Analysis
2. Airborne			
Radioiodine and Particulates	Samples from seven locations: Five locations close to the site boundary in different sectors; A community having the highest calculated annual average ground-level D/Q: and A control location near a population center at a distance of about 14 miles.	Continuous sampler operation with sample collection weekly, or more frequently if required by dust loading	Radioiodine canister: I-131 analysis, weekly Particulate sampler: Gross beta analysis (1) following filter change and gamma isotopic analysis (2) of composite (by location), quarterly
3. Waterborne			
a. Surface (3)	One sample upriver Two samples downriver	Composite sample over one month period (4)	Gamma isotopic analysis (2), monthly. Composite for tritium analysis, quarterly

TABLE 2-1 (SHEET 3 OF 5)

SUMMARY DESCRIPTION OF RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

Exposure Pathway and/or Sample	Number of Representative Samples and Sample Locations	Sampling and Collection Frequency	Type and Frequency of Analysis
b. Drinking	Two samples at each of the two nearest water treatment plants that could be affected by plant discharges Two samples at a control location	Composite sample of river water near the Intake of each water treatment plant over two week period (4) when I-131 analysis is required for each sample; monthly composite otherwise; and grab sample of finished water at each water treatment plant every two weeks or monthly, as appropriate.	I-131 analysis on each sample when the dose calculated for the consumption of the water is greater than 1 mrem per year (5). Composite for gross beta and gamma isotopic analyses (2) on raw water, monthly. Gross beta, gamma Isotopic and I-131 analyses on grab sample of finished water, monthly. Composite for tritium analysis on raw and finished water, quarterly.
c. Sediment from Shoreline	One sample from downriver area with existing or potential recreational value One sample from upriver area with existing or potential recreational value	Semiannually	Gamma isotopic analysis (2), semiannually
4. Ingestion			
a. Milk	Two samples from milking animals (6) at control locations at a distance of about 10 miles or more	Biweekly	Gamma isotopic analysis (2,7), biweekly

TABLE 2-1 (SHEET 4 OF 5)

SUMMARY DESCRIPTION OF RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

Exposure Pathway and/or Sample	Number of Representative Samples and Sample Locations	Sampling and Collection Frequency	Type and Frequency of Analysis
b. Fish	At least one sample of any commercially or recreationally important species near the plant discharge	Semiannually	Gamma isotopic analysis (2) on edible portions, semiannually
	At least one sample of any commercially or recreationally important species in an area not influenced by plant discharges		
	At least one sample of any anadromous species near the plant discharge	During the spring spawning season	Gamma isotopic analysis (2) on edible portions, annually
c. Grass or Leafy Vegetation	One sample from two onsite locations near the site boundary in different sectors	Monthly during the growing season	Gamma isotopic analysis (2,7), monthly
	One sample from a control location at a distance of about 17 miles		

TABLE 2-1 (SHEET 5 OF 5)

SUMMARY DESCRIPTION OF
RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

TABLE NOTATIONS

(1) Airborne particulate sample filters shall be analyzed for gross beta radioactivity 24 hours or more after sampling to allow for radon and thoron daughter decay. If gross beta activity in air particulate samples is greater than 10 times the yearly mean of control samples, gamma isotopic analysis shall be performed on the individual samples.

(2) Gamma isotopic analysis means the identification and quantification of gamma-emitting radionuclides that may be attributable to the effluents from the facility.

(3) The upriver sample is taken at a distance beyond significant influence of the discharge. The downriver samples are taken in areas beyond but near the mixing zone.

(4) Composite sample aliquots shall be collected at time intervals that are very short (e.g., hourly) relative to the compositing period (e.g., monthly) to assure obtaining a representative sample.

(5) The dose shall be calculated for the maximum organ and age group, using the methodology and parameters in the ODCM.

(6) A milking animal is a cow or goat producing milk for human consumption.

(7) If the gamma isotopic analysis is not sensitive enough to meet the Minimum Detectable Concentration (MDC) for I-131, a separate analysis for I-131 may be performed.

TABLE 2-2 (SHEET 1 OF 3)

RADIOLOGICAL ENVIRONMENTAL SAMPLING LOCATIONS

Station Number	Station Type (1)	Descriptive Location	Direction (2)	Distance (miles) (2)	Sample Type (3)
1	I	Hancock Landing Road	N	1.1	D
2	I	River Bank	NNE	0.8	D
3	I	Discharge Area	NE	0.6	A
3	I	River Bank	NE	0.7	D
4	I	River Bank	ENE	0.8	D
5	I	River Bank	E	1.0	D
6	I	Plant Wilson	ESE	1.1	D
7	I	Simulator Building	SE	1.7	ADV
8	I	River Road	SSE	1.1	D
9	I	River Road	S	1.1	D
10	I	Meteorological Tower	SSW	0.9	A
10	I	River Road	SSW	1.1	D
11	I	River Road	SW	1.2	D
12	I	River Road	WSW	1.2	AD
13	I	River Road	W	1.3	D
14	I	River Road	WNW	1.8	D
15	I	Hancock Landing Road	NW	1.5	DV
16	I	Hancock Landing Road	NNW	1.4	AD
17	O	Savannah River Site (SRS), River Road	N	5.4	D
18	O	SRS, D Area	NNE	5.0	D
19	O	SRS, Road A.13	NE	4.6	D
20	O	SRS, Road A.13.1	ENE	4.8	D
21	O	SRS, Road A.17	E	5.3	D
22	O	River Bank	ESE	5.2	D
23	O	River Road	SE	4.6	D
24	O	Chance Road	SSE	4.9	D
25	O	Chance Road near Highway 23	S	5.2	D
26	O	Highway 23 and Ebenezer Church Road	SSW	4.6	D
27	O	Highway 23 opposite Boll Weevil Road	SW	4.7	D
28	O	Thomas Road	WSW	5.0	D
29	O	Claxton-Lively Road	W	5.1	D
30	O	Nathaniel Howard Road	WNW	5.0	D
31	O	River Road at Allen's Chapel Fork	NW	5.0	D
32	O	River Bank	NNW	4.7	D
33	O	Hunting Cabin	SE	3.3	D
35	O	Girard	SSE	6.6	AD

TABLE 2-2 (SHEET 2 OF 3)

RADIOLOGICAL ENVIRONMENTAL SAMPLING LOCATIONS

Station Number	Station Type (1)	Descriptive Location	Direction (2)	Distance (miles) (2)	Sample Type (3)
36	C	GPC Waynesboro Op HQ	WSW	13.9	AD
37	C	Waynesboro Substation	WSW	6.7	DV
43	O	Employee's Rec Area	SW	2.2	D
47	C	Oak Grove Church	SE	10.4	D
48	C	McBean Cemetery	NW	10.2	D
80	C	Augusta Water Treatment Plant	NNW	29.0	W(4)
81	C	Savannah River	N	2.5	F(5)S(6)
82	C	Sav River (RM 151.2)	NNE	0.8	R
83	I	Sav River (RM 150.4)	ENE	0.8	RS(6)
84	O	Sav River (RM 149.5)	ESE	1.6	R
85	I	Savannah River	ESE	4.3	F(5)
87	I	Beaufort-Jasper County Water Treatment Plant, Beaufort, SC	SE	74	W(7)
88	I	Cherokee Hill Water Treatment Plant, Port Wentworth, GA	SSE	71	W(8)
98	C	W. C. Dixon Dairy	SE	9.8	M
99	C	Boyceland Dairy	W	20.9	M

TABLE NOTATIONS

(1) Station Types
- C - Control
- I - Indicator
- O - Other

(2) Direction and distance are reckoned from a point midway between the two reactors.

(3) Sample Types
- A - Airborne Radioactivity
- D - Direct Radiation
- F - Fish
- M - Milk
- R - River Water
- S - River Shoreline Sediment
- W - Drinking Water
- V - Vegetation

TABLE 2-2 (SHEET 3 OF 3)

RADIOLOGICAL ENVIRONMENTAL MONITORING LOCATIONS

TABLE NOTATIONS (CONTINUED)

(4) The intake for the Augusta Water Treatment Plant is located on the Augusta Canal. The entrance to the canal is at River Mile (RM) 207 on the Savannah River. The canal effectively parallels the river. The intake to the pumping station is about 4 miles down the canal and only a tenth of a mile from the river (across land).

(5) A 5 mile stretch of the river is generally needed to obtain adequate fish samples. Samples are normally gathered between RM 153 and 158 for upriver collections and between RM 144 and 149.4 for downriver collections.

(6) Sediment is collected at locations with existing or potential recreational value. Because high water, shifting of the river bottom, or other reasons could cause a suitable location for sediment collections to become unavailable or unsuitable, a stretch of the river between RM 148.5 and 150.5 was designated for downriver collections while a stretch between RM 153 and 154 was designated for upriver collections. In practice, collections are normally made at RM 150.2 for downriver collections and RM 153.3 for upriver collections.

(7) The intake for the Beaufort-Jasper County Water Treatment Plant is located at the end of a canal which begins at RM 39.3 on the Savannah River. This intake is about 16 miles by line of sight down the canal from its beginning on the Savannah River.

(8) The intake for the Cherokee Hill Water Treatment Plant is located on Abercorn Creek which is about one and a quarter creek miles from its mouth on the Savannah River at RM 29.

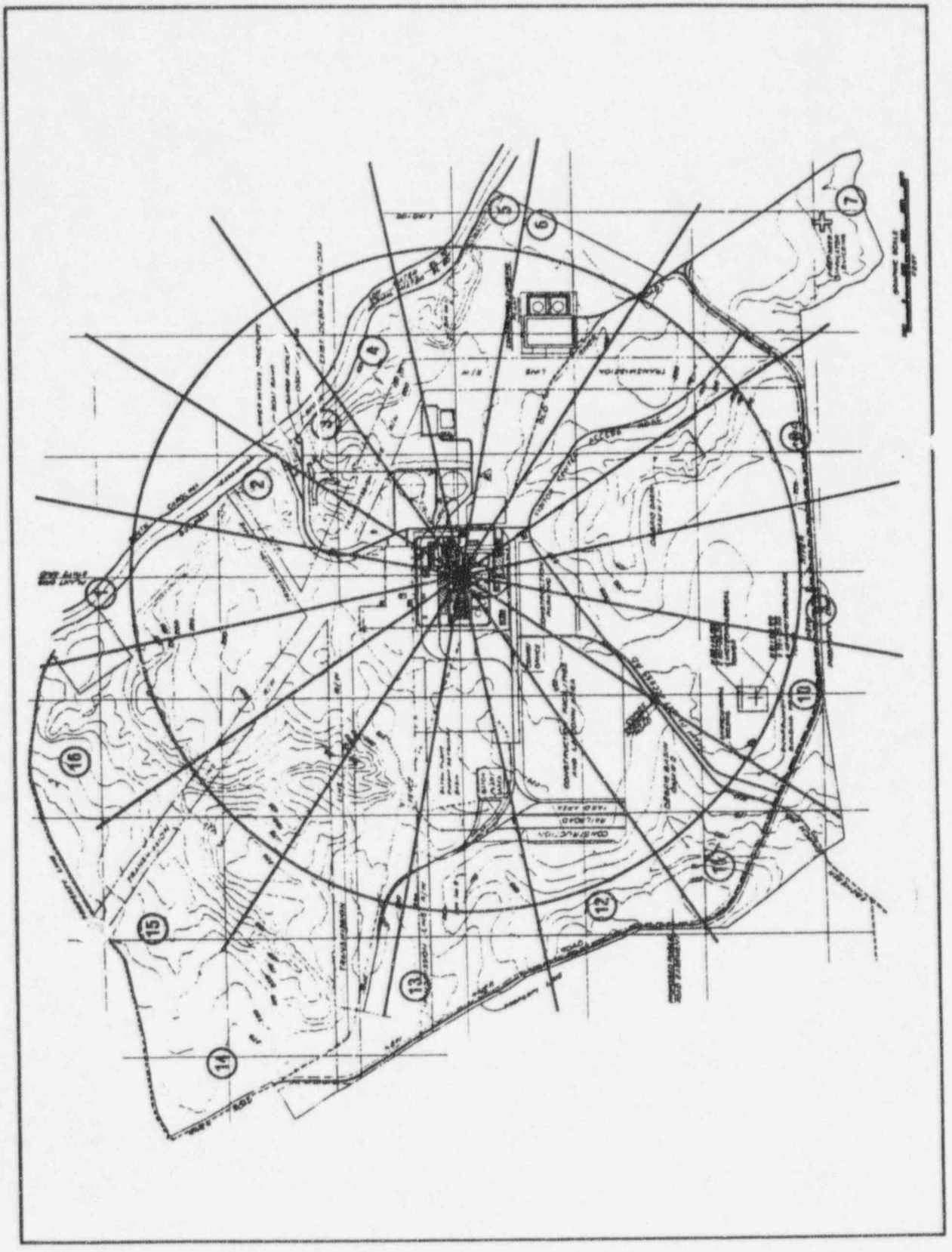

FIGURE 2-1 TERRESTRIAL STATIONS NEAR SITE BOUNDARY

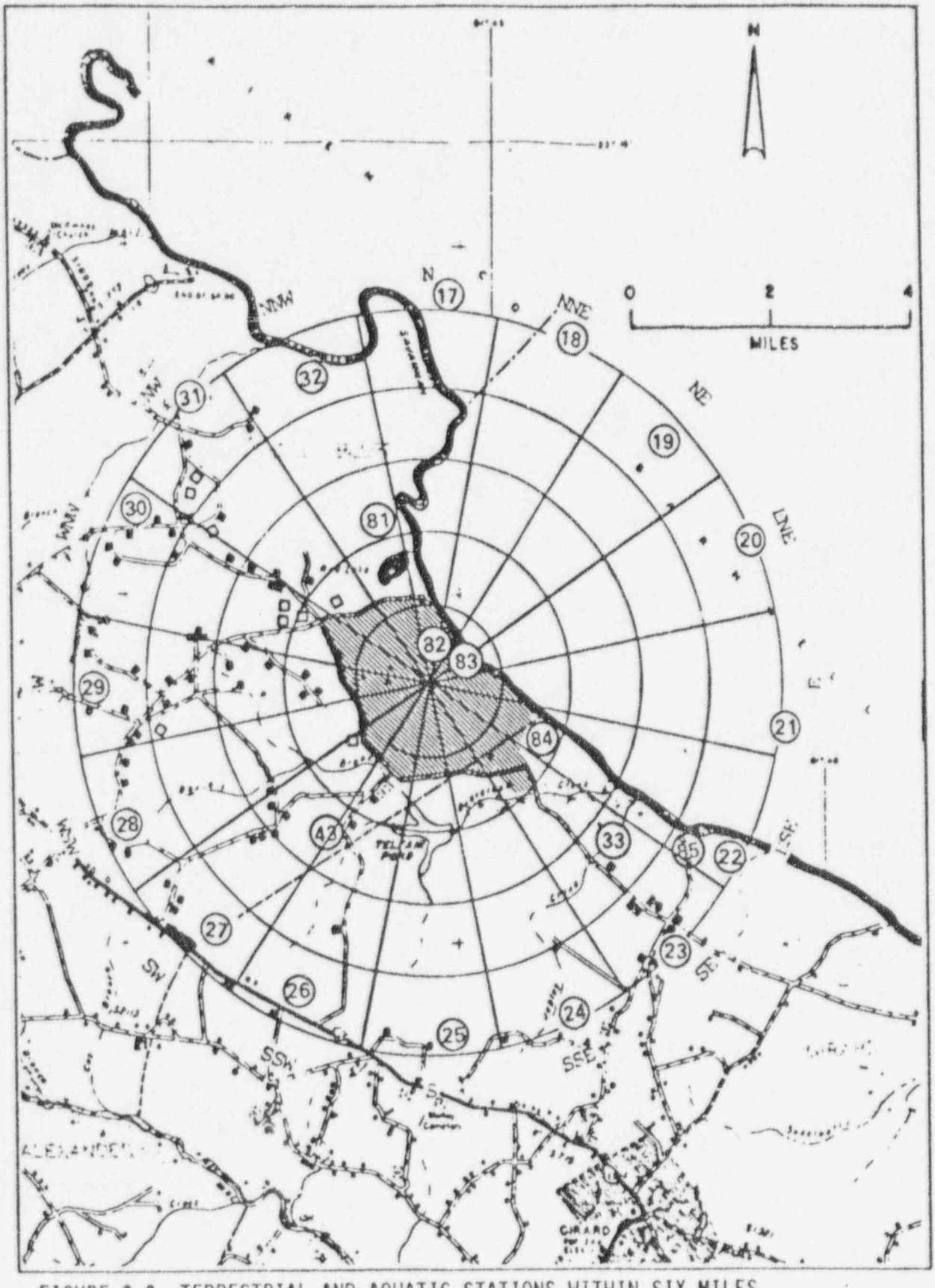

FIGURE 2-2 TERRESTRIAL AND AQUATIC STATIONS WITHIN SIX MILES

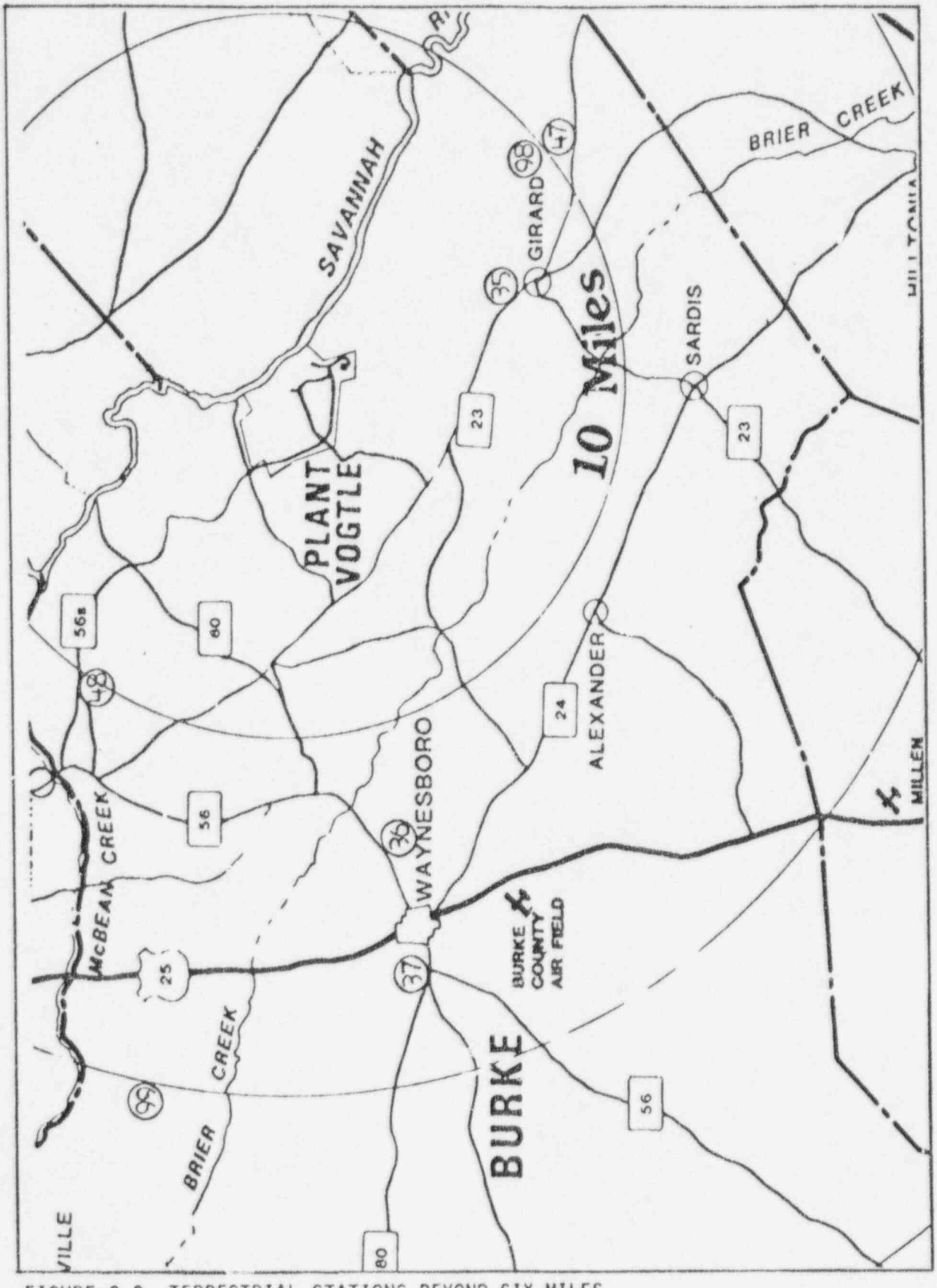

FIGURE 2-3 TERRESTRIAL STATIONS BEYOND SIX MILES

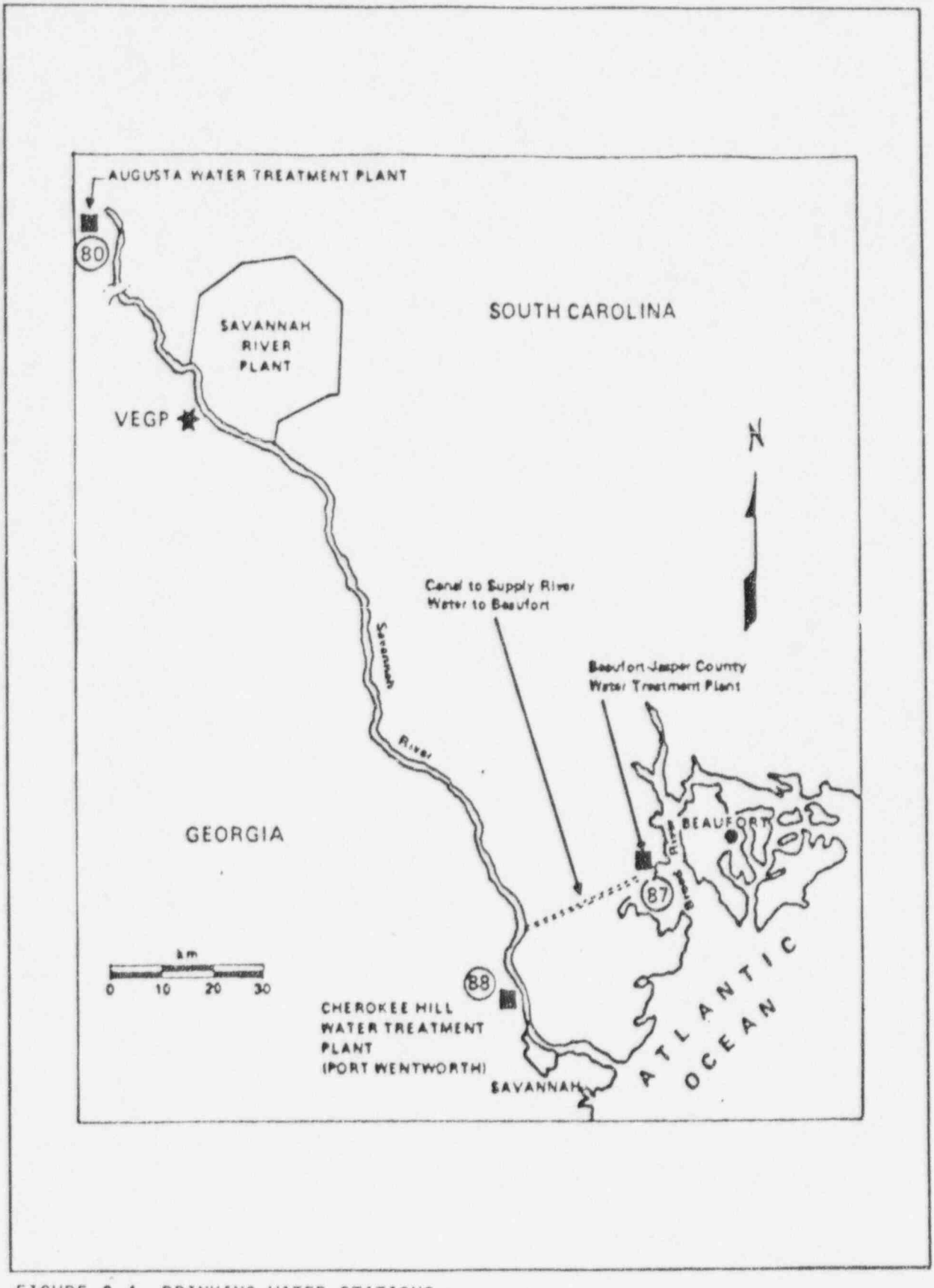

FIGURE 2-4 DRINKING WATER STATIONS

3.0 RESULTS SUMMARY

In accordance with ODCM 7.1,2.1, summarized and tabulated results for all of the regular samples collected for the year at the designated indicator and control stations are presented in Table 3-1 in a format similar to that found in Table 3 of the Nuclear Regulatory Commission (NRC) Radiological Assessment Branch Technical Position, Revision 1, November 1979. Since no reportable occurrences were called for during the year, the column entitled "Number of Reportable Occurrences" has been excluded from Table 3-1. Results for samples collected at locations other than indicator or control stations or in addition to those stipulated by Table 2-1 are discussed in Section 4 for the particular sample type.

Only the naturally occurring radionuclides which are found in the plant's effluent releases need be reported. The radionuclide, Be-7, which occurs abundantly in nature is also produced in the reactors. Minuscule quantities are found in the liquid releases. No other naturally occurring radionuclides have been found in the plant's effluent releases. Hence, the radionuclides of interest for the samples monitoring liquid releases (river water, drinking water, fish and river shoreline sediment) are man-made radionuclides plus Be-7, while only man-made radionuclides are of interest for the other REMP samples.

TABLE 3-1 (SHEET 1 OF 9)
RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY
Vogtle Electric Generating Plant, Docket Nos. 50-424 and 50-425
Burke County, Georgia

Medium or Pathway Sampled (Unit of Measurement)	Type and Total Number of Analyses Performed	Minimum Detectable Concentration (MDC) (a)	Indicator Locations Mean (b) Range (Fraction)	Location with Highest Annual Mean Name Distance & Direction	Mean (b) Range (Fraction)	Control Locations Mean (b) Range (Fraction)
Airborne Particulates (fCi/m3)	Gross Beta 310	10	21.1 7-38 (258/258)	No. 12 River Rd 1.2 miles WSW	21.4 8-32 (52/52)	20.7 9-31 (52/52)
	Gamma Isotopic 24					
	Cs-134	50	NDM (c)		NDM	NDM
	Cs-137	60	NDM		NDM	NDM
Airborne Radioiodine (fCi/m3)	I-131 310	70	NDM		NDM	NDM
Direct Radiation (mR/91 days)	Gamma Dose 80	NA (d)	12.0 9-17 (64/64)	No. 36 GPC Op Hq 13.9 miles WSW	15.3 15-16 (4/4)	12.5 10-16 (16/16)

TABLE 3-1 (SHEET 2 OF 9)
RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY
Vogtle Electric Generating Plant, Docket Nos. 50-424 and 50-425
Burke County, Georgia

Medium or Pathway Sampled (Unit of Measurement)	Type and Total Number of Analyses Performed	Minimum Detectable Concentration (MDC) (a)	Indicator Locations Mean (b) Range (Fraction)	Location with Highest Annual Mean Name Distance & Direction	Mean (b) Range (Fraction)	Control Locations Mean (b) Range (Fraction)
Milk (pCi/l)	Gamma Isotopic 52					
	Cs-134	15	NA		NDM	NDM
	Cs-137	18	NA		NDM	NDM
	Ba-140	60	NA		NDM	NDM
	La-140	15	NA		NDM	NDM
	I-131 52	1	NA		NDM	NDM
Vegetation (pCi/kg wet)	Gamma Isotopic 36					
	I-131	60	NDM		NDM	NDM
	Cs-134	60	NDM		NDM	NDM
	Cs-137	80	57.8 55-60 (2/24)	No. 37 Substation 16.7 miles WSW	179.0 179-179 (1/12)	179.0 179-179 (1/12)

TABLE 3-1 (SHEET 3 OF 9)
RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY
Vogtle Electric Generating Plant, Docket Nos. 50-424 and 50-425
Burke County, Georgia

Medium or Pathway Sampled (Unit of Measurement)	Type and Total Number of Analyses Performed	Minimum Detectable Concentration (MDC) (a)	Indicator Locations Mean (b) Range (Fraction)	Location with Highest Annual Mean Name Distance & Direction	Mean (b) Range (Fraction)	Control Locations Mean (b) Range (Fraction)
River Water (pCi/l)	Gamma Isotopic 24					
	Be-7	124 (e)	NDM		NDM	NDM
	Mn-54	15	NDM		NDM	NDM
	Fe-59	30	NDM		NDM	NDM
	Co-58	15	NDM		NDM	NDM
	Co-60	15	NDM		NDM	NDM
	Zn-65	30	NDM		NDM	NDM
	Zr-95	30	NDM		NDM	NDM
	Nb-95	15	NDM		NDM	NDM
	I-131	15	NDM		NDM	NDM
	Cs-134	15	NDM		NDM	NDM
	Cs-137	18	NDM		NDM	NDM
	Ba-140	60	NDM		NDM	NDM
	La-140	15	NDM		NDM	NDM
	Tritium 8	3000	597 304-1150 (4/4)	No. 83 Downriver 0.4 miles	597 304-1150 (4/4)	236 180-333 (3/4)

TABLE 3-1 (SHEET 4 OF 9)
RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY
Vogtle Electric Generating Plant, Docket Nos. 50-424 and 50-425
Burke County, Georgia

Medium or Pathway Sampled (Unit of Measurement)	Type and Total Number of Analyses Performed	Minimum Detectable Concentration (MDC) (a)	Indicator Locations Mean (b) Range (Fraction)	Location with Highest Annual Mean Name Distance & Direction	Mean (b) Range (Fraction)	Control Locations Mean (b) Range (Fraction)
Water Near Intakes to Water Treatment Plants (pCi/l)	Gross Beta 36	4	3.06 0.5-6.6 (24/24)	No. 80 Augusta Upriver 56 miles	4.90 2.3-8.8 (12/12)	4.90 2.3-8.8 (12/12)
	Gamma Isotopic 36					
	Be-7	124 (e)	NDM		NDM	NDM
	Mn-54	15	NDM		NDM	NDM
	Fe-59	30	NDM		NDM	NDM
	Co-58	15	NDM		NDM	NDM
	Co-60	15	NDM		NDM	NDM
	Zn-65	30	NDM		NDM	NDM
	Zr-95	30	NDM		NDM	NDM
	I-131 (f)	15	NDM		NDM	NDM
	Cs-134	15	NDM		NDM	NDM
	Cs-137	18	NDM		NDM	NDM
	Ba-140	60	NDM		NDM	NDM
	La-140	15	NDM		NDM	NDM

TABLE 3-1 (SHEET 5 OF 9)
RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY
Vogtle Electric Generating Plant, Docket Nos. 50-424 and 50-425
Burke County, Georgia

Medium or Pathway Sampled (Unit of Measurement)	Type and Total Number of Analyses Performed	Minimum Detectable Concentration (MDC) (a)	Indicator Locations Mean (b) Range (Fraction)	Location with Highest Annual Mean Name Distance & Direction	Mean (b) Range (Fraction)	Control Locations Mean (b) Range (Fraction)
	Tritium 12	3000	917 634-1230 (8/8)	No. 88 Port Went Downriver 122 miles	987 737-1230 (4/4)	201 201-201 (1/4)
Finished Water at Water Treatment Plants (pCi/l)	Gross Beta 36	4	2.74 1.4-4.3 (24/24)	No. 88 Port Went Downriver 122 miles	2.84 1.4-4.3 (12/12)	2.32 0.7-3.6 (12/12)
	Gamma Isotopic 36					
	Be-7	124 (e)	NDM		NDM	NDM
	Mn-54	15	NDM		NDM	NDM
	Fe-59	30	NDM		NDM	NDM
	Co-58	15	NDM		NDM	NDM
	Co-60	15	NDM		NDM	NDM
	Zn-65	30	NDM		NDM	NDM
	Zr-95	30	NDM		NDM	NDM

TABLE 3-1 (SHEET 6 OF 9)
RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY
Vogtle Electric Generating Plant, Docket Nos. 50-424 and 50-425
Burke County, Georgia

Medium or Pathway Sampled (Unit of Measurement)	Type and Total Number of Analyses Performed	Minimum Detectable Concentration (MDC) (a)	Indicator Locations Mean (b) Range (Fraction)	Location with Highest Annual Mean Name Distance & Direction	Mean (b) Range (Fraction)	Control Locations Mean (b) Range (Fraction)
	Nb-95	15	NDM		NDM	NDM
	Cs-134	15	NDM		NDM	NDM
	Cs-137	18	NDM		NDM	NDM
	Ba-140	60	NDM		NDM	NDM
	La-140	15	NDM		NDM	NDM
	I-131 36	1	NDM		NDM	NDM
	Tritium 12	2000	847 527-1200 (8/8)	No. 88 Port Went Downriver 122 miles	941 678-1200 (4/4)	279 279-279 (1/4)
Anadromous Fish (pCi/kg wet)	Gamma Isotopic 1					
	Be-7	655 (e)	NDM		NDM	NA
	Mn-54	130	NDM		NDM	NA
	Fe-59	260	NDM		NDM	NA
	Co-58	130	NDM		NDM	NA

TABLE 3-1 (SHEET 7 OF 9)
RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY
Vogtle Electric Generating Plant, Docket Nos. 50-424 and 50-425
Burke County, Georgia

Medium or Pathway Sampled (Unit of Measurement)	Type and Total Number of Analyses Performed	Minimum Detectable Concentration (MDC) (a)	Indicator Locations Mean (b) Range (Fraction)	Location with Highest Annual Mean Name Distance & Direction	Mean (b) Range (Fraction)	Control Locations Mean (b) Range (Fraction)
	Co-60	130	NDM		NDM	NA
	Zn-65	260	NDM		NDM	NA
	Cs-134	130	NDM		NDM	NA
	Cs-137	150	NDM		NDM	NA
Fish (pCi/kg wet)	Gamma Isotopic 7					
	Be-7	655 (e)	NDM		NDM	NDM
	Mn-54	130	NDM		NDM	NDM
	Fe-59	260	NDM		NDM	NDM
	Co-58	130	NDM		NDM	NDM
	Co-60	130	NDM		NDM	NDM
	Zn-65	260	NDM		NDM	NDM
	Cs-134	130	NDM		NDM	NDM
	Cs-137	150	125.1 31-286 (3/3)	No. 85 Downriver 4.1 miles	125.1 31-286 (3/3)	96.1 22-250 (4/4)

TABLE 3-1 (SHEET 8 OF 9)
RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY
Vogtle Electric Generating Plant, Docket Nos. 50-424 and 50-425
Burke County, Georgia

Medium or Pathway Sampled (Unit of Measurement)	Type and Total Number of Analyses Performed	Minimum Detectable Concentration (MDC) (a)	Indicator Locations Mean (b) Range (Fraction)	Location with Highest Annual Mean Name Distance & Direction	Mean (b) Range (Fraction)	Control Locations Mean (b) Range (Fraction)
Sediment (pCi/kg dry)	Gamma Isotopic 4					
	Be-7	655 (e)	1865 1500-2230 (2/2)	No. 83 Downriver 0.6 miles	1865 1500-2230 (2/2)	1575 1430-1720 (2/2)
	Co-58	43 (e)	42.4 42-42 (1/2)	No. 83 Downriver 0.6 miles	42.4 42-42 (1/2)	NDM
	Co-60	70 (e)	267 172-361 (2/2)	No. 83 Downriver 0.6 miles	267 172-361 (2/2)	NDM
	Cs-134	150	NDM		NDM	NDM
	Cs-137	180	357 257-457 (2/2)	No. 83 Downriver 0.6 miles	357 257-457 (2/2)	123 122-124 (2/2)

TABLE 3-1 (SHEET 9 OF 9)
ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY
Vogtle Electric Generating Plant, Docket Nos. 50-424 and 50-425
Burke County, Georgia

NOTATIONS

a. The MDC is defined in ODCM 10.1. Except as noted otherwise, the values listed in this column are the detection capabilities required by ODCM Table 4-3. The values listed in this column are a priori (before the fact) MDCs. In practice, the a posteriori (after the fact) MDCs are generally lower than the values listed. Any a posteriori MDC greater than the value listed in this column is discussed in Section 4.

b. Mean and range are based upon detectable measurements only. The fraction of all measurements at a specified location which is detectable is placed in parenthesis.

c. No Detectable Measurement(s).

d. Not Applicable.

e. The EL has determined that this value may be routinely attained under normal conditions. No value is provided in ODCM Table 4-3.

f. Item 3 of ODCM Table 4-1 implies that an I-131 analysis is not required to be performed on these samples when the dose calculated from the consumption of water is less then 1 mrem per year.

4.0 DISCUSSION OF RESULTS

An interpretation and evaluation, as appropriate, of the laboratory results for each type sample are included in this section. Relevant comparisons were made between the difference in average values for indicator and control stations and the calculated Minimum Detectable Difference (MDD) between these two groups at the 99 percent Confidence Level (CL). The MDD was determined using the standard Student's t-test. A difference in the average values which was less than the MDD was considered to be statistically indiscernible.

Pertinent results were also compared with past results including those obtained during preoperation. The results were examined to perceive any trends. To provide perspective, a result might also be compared with its Reporting Level (RL) or Minimum Detectable Concentration (MDC) whose nominal values are found in ODCM Tables 4-2 and 4-3, respectively. Attempts were made to explain any high radiological levels found in the samples. During the year there were no failures in the laboratory analyses for any of the samples in attaining the MDCs required by ODCM Table 4-3.

Unless otherwise indicated, any reference made in this section to the results of a previous period are results which have been purged of any obvious extraneous short term impacts. During preoperation, these included the nuclear weapons test in the fall of 1980 (apparently the last in a series of atmospheric tests conducted on mainland China over a 9 year period), abnormal releases from the Savannah River Site (SRS), and the Chernobyl incident in the spring of 1986. After operation commenced, short term impacts included abnormal releases from SRS during 1987 and 1991.

A significant component of the Cs-137 which has often been found in various samples over the years and continues to be found is attributed to the numerous nuclear weapons tests which were conducted prior to preoperation.

All results were tested for conformance to Chauvenet's Criterion[2] to flag any values which might differ from the others in its set by a relatively large amount. Identified outliers were investigated to determine reason(s) for deviation from the norm. If due to an equipment malfunction or other valid physical reason, the anomalous result was deemed non-representative and excluded from the data set.

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2. G. D. Chase and J. L. Rabinowetz, Principles of Radioisotope Methodology, (Burgess Publishing Company, 1962), pages 87-90.

No datum was excluded for failing Chauvenet's Criterion only. Any exclusions are discussed in this section under the appropriate sample type.

An annual land use census as required by TS 6.7.4.g(2) and ODCM 4.1.2 was conducted on March 28 to determine the locations of the nearest permanent residence, milk animal and garden of greater than 500 square feet producing broad leaf vegetation in each of the 16 meteorological sectors within a distance of 5 miles; the locations of the nearest beef cattle in each sector was also determined. A milk animal is a cow or goat producing milk for human consumption. Land within SRS was excluded from the census. To accommodate scheduling, a second land use census was conducted during 1995 on December 12-13. The censi results are tabulated in Table 4-1.

ODCM 4.1.2.2.1 requires a new controlling receptor in ODCM 3.4.3, if the land use census identifies a location that yields a calculated dose greater than that currently being calculated. An analysis of the March 28 census results showed there was none. However, a new controlling receptor (a child in the SSW sector at 4.7 miles receiving dose via the inhalation, ground plane, cow meat and vegetation pathways) was identified from the results of the December 12-13 census.

ODCM 4.1.2.2.2 requires that whenever the land use census identifies a location which would yield a calculated dose (via the same ingestion pathway) 20 percent greater than that from a current indicator station, the new location must become a REMP station (if samples are available). None of the gardens from either census yielded a calculated dose 20 percent greater than that for any of the current indicator stations for vegetation. No milk animals were found in the censi.

The annual survey of the Savannah River downstream of the plant for approximately 104 miles was conducted on September 19 to identify those who use water from the river for purposes of drinking or irrigation. As in all previous surveys, no intakes for drinking water or irrigation were observed. This result was corroborated by information obtained from the Georgia Department of Natural Resources on September 22 and the South Carolina Department of Health and Environmental Control on October 25; it was confirmed that no water withdrawal permits for drinking water or irrigation purposes had been issued over this stretch of the Savannah River . The two water treatment plants used as indicator stations for drinking water are located further downriver.

TABLE 4-1

LAND USE CENSI RESULTS

Distance in Miles to Nearest Location in Each Sector

SECTOR	RESIDENCE	MILK ANIMAL	BEEF CATTLE	GARDEN
March 28				
N	1.2	*	*	*
NNE	*	*	*	*
NE	*	*	*	*
ENE	*	*	*	*
E	*	*	*	*
ESE	4.2	*	*	*
SE	4.3	*	4.9	*
SSE	4.6	*	4.6	*
S	4.3	*	4.6	*
SSW	4.7	*	4.4	*
SW	2.9	*	5.0	*
WSW	1.2	*	2.8	*
W	1.9	*	*	*
WNW	1.8	*	2.2	*
NW	1.6	*	4.8	5.0
NNW	1.4	*	*	*
December 12-13				
N	*	*	*	*
NNE	*	*	*	*
NE	*	*	*	*
ENE	*	*	*	*
E	*	*	*	*
ESE	4.2	*	*	*
SE	4.3	*	4.9	*
SSE	4.6	*	4.6	*
S	4.3	*	*	*
SSW	4.7	*	4.7	4.7
SW	2.9	*	5.0	*
WSW	1.2	*	2.6	4.8
W	3.7	*	*	4.3
WNW	1.8	*	*	*
NW	1.6	*	1.8	3.9
NNW	1.4	*	*	*

* None within 5 miles and outside the SRS.

4.1 Airborne

In accordance with Tables 2-1 and 2-2, airborne particulates and airborne radioiodine are collected at 5 indicator stations (Nos. 3, 7, 10, 12 and 16) which encircle the site and are on the site periphery, at a nearby community station (No. 35), and at a control station (No. 36) which is about 14 miles from the plant. At these locations air is continuously drawn in sequence through a Gelman Type A/E glass fiber filter and a SAIC CP-200 charcoal canister in sequence to retain airborne particulates and to adsorb airborne radioiodine, respectively.

The filters and canisters are collected weekly. Each of the air particulate filters is counted for gross beta activity. A gamma isotopic analysis is performed quarterly on a composite of the air particulate filters for each station. Each charcoal canister is analyzed for I-131 by gamma spectroscopy.

During the exposure periods associated with the collections made on July 18 & 25 and August 8, several stations were not operating for a short time due to power outages which were nominally caused by severe weather. The hours each affected station was down are as follows.

Affected Station	July 18	July 25	August 8
No. 3	2.0	0.9	2.5
No. 7	3.3	1.0	2.5
No. 10	6.6	4.3	2.5
No. 12	3.3	0.9	2.5
No. 16	2.1		
No. 36	1.0		

The gross beta results for the affected samples were tested for conformance with Chauvenet's criterion. The results for Station 16 on July 18 and for Station 3 on July 25 failed the test; these results were therefore deemed unrepresentative and excluded from the data base.

As seen in Table 3-1, the average weekly beta activity during 1995 for the indicator stations was 0.4 fCi/m^3 greater than that for the control station. However, this difference was not discernible, since it was less than the MDD, calculated as 2.0 fCi/m^3. During the 8 year period from 1987 through 1994, the average weekly activity for the year at the indicator stations randomly varied from 1.0 fCi/m^3 greater than to 0.6 fCi/m^3 less than that for the control station. The average weekly activity for the indicator stations over this entire 8 year period

exceeded that for the control station by less than 0.1 fCi/m^3. The overall average weekly activity for the indicator stations during preoperation was 0.8 fCi/m^3 greater than that for the control station.

The average weekly gross beta activity in units of fCi/m^3 for the indicator, control and community stations during 1995 are compared below with those during the previous years of operation, with the entire preoperation period (which began in September 1981 for the air monitoring stations) and with the range of annual averages during preoperation.

Period	Indicator	Control	Community
1995	21.1	20.7	20.7
1994	20.1	20.3	19.8
1993	21.2	21.4	20.3
1992	18.7	19.3	18.0
1991	19.3	19.2	18.6
1990	19.6	19.4	18.8
1989	19.1	18.2	18.8
1988	24.7	23.7	22.8
1987	23.0	23.5	22.3
Preop Overall	22.9	22.1	21.9
Preop Range	18.1-28.1	18.3-26.5	18.3-26.5

The average weekly readings for 1995 are seen to be within the range of values found previously. No trends were recognized in these data.

During 1995, no man-made radionuclides were detected from the gamma isotopic analysis of the quarterly composites of the air particulate filters. During 1987, Cs-137 was found in one indicator composite at a level of 1.7 fCi/m^3. During preoperation, Cs-137 was found in an eighth of the indicator composites and a seventh of the control composites with average levels of 1.7 and 1.0 fCi/m^3, respectively; the MDC for airborne Cs-137 is 60 fCi/m^3. Also, during preoperations, Cs-134 was found in about 8 percent of the indicator composites; the average level was 1.2 fCi/m^3; its MDC is 50 fCi/m^3

As during previous years of operation, airborne I-131 was not detected in any sample during 1995. During preoperation, positive results were obtained only during the Chernobyl incident when levels as high as 182 fCi/m^3 were obtained. The MDC and RL for airborne I-131 are 70 and 900 fCi/m^3, respectively.

4.2 Direct Radiation

Direct (external) radiation is measured with thermoluminescent dosimeters (TLDs). Two Panasonic UD-814 TLD badges are placed at each station. Each badge contains three phosphors which are composed of calcium sulfate (with thulium impurity) crystals. The gamma dose at each station is nominally based upon the average readings of the phosphors from the two badges. The two badges for each station are sealed in a thin plastic bag for protection from moisture while in the field. The badges are nominally exposed for periods of a quarter of a year (91 days).

Two TLD stations are established in each of the 16 meteorological sectors about the plant forming two concentric rings. The stations comprising the inner ring (Nos. 1 through 16) are located near the site boundary, while those comprising the outer ring (Nos. 17 through 32) are located at distances of about 5 miles. The 16 stations forming the inner ring are designated as the indicator stations. Each of the 4 control stations (Nos. 36, 37, 47 and 48) is over 10 miles from the plant. Special interest areas consist of a hunting cabin (No. 33), the town of Girard (No. 35), and the employees' recreational area (No. 43).

As shown in Table 3-1, the average quarterly exposure acquired at the indicator stations (inner ring) during 1995 was 0.5 mR less than that acquired at the control stations. This difference was not discernible since it was less than the MDD of 1.0 mR. During the 8 year period from 1987 through 1994, the average quarterly exposure for the year at the indicator stations randomly varied from 0.7 mR greater than to 0.5 mR less than that for the control stations. The average quarterly exposure for the indicator stations over this period has been virtually the same as that for the control stations. The overall average quarterly exposure for the indicator stations during preoperation was 1.2 mR less than that for the control stations.

The quarterly exposures acquired at outer ring stations during 1995 ranged from 9.8 to 19.5 mR, with an average of 12.3 mR which was 0.3 mR greater than that found for the inner ring. There was no discernible difference between the averages for the inner and the outer ring, since the difference was less than the MDD of 0.7 mR. For the 8 year period beginning in 1987, the average quarterly exposure for the year at the inner ring stations varied from O.2 to 0.9 mR greater than that at the outer ring stations. The average quarterly exposure for the inner ring stations over this 8 year period was 0.5 mR greater than that for the outer ring stations. The overall average quarterly exposure for the inner ring stations during preoperation was 0.6 mR greater than that for the outer ring stations.

Listed below for the indicator, control and outer ring stations, are the average quarterly exposures in units of mR obtained during each year of operation, the entire period of preoperation (which began in August 1981 for TLD stations), and the range of annual averages obtained during the calendar years of preoperation.

Period	Indicator	Control	Outer Ring
1995	12.0	12.5	12.3
1994	12.3	12.1	11.9
1993	12.4	12.4	12.1
1992	12.3	12.5	12.1
1991	16.9	17.1	16.7
1990	16.9	16.6	16.3
1989	17.9	18.4	17.2
1988	16.8	16.1	16.0
1987	17.6	17.9	16.7
Preop Overall	15.3	16.5	14.7
Preop Range	15.1-16.9	14.1-18.2	12.5-16.2

The average quarterly exposures in units of mR at the special interest areas for the same periods as given above are listed below. These exposures are within the range of those acquired at the other stations.

Period	Station 33	Station 35	Station 43
1995	13.3	13.5	12.3
1994	12.6	13.6	12.0
1993	12.9	13.3	12.1
1992	12.8	13.5	12.0
1991	17.3	19.6	17.0
1990	16.8	18.9	16.2
1989	21.2	18.7	17.4
1988	19.7	18.1	14.8
1987	21.3	18.5	15.2
Preop Overall	16.6	15.1	15.3
Preop Range	13.6-19.9	12.6-17.6	13.9-25.0

Although, there were no failures at any station in obtaining a measurement of the quarterly gamma dose during 1995, the reading for TLD 32A for the third quarter was deemed unacceptable as it had a standard deviation greater than the self imposed limit of 1.4. Consequently, the reading for the companion badge only was used to determine the exposure for the third quarter at this station.

No reason was found for the high standard deviation for TLD 32A for the third quarter. It was visually inspected under a microscope; the glow curve and test results for the anneal data and the element correction factor were reviewed.

The standard deviation limit of 1.4 was calculated using a method[3] developed by the American Society for Testing and Materials (ASTM). The calculation was based upon the standard deviations obtained with the UD-814 badges during 1992. This limit serves as a flag to evoke an investigation. To be conservative, readings with a greater standard deviation are deleted since the high standard deviation is interpreted as an indication of a suspect TLD.

4.3 Milk

In accordance with Tables 2-1 and 2-2, milk samples are collected biweekly from two control stations, the W. C. Dixon Dairy (No. 98) and the Boyceland Dairy (No. 99). Gamma isotopic and I-131 analyses are performed on each sample.

Milk has not been available from an indicator station (a location within 5 miles of the plant) since April 1986 when the cow from which milk was being obtained went dry and was subsequently removed from the area. The availability of milk within 5 miles of the plant was meager throughout preoperation and an adequate location is yet to be obtained during operation. As discussed in Section 4.0, no milk animals were found in the 1995 land use census.

No man-made radionuclides were found from the gamma isotopic analysis of the milk samples during 1995. During preoperation and each year of operation through 1991, Cs-137 was found in 2 to 6 percent of the samples at levels ranging from 5 to 27 pCi/l. The MDC and RL for Cs-137 in milk are 18 and 70 pCi/l, respectively. During preoperation, Cs-134 was detected in one sample and in the first year of operation, Zn-65 was detected in one sample.

I-131 was not detected in any of the milk samples during 1995. In 1990, I-131 was reported in two samples but its presence was questionable due to large counting uncertainties. I-131 was not detected during other years of operation. During preoperation, positive I-131 results were found only during the Chernobyl incident when the levels ranged from 0.53 to 5.07 pCi/l. The MDC and RL for I-131 in milk are 1 and 3 pCi/l, respectively.

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3. ASTM Special Technical Publication 15D, ASTM Manual on Presentation of Data and Control Chart Analysis, Fourth Revision, Philadelphia, PA, October 1976.

4.4 Vegetation

In accordance with Tables 2-1 and 2-2, gamma isotopic analysis is performed on each grass sample collected monthly at two indicator stations which are located onsite near the site boundary in different meteorological sectors (Nos. 7 and 15) and at one control station located about 17 miles from the plant (No. 37).

The results presented in Table 3-1 show that as usual Cs-137 was the only man-made radionuclide detected during 1995. The average value for the two positive results found at the indicator stations was 121.2 pCi/kg wet less than the one positive result found at the control station. It was determined by a modified t-test calculation that this difference was not discernible.

The average level of Cs-137 found in vegetation samples in units of pCi/kg wet along with the fraction of detectable measurements at the indicator and control stations is shown below for each year of operation and the period of preoperation.

	Indicator Stations		Control Station	
Period	Average	Fraction	Average	Fraction
1995	57.8	0.083	179.0	0.083
1994	20.7	0.083	57.4	0.083
1993	46.4	0.333	34.1	0.083
1992	38.1	0.250	144.0	0.083
1991	35.3	0.208	62.4	0.083
1990	30.0	0.083	102.0	0.167
1989	9.7	0.042	0.0	0.000
1988	38.7	0.280	0.0	0.000
1987	24.4	0.318	61.5	0.250
Preop	54.6	0.573	43.7	0.193

The results for 1995 are seen to be a little greater but on the same order as those found previously. No trend was recognized in these data. The MDC and RL for Cs-137 in vegetation samples are 80 and 2000 pCi/kg wet, respectively.

To enhance the statistical base for the indicator stations, samples continued to be collected on a trial basis during the year from two additional grass plots; one is in the E sector at 0.9 miles just north of Plant Wilson, the other is in the SW sector at 1.2 miles adjacent to Gate 1. Positive results ranging from 24.6 to 167 pCi/kg wet were found in 5 of the 12 samples collected at the Plant Wilson location; the average positive result was 63.4 pCi/kg wet. Only one of the 12 samples collected at the Gate 1 location had a positive result which was 63.7 pCi/kg wet.

During operation, Cs-137 has been the only man-made radionuclide detected in vegetation samples. During preoperation as a consequence of the Chernobyl incident, I-131 was found in nearly all the samples collected (some at elevated levels) for a period of several weeks. During the preoperation period, Cs-137 was also found in nearly all the samples collected and Co-60 was found in one of the samples.

4.5 River Water

Surface water is composited from the Savannah River at three locations using ISCO automatic samplers. Small quantities are collected at intervals not exceeding a few hours. River water samples collected by these machines are picked up monthly; quarterly composites are made from the monthly collections.

The collection points consist of a control station (No. 82) which is located about 0.4 miles upriver of the plant intake structure, an indicator station (No. 83) which is located about 0.4 miles downriver of the plant discharge structure, and a special station (No. 84) which is located approximately 1.3 miles downriver of the plant discharge structure. A discernible increase in the radiological levels found in samples collected at the indicator station over those collected at the control station might be attributed to plant radiological releases. Radiological levels monitored at the special station might represent those for the river as a whole (plant releases combined with those from other sources.)

A gamma isotopic analysis is conducted on each monthly collection. As in all previous years of operation, there were no gamma emitter radionuclides of interest detected in the river water samples collected during 1995.

A tritium analysis is performed on each quarterly composite. As indicated in Table 3-1, the average level found at the indicator station was 361 pCi/l greater than that found at the control station. However, this difference was not discernible since it was less than the calculated MDD of 766 pCi/l and on this basis the increase is not attributed to plant releases. At the special station, the results ranged from 364 to 1040 pCi/l. The MDC for tritium in river water is 3000 pCi/l; the RL is 10 times greater.

Listed below for each year of operation are the average tritium levels found at the special, indicator and control stations, along with the increase in the average level at the indicator station over that for the control station, the MDD between these two stations, and the total liquid releases of tritium from the plant. All of these values are in units of pCi/l except for the releases which are in units of Ci.

Year	Special	Indicator	Control	Increase	MDD	Releases
1995	699	597	236	361	766	968
1994	774	1258	257	1001	2009	1052
1993	616	712	238	474	1526	761
1992	929	1064	371	693	714	1481
1991	1298	1299	828	471	626	1094
1990	1081	1142	392	750	766	1172
1989	1268	1293	538	755	518	918
1988	1430	843	427	416	271	390
1987	1411	680	524	156	416	321

The following observations are noted regarding the above data tabulation.

1. The curies of tritium released by the plant (Releases) increase the overall tritium level in the river and these releases could account for the increases in the levels found at the indicator station over those at the control station. However, for all the years except 1988 and 1989, the increases are less than the MDD and are therefore considered non-discernible.

2. There was a discernible difference between the indicator and control stations only during 1988 and 1989.

3. There is not a good correlation between the releases and the increases.

4. The overall tritium levels in the river have generally diminished during the past few years as compared with those during the early years of operation.

5. In 1987 and 1988 , the tritium level at the special station was somewhat greater than that at the indicator station; whereas in recent years the level at the special station has become less than or is about the same as that at the indicator stations. This indicates that the contribution from other tritium sources has diminished while plant releases have become a larger percentage of the total source.

The annual downriver survey of the Savannah River to determine if river water is being used for purposes of drinking or irrigation is discussed in Section 4.0.

4.6 Drinking Water

Samples are collected at a control station (No. 80), the Augusta Water Treatment Plant in Augusta, Georgia, which is located about 56 miles upriver, and at two indicator stations (Nos. 87 and 88), the Beaufort-Jasper County Water Treatment Plant near Beaufort, South Carolina and the Cherokee Hill Water Treatment Plant near Port Wentworth, Georgia, which are respectively located approximately 112 and 122 miles downriver. These upriver and downriver distances in river miles are the distances from the plant to the point on the river where water is diverted to the intake for each of these water treatment plants.

At each of the water treatment plants, monthly collections are made of river water which is composited near the intake of the water treatment plant (raw drinking water) and of grab samples of finished drinking water; quarterly composites are made from the monthly collections. Gross beta and gamma isotopic analyses are conducted on each of the samples collected monthly. Tritium analysis is conducted on the quarterly composites. Although an I-131 analysis is not required to be conducted on these samples as the dose calculated from the consumption of water is less than 1 mrem per year (see ODCM Table 4-1), an I-131 analysis is conducted on each of the grab samples of the monthly collections of finished water since a drinking water pathway exists.

Listed below for each year of operation are the average gross beta levels in units of pCi/l found in the monthly collections for raw and finished drinking water at the indicator and control stations, along with the increases in the average levels for the indicator stations over those for the control station, and the calculated MDD between these two station groups.

RAW

Period	Indicator	Control	Increase	MDD
1995	3.06	4.90	-1.84	1.30
1994	3.51	3.47	0.04	1.24
1993	3.17	2.83	0.34	1.09
1992	2.73	2.70	0.03	0.96
1991	2.83	3.08	-0.25	2.47
1990	2.53	2.55	-0.02	0.72
1989	2.93	3.05	-0.12	0.85
1988	2.67	3.04	-0.37	1.36
1987	2.20	5.50	-3.30	4.40

FINISHED

Period	Indicator	Control	Increase	MDD
1995	2.74	2.32	0.42	0.72
1994	2.40	2.68	-0.28	2.40
1993	2.23	2.30	-0.07	2.23
1992	2.09	1.67	0.42	0.44
1991	1.90	1.53	0.37	0.47
1990	2.08	1.92	0.16	0.58
1989	2.36	2.38	-0.02	0.57
1988	2.28	2.35	-0.07	0.88
1987	2.10	1.80	0.30	0.7

No trend is recognized from these data. In all previous years of operation, there was no discernible difference between the average levels at the indicator and control stations for both the raw and the finished water since the MDD was greater than the difference. In 1995, a discernible difference was found in the average results for raw water between the two station groups. The higher result was found for the control station. No significance is perceived from this finding. The MDC for gross beta in water is 4 pCi/l.

As indicated in Table 3-1, there were no positive results for the radionuclides of interest from the gamma isotopic analysis of the monthly collections. Only one positive result has been found since operation began; Be-7 was found at a level of 68.2 pCi/l in the sample collected for September 1987 at Station 87. The MDC assigned for Be-7 in water is 124 pCi/l.

As indicated in Table 3-1, there were no positive results from the I-131 analysis of the finished drinking water samples. Similar results were obtained in previous years of operation. The MDC and RL for I-131 in drinking water are 1 and 2 pCi/l, respectively.

Listed below for each year of operation are the average tritium levels found in the quarterly composites of raw and finished drinking water in units of pCi/l collected at the indicator and control stations, along with the increases in the average levels at the indicator stations over those at the control station, and the calculated MDDs between these two station groups. The average levels at the indicator stations for 1991 and 1992 have been purged of the impact of the inadvertent release at SRS of 7500 Ci of tritium to the Savannah River about 10 miles downriver of VEGP between December 22 and 25, 1991.

RAW

Period	Indicator	Control	Increase	MDD
1995	917	201	716	NA
1994	871	NDM	NA	NA
1993	955	NDM	NA	NA
1992	1131	179	952	353
1991	1471	165	1306	834
1990	1320	266	1054	572
1989	2508	259	2249	1000
1988	2630	240	2390	580
1987	2229	316	1913	793

FINISHED

Period	Indicator	Control	Increase	MDD
1995	847	279	568	NA
1994	880	131	749	270
1993	993	NDM	NA	NA
1992	1162	211	951	427
1991	1240	225	1015	647
1990	1299	404	895	1131
1989	2236	259	1977	627
1988	2900	270	2630	830
1987	2406	305	2101	1007

The above tabulations show that in recent years, the tritium levels in the drinking water samples, both raw and finished, at the indicator stations have become less than half those found during the first three years of operation.

From Table 3-1, it may be seen that a detectable measurement of tritium was found in only one of the samples collected at the control station during 1995 for both raw and finished drinking water. A modified t-test that compared the single positive result from the control station with the average result from the indicator stations was employed to determine if there was a discernible difference between the two data groups for both the raw and finished drinking water. It was determined that there was no discernible difference in either case. A MDD cannot be determined with the modified t-test calculation; therefore, not applicable (NA) is entered in the MDD columns above for both raw and finished drinking water.

The above data tabulations show that except for the finished drinking water in 1990, there has been a detectable difference between the two station groups for

both raw and finished drinking water during every previous year of operation (whenever detectable measurements were made for both station groups).

4.7 Fish

Table 2-1 calls for the collection of at least one sample of any anadromous species of fish in the vicinity of the plant discharge during the spring spawning season, and for the semiannual collections of at least one sample of any commercially or recreationally important species in the vicinity of the plant discharge area and in an area not influenced by plant discharges. Table 2-1 also calls for a gamma isotopic analysis on the edible portions of each sample collected.

As stated in Table 2-2 a stretch of the river of about 5 miles is generally needed to obtain adequate fish samples. For the semiannual collections, the control station (No. 81) extends from approximately 2 to 7 miles upriver of the plant intake structure and the indicator station (No. 85) extends from about 1.4 to 7 miles downriver of the plant discharge structure. For anadromous species, all collection points can be considered as indicator stations.

On March 22, American shad, an anadromous species, was collected. In 1995 as in all but two previous years of operation, no positive results for the radionuclides of interest were detected from the gamma isotopic analysis. In 1987 as well as in 1991, Cs-137 was found in a single sample of American shad at minuscule levels of 10 and 12 pCi/kg wet, respectively.

The dates and compositions of the semiannual catches at the indicator and control stations during 1995 were as shown below.

Date	Indicator	Control
April 18	Channel Catfish Largemouth Bass	Largemouth Bass Redear Sunfish
November 3	Channel Catfish	Channel Catfish Largemouth Bass

As indicated in Table 3-1, Cs-137 was the only radionuclide of interest found in the semiannual collections. It has been found in all but one of the 77 samples collected during operation. In Table 3-1, the average level at the indicator station is seen to be 29.0 pCi/kg wet greater than that at the control station. This difference is not discernible, however, since it is less than the calculated MDD of 309 pCi/kg wet.

Listed below for each year of operation are the average levels of Cs-137 in units of pCi/kg wet found in fish samples at the indicator and control stations.

Year	Indicator	Control
1995	125	96
1994	165	200
1993	360	84
1992	178	80
1991	105	211
1990	103	249
1989	117	125
1988	66	116
1987	337	119

No trend is recognized in these data. The MDC and RL for Cs-137 in fish are 150 and 2000 pCi/kg wet, respectively.

The only other radionuclide of interest found in fish samples during past years of operation is I-131. In 1990, it was found in one sample at both the indicator and control stations at levels of 13 and 12 pCi/kg wet, respectively; in 1989, it was found in one sample at the indicator station at a level of 18 pCi/kg wet.

4.8 Sediment

Sediment was collected along the shoreline of the Savannah River on April 3 and October 3 at Stations 81 and 83. Station 81 is a control station located about 2.5 miles upriver of the plant intake structure while Station 83 is an indicator station located about 0.6 miles downriver of the plant discharge structure. A gamma isotopic analysis was performed on each sample.

Listed below for each year of operation are the average levels in units of pCi/kg dry for the radionuclides of interest found in the regular samples collected at the indicator and/or control stations along with the fractions of detectable measurements and the MDCs. Each of these radionuclides is found in the plant's liquid releases.

Be-7, MDC=655

Year	Indicator	Fraction	Control	Fraction
1995	1865	1.0	1575	1.0
1994	1203	1.0	964	1.0
1993	711	1.0	902	1.0
1992	2038	1.0	380	1.0
1991	826	1.0	427	1.0
1990	465	1.0	545	1.0
1989	1300	1.0	415	1.0
1988	970	1.0	810	1.0
1987	987	1.0	543	1.0

Mn-54, MDC=42

Year	Indicator	Fraction	Control	Fraction
1994	32	0.5	NDM	0.0
1989	18	0.5	NDM	0.0
1988	22	0.5	NDM	0.0

Co-58, MDC=43

Year	Indicator	Fraction	Control	Fraction
1995	42	0.5	NDM	0.0
1994	18	0.5	NDM	0.0
1992	124	0.5	NDM	0.0
1990	140	0.5	NDM	0.0
1989	135	1.0	NDM	0.0
1988	190	1.0	NDM	0.0

Co-60, MDC=70

Year	Indicator	Fraction	Control	Fraction
1995	267	1.0	NDM	0.0
1994	85	1.0	NDM	0.0
1993	66	1.0	NDM	0.0
1992	60	1.0	NDM	0.0
1991	113	0.5	NDM	0.0
1990	46	0.5	NDM	0.0
1989	46	1.0	NDM	0.0
1988	62	0.5	NDM	0.0

I-131, MDC=53

Year	Indicator	Fraction	Control	Fraction
1994	51	0.5	41	0.5
1992	194	0.5	20	0.5

Cs-137, MDC=180

Year	Indicator	Fraction	Control	Fraction
1995	357	1.0	123	1.0
1994	240	1.0	118	1.0
1993	345	1.0	115	1.0
1992	259	1.0	111	1.0
1991	246	1.0	100	1.0
1990	155	1.0	140	1.0
1989	230	1.0	125	1.0
1988	175	1.0	175	1.0
1987	209	1.0	111	1.0

No trend is recognized in the above data. As in all previous years of operation, positive results for Be-7 and Cs-137 were found in each sample. Although Mn-54 and I-131 were not detected during 1995, higher levels were found for Co-60 and Cs-137.

For Be-7, the average level at the indicator station is seen to be 290 pCi/kg dry greater than that at the control station; however, this difference is not discernible as it is less than the calculated MDD of 2735 pCi/kg dry. For Cs-137, the average level at the indicator station is 234 pCi/kg dry greater than that at the control station; this difference is less than the MDD of 3182 pCi/kg dry and thus is not discernible. There continues to be no discernible difference between the indicator and control stations for both Be-7 and Cs-137 and thus their presence at the indicator station is not attributed to plant releases.

The continuing presence of Co-60 and the sometimes presence of Mn-54 and Co-58 at the indicator station (although at low levels) and their absence at the control station are indicative of plant releases. The radiological impact to the public due to those radionuclides which were detected during 1995 (Co-58 and Co-60) was assessed by employing the methodology and parameters of NRC Regulatory Guide 1.109, Revision 1, October 1977, to estimate the annual whole body dose to an individual by direct radiation from sediment with the concentrations of these radionuclides as found at the indicator station, and comparing this estimated dose with the 3 mrem limit for liquid releases from one unit as stipulated by of ODCM 2.1.3. The dose was estimated to be approximately 6.9 microrem or about 0.23 percent of the limit. This extremely low dose, although calculable, poses no measurable environmental or public health impact.

5.0 INTERLABORATORY COMPARISON PROGRAM

TS 6.7.4.g(3) requires participation in an interlaboratory comparison program to ensure that independent checks are performed on the precision and accuracy of the measurements of radioactive materials in environmental sample matrices. In conformance with ODCM 4.1.3, the EL conducts analyses on radioactive materials supplied by the Performance Evaluation Program managed by the Environmental Protection Agency (EPA) at their Environmental Monitoring Systems Laboratory in Las Vegas, Nevada. In past years, this EPA program was known as the Intercomparison Studies (Crosscheck) Program. Reported herein, as required by ODCM 4.1.3.3 and 7.1.2.3 is a summary of the results of the EL's participation in the EPA program.

The EPA program was designed for laboratories involved with REMPs and includes environmental media and a variety of radionuclides with activities which might be as low as environmental levels. Simulated environmental samples are distributed regularly to the participants who analyze the samples and return the results to the EPA for statistical analysis and comparisons with known values and with results obtained from other participating laboratories. The EPA then provides each participant with documentation of its performance; this can be helpful in identifying any instrument or procedure problems.

The EL analyzes the EPA supplied samples consistent with the requirements of Table 2-1. Analyses are performed in a normal manner. Each sample is analyzed in triplicate as required by the program. Results obtained during 1995 for the gross beta and gamma isotopic analyses of air filters, the gamma isotopic analysis of milk samples, and the gross beta, tritium, I-131 and gamma isotopic analyses of water samples are summarized in Table 5-1.

Delineated in Table 5-1 for each of the environmental media are the type analyses performed, EPA's collection dates, the known values and expected precisions provided by the EPA, the average results obtained and reported by the EL along with the standard deviations of these results, and the normalized deviations and the normalized ranges from the known results. The normalized deviations and normalized ranges were also provided by the EPA.

The normalized deviation from the known value provides a measure of the central tendency of the data (accuracy). The normalized range is a measure of the dispersion of the data (precision). An absolute value of 3 standard deviations for the normalized deviation and for the normalized range was established by the EPA as the control limit. An absolute value of 2 standard deviations was established as the warning limit. The EL considers any value greater than the control limit as unacceptable. Investigations are undertaken whenever any value exceeds the warning limit or whenever a plot of the values indicates a trend.

TABLE 5-1 (SHEET 1 OF 2)

INTERLABORATORY COMPARISON PROGRAM RESULTS

Radionuclide or Analysis	Date Collected	Known Value	Expected Precision	Reported Average	Standard Deviation	Normalized Deviation	Normalized Range
			Air Filters (pCi/filter)				
Gross Beta	08/25/95	86.6	10.0	89.00	3.00	0.42	0.35
Cs-137	08/25/95	25.0	5.0	30.00	3.00	1.73	0.71
			Milk (pCi/l)				
I-131	09/29/95	99.0	10.0	98.33	5.69	-0.12	0.65
Cs-137	09/29/95	50.0	5.0	49.00	1.00	-0.35	0.24
			Water (pCi/l)				
Gross Beta	01/27/95	5.0	5.0	9.00	1.00	1.39	0.24
	07/21/95	19.4	5.0	14.67	1.53	-1.64	0.35
	10/27/95	24.8	5.0	31.33	4.16	2.26	0.95
H-3	03/10/95	7435.0	744.0	7033.33	257.16	-0.94	0.38
	08/04/95	4872.0	487.0	4530.00	121.24	-1.22	0.29

TABLE 5-1 (SHEET 2 OF 2)

INTERLABORATORY COMPARISON PROGRAM RESULTS

Radionuclide or Analysis	Date Collected	Known Value	Expected Precision	Reported Average	Standard Deviation	Normalized Deviation	Normalized Range
Co-60	06/09/95	40.0	5.0	38.67	4.04	-0.46	0.83
	11/03/95	60.0	5.0	58.00	4.00	-0.69	0.95
Zn-65	06/09/95	76.0	8.0	80.33	10.50	0.94	2.05
	11/03/95	125.0	13.0	126.33	6.35	0.16	0.50
I-131	02/03/95	100.0	10.0	95.67	3.06	-0.75	0.35
	10/06/95	148.0	15.0	151.67	5.69	0.42	0.43
Cs-134	06/09/95	50.0	5.0	44.00	2.65	-2.08	0.59
	11/03/95	40.0	5.0	34.00	3.46	-2.08	0.71
Cs-137	06/09/95	35.0	5.0	40.00	6.08	1.73	1.57
	11/03/95	49.0	5.0	51.33	1.53	0.81	0.35
Ba-133	06/09/95	79.0	8.0	72.00	4.36	-1.52	0.59

An investigation was undertaken due to the following conditions which may be noted from Table 5-1:

1. The warning limit for the normalized deviation was exceeded for the gross beta analysis of the water sample collected on October 27;

2. The warning limit for the normalized range was exceeded for Zn-65 in the gamma isotopic analysis of the water sample collected on June 9;

3. The warning limit for the normalized deviation was exceeded for Cs-134 in the gamma isotopic analysis of the water samples collected on June 9 and November 3; and

4. A downward trend was indicated from plots of Cs-134 found from the gamma isotopic analysis of water samples.

The EPA water samples for beta analysis generally produce approximately 20 milligrams of solid material. The efficiency of the sample is determined from a calibration curve which represents the milligrams of solid material from the sample versus the efficiency. The curve used to obtain the efficiency for the EPA sample of October 27 did not give a proper fit for the milligrams of interest. The curve has been reevaluated. Quality Control samples processed after the curve's reevaluation provided acceptable activity recovery.

The EPA samples for gamma isotopic analysis are diluted to produce four separate one liter marinellis. The samples are counted and statistically analyzed. The three samples with the overall best precision are reported to the EPA. The June 9 sample with the Zn-65 was analyzed in this manner. One of the analysis results was determined to be suspect. The remaining three samples were reported to the EPA. The samples in the future will be counted on at least two different detectors to rule out any suspect analysis.

The EPA stated that there were problems with the analysis of Cs-134 and that laboratories using commercial standards for calibration of their gamma counting systems may experience problems with coincidence summing of the primary energy peak for Cs-134. The energy peak is 604 kev. The concentration of the standards used did not produce the adequate summing effects.

The activity for Cs-134 in water is trending low. This indicates a likely problem with the background correction factors. The background correction factors for the gamma counting systems need to be evaluated as the detectors were relocated to a different room in 1994. The background of the room will be evaluated and new correction factors determined.

6.0 CONCLUSIONS

This report confirms the licensee's conformance with TS 6.7.4.g and Chapter 4 of the ODCM during 1995. It shows that all data were carefully examined. A summary and discussion of the results of the laboratory analyses for each type sample collected were presented.

The presence of Co-60 and other man-made radionuclides at low levels in shoreline sediment at a short distance downriver from the discharge structure and their absence at the upriver location suggests plant releases. The consequent dose which was shown to be a small fraction of the ODCM limits, poses no measurable radiological impact to the environment or the public.

IV
VOGTLE ELECTRIC GENERATING PLANT - UNITS 1 AND 2
1995 ANNUAL REPORT - PART 2

ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

VOGTLE ELECTRIC GENERATING PLANT

ANNUAL REPORT

PLANT RADIOACTIVE EFFLUENT RELEASES

VOGTLE ELECTRIC GENERATING PLANT

ANNUAL REPORT

PLANT RADIOACTIVE EFFLUENT RELEASES

TABLE	LIST OF TABLES	PAGE

TABLE	LIST OF TABLES	PAGE

TABLE	LIST OF TABLES	PAGE

1.0 Liquid Effluents

1.1 Regulatory Limits/Technical Specifications

1.1.1 Concentration Limits

The concentration of radioactive material released in liquid effluents to UNRESTRICTED AREAS shall be limited to the concentrations specified in 10 CFR Part 20, Appendix B, Table II, Column 2 for radionuclides other than dissolved or entrained noble gases. For dissolved or entrained noble gases, the concentration shall be limited to 1.0E-4 micro curies/ml total activity.

1.1.2 Dose Limits

The dose or dose commitment to a MEMBER OF THE PUBLIC from radioactive materials in liquid effluents released, from each unit, to UNRESTRICTED AREAS shall be limited:

a. During any calendar quarter to less than or equal to 1.5 mrems to the whole body and to less than or equal to 5 mrems to any organ, and

b. During any calendar year to less than or equal to 3 mrems to the whole body and to less than or equal to 10 mrems to any organ.

1.2 Effluent Concentration Limit (ECL)

ECL values used in determining allowable liquid radwaste release rates and concentrations for principal gamma emitters, I-131, tritium, Sr-89, Sr-90 and Fe-55 are taken from 10 CFR Part 20, Appendix B, Table II, Column 2. A tolerance factor up to 10 is selected to allow flexibility in the establishment of a practical monitor set point which could accommodate effluent releases at concentrations higher than the ECL values stated in 10 CFR 20, Appendix B, Table 2, Column 2.

For dissolved or entrained noble gases in liquid radwaste, the ECL is 1E-04 uCi/ml total activity.

For gross alpha in liquid radwaste, the ECL is 2.0E-09 uCi/ml.

Further, for all the above radionuclides or categories of radioactivity, the overall ECL fraction is determined in accordance with 10 CFR Part 20, Appendix B.

The method utilizing the ECL fraction to determine release rates and liquid radwaste effluent radiation monitor set points is described in Subsection 1.3 of this report.

1.3 Measurements and Approximations of Total Radioactivity

Prior to the release of any tank containing liquid radwaste, and following the required recirculations, samples are collected and analyzed in accordance with the Offsite Dose Calculation Manual (ODCM) Table 2-3. A sample from each tank planned for release is analyzed for principal gamma emitters, I-131, and dissolved and entrained noble gases by gamma spectroscopy. Monthly and quarterly composites are prepared for analysis by extracting aliquots from each sample taken from the tanks which are released. Liquid radwaste sample analyses are performed as follows:

	MEASUREMENT	FREQUENCY	METHOD
1.	Gamma Isotopic	Each Batch	Gamma Spectroscopy with computerized data reduction.
2.	Dissolved or entrained noble gases	Each Batch	Gamma Spectroscopy with computerized data reduction
3.	Tritium	Monthly Composite	Distillation and liquid scintillation counting
4.	Gross Alpha	Monthly Composite	Gas flow proportional counting
5.	Sr-89 & Sr-90	Quarterly Composite	Chemical separation and gas flow proportional or scintillation counting
6.	Fe-55	Quarterly Composite	Chemical separation and liquid scintillation counting

Gamma isotopic measurements are performed in-house in the radiochemistry lab using germanium detectors with a resolution of 1.80 keV or lower. The detectors are shielded by four inches of lead. A liquid radwaste sample is typically counted for 2000-4000 seconds. A peak search of the resulting gamma ray spectrum is performed by the computer system. Energy and net count data for all significant peaks are determined, and a quantitative reduction or MDC calculation is performed. This ensures that the MDC's are met for the nuclides specified in ODCM Chapter 10, i.e., Mn-54, Fe-59, Co-58, Co-60, Zn-65, Mo-99, Cs-134, Cs-137, Ce-141 and Ce-144. The quantitative

calculations, corrections for counting time, decay time, sample volume, sample geometry, detector efficiency, baseline counts, branching ratio and MDC calculations, are made based on the counts at the location in the spectrum where the peak for that radionuclide would be located, if present.

Tritium, Gross Alpha, Sr-89, Sr-90 and Fe-55 are, in some cases, analyzed offsite.

The radionuclide concentrations determined by gamma spectroscopic analysis of a sample taken from a tank planned for release in addition to the most current sample analysis results available for tritium, gross alpha, Sr-89, Sr-90 and Fe-55 are used along with the corresponding ECL values to determine the ECL fraction for the tank planned for release. This ECL fraction is then used, with appropriate safety factors, tolerance factors, along with the minimum assured dilution stream flow to calculate maximum permissible release rates and a liquid effluent monitor setpoint. The monitor setpoint is calculated to assure that the limits of the Offsite Dose Calculation Manual (ODCM) are not exceeded.

A monitor reading in excess of the calculated setpoint results in an automatic termination of the liquid radwaste discharge. Liquid effluent discharge is also automatically terminated if the dilution stream flow rate falls below the minimum assured dilution flow rate used in the setpoint calculations and established as a setpoint on the dilution stream flow monitor.

Radionuclide concentrations, safety factors, dilution stream flow rate, and liquid effluent radiation monitor calibrations are entered into the computer and a pre-release printout is generated. If the release is not permissible, appropriate warnings will be displayed on the computer screen. If the release is permissible, it is approved by Chemistry and sent to the Operations Department for approval and processing. When the release is completed, the necessary data from the release (i.e., release volume, etc.) are transferred from the Operations Department to the Chemistry Department. These data are input to the computer and a post-release printout is generated. The post release printout contains actual release rates, actual release concentrations and quantities, actual dilution flow, and calculated doses to an individual.

1.4 Liquid Effluent Release Data

1.4.1 Tables

Regulatory Guide 1.21 Tables 2A, 2B, and 2-C are found in this report as Tables 1-2A,1-2AA, 1-2B, 1-2BB, 1-2-C, and 1-2-CC. Data is presented on a quarterly basis as required by Regulatory Guide 1.21 for all four quarters.

1.4.2 Total Error Measurement

The total or maximum error associated with the effluent measurement will include the cumulative errors resulting from the total operation of sampling and measurement. Because it may be very difficult to assign error terms for each parameter affecting the final measurement, detailed statistical evaluation of error is not suggested. The objective should be to obtain an overall estimate of the error associated with measurements of radioactive materials released in liquid effluents.

1.4.2.1 Fission and activation total release was calculated from sample analysis results and release point flow rates.

Sampling and statistical error	10%
Counting Equipment Calibration	10%
Tank Volumes and System Flow Rates	20%
TOTAL ERROR	40%

1.4.2.2 Total Tritium release was calculated from sample analysis results and release point volumes.

Sampling and statistical errors	10%
Counting equipment calibration	10%
Tank volumes and system flow rate	20%
TOTAL ERROR	40%

1.4.2.3 Dissolved and entrained gases were calculated from sample analysis results and release point volumes.

Sampling and statistical error	20%
Counting equipment calibration	10%
Tank volumes and system flow rate	20%
TOTAL ERROR	50%

1.4.2.4 Gross alpha radioactivity was calculated from sample analysis results and release point volumes.

Sampling and statistical error	10%
Counting Equipment calibration	10%
Tank volumes and system flowrates	20%
Compositing sample error	5%
TOTAL ERROR	45%

1.4.2.5 Volume of waste prior to dilution was calculated from level indicators on the tanks and pump discharge flow rates and times.

Level Indicator error	10%
Operator Interpretation of gauge	10%
TOTAL ERROR	20%

1.4.2.6 Volume of dilution water used was calculated from flow rate indicators and pump discharge flow rates and times.

Flow rate indicator error	10%
Operator interpretation of gauge	10%
TOTAL ERROR	20%

1.5 Radiological Impact on Man Due to Liquid Releases

Doses to an individual due to radioactivity in liquid effluent were calculated in accordance with the Offsite Dose Calculation Manual. Results are presented in Table 1-4A,1-4AA for Unit 1 and 1-4B, 1-4BB for Unit 2, for all four quarters.

1.6 Abnormal Releases

1.6.1 There were no abnormal releases for this reporting period.

1.7 River Flow

The average flow rate of the Savannah River for the Annual Effluent Report period was obtained from the Clark Hill Dam, Corp of Engineers Office. The average flow rate is 9841 cubic feet/sec.

TABLE 1-2 A

GEORGIA POWER COMPANY
VOGTLE ELECTRIC GENERATING PLANT
ANNUAL EFFLUENT RELEASE REPORT - 1995
ALL LIQUID EFFLUENTS
UNIT : 1
STARTING : 1-JAN-1995 ENDING ; 30-JUN-1995

TYPE OF EFFLUENT	UNITS	QUARTER1	QUARTER 2	EST.TOTAL ERROR %
A. FISSION & ACTIVATION PRODUCTS				
1. TOTAL RELEASE (NOT INCLUDING TRITIUM,GASES,ALPHA)	CURIES	1.19E-01	2.86E-02	40
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ML	5.18E-07	1.93E-07	
3. PERCENTAGE OF APPLICABLE LIMIT	%	*	*	
B. TRITIUM				
1. TOTAL RELEASE	CURIES	1.36E+02	5.59E+01	40
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ML	5.92E-04	3.77E-04	
3. PERCENTAGE OF APPLICABLE LIMIT	%	*	*	
C.DISSOLVED AND ENTRAINED GASES				
1. TOTAL RELEASE	CURIES	7.09E-04	0.00E+00	50
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ML	3.09E-09	0.00E+00	
3. PERCENTAGE OF APPLICABLE LIMIT	%	*	*	
D.GROSS ALPHA RADIOACTIVITY				
1. TOTAL RELEASE	CURIES	0.00E+00	0.00E+00	45
E.WASTE VOL RELEASED(PRE-DILUTION)	LITRE	6.90E+05	4.20E+05	20
F.VOLUME OF DILUTION WATER USED	LITRE	2.29E+08	1.48E+08	20

* Applicable limits are expressed in terms of Dose. See Table 1-4A of this report

TABLE1-2AA

GEORGIA POWER COMPANY
VOGTLE ELECTRIC GENERATING PLANT
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT-1995
ALL LIQUID EFFLUENTS
UNIT : 1
STARTING : 1-JUL-1995 ENDING : 31-DEC-1995

TYPE OF EFFLUENT	UNITS	QUARTER3	QUARTER 4	EST.TOTAL ERROR %
A. FISSION & ACTIVATION PRODUCTS				
1. TOTAL RELEASE (NOT INCLUDING TRITIUM,GASES,ALPHA)	CURIES	5.66E-02	4.36E-02	40
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ML	2.62E-07	2.75E-07	
3. PERCENTAGE OF APPLICABLE LIMIT	%	*	*	
B. TRITIUM				
1. TOTAL RELEASE	CURIES	1.68E+02	1.94E+02	40
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ML	7.78E-04	1.22E-03	
3. PERCENTAGE OF APPLICABLE LIMIT	%	*	*	
C.DISSOLVED AND ENTRAINED GASES				
1. TOTAL RELEASE	CURIES	7.56E-05	1.94E-03	50
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ML	3.50E-10	1.22E-08	
3. PERCENTAGE OF APPLICABLE LIMIT	%	*	*	
D.GROSS ALPHA RADIOACTIVITY				
1. TOTAL RELEASE	CURIES	2.78E-03	2.41E-06	45
E.WASTE VOL RELEASED(PRE-DILUTION)	LITRE	1.04E+06	4.61E+05	20
F.VOLUME OF DILUTION WATER USED	LITRE	2.15E+08	1.58E+08	20

* Applicable limits are expressed in terms of Dose. See Table 1-4AA of this report

TABLE1-2B

GEORGIA POWER COMPANY
VOGTLE ELECTRIC GENERATING PLANT
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT-1995
ALL LIQUID EFFLUENTS
UNIT : 2
STARTING : 1-JAN-1995 ENDING : 30-JUN-1995

TYPE OF EFFLUENT	UNITS	QUARTER1	QUARTER 2	EST.TOTAL ERROR %
A. FISSION & ACTIVATION PRODUCTS				
1. TOTAL RELEASE (NOT INCLUDING TRITIUM,GASES,ALPHA)	CURIES	7.56E-02	1.68E-02	40
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ML	2.66E-07	1.72E-07	
3. PERCENTAGE OF APPLICABLE LIMIT	%	*	*	
B. TRITIUM				
1. TOTAL RELEASE	CURIES	1.62E+02	3.55E+01	40
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ML	5.71E-04	3.64E-04	
3. PERCENTAGE OF APPLICABLE LIMIT	%	*	*	
C.DISSOLVED AND ENTRAINED GASES				
1. TOTAL RELEASE	CURIES	1.49E-03	6.56E-04	50
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ML	5.25E-09	6.72E-09	
3. PERCENTAGE OF APPLICABLE LIMIT	%	*	*	
D.GROSS ALPHA RADIOACTIVITY				
1. TOTAL RELEASE	CURIES	0.00E+00	0.00E+00	45
E.WASTE VOL RELEASED(PRE-DILUTION)	LITRE	8.11E+05	2.78E+05	20
F.VOLUME OF DILUTION WATER USED	LITRE	2.83E+08	9.73E+07	20

* Applicable limits are expressed in terms of Dose. SeeTable 1-4B of this report

TABLE1-2BB

GEORGIA POWER COMPANY
VOGTLE ELECTRIC GENERATING PLANT
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT-1995
ALL LIQUID EFFLUENTS
UNIT : 2
STARTING : 1-JUL-1995 ENDING : 31-DEC-1995

TYPE OF EFFLUENT	UNITS	QUARTER3	QUARTER 4	EST.TOTAL ERROR %
A. FISSION & ACTIVATION PRODUCTS				
1. TOTAL RELEASE (NOT INCLUDING TRITIUM,GASES,ALPHA)	CURIES	3.30E-02	2.35E-02	40
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ML	2.94E-07	4.51E-07	
3. PERCENTAGE OF APPLICABLE LIMIT	%	*	*	
B. TRITIUM				
1. TOTAL RELEASE	CURIES	1.16E+02	1.01E+02	40
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ML	1.03E-03	1.94E-03	
3. PERCENTAGE OF APPLICABLE LIMIT	%	*	*	
C.DISSOLVED AND ENTRAINED GASES				
1. TOTAL RELEASE	CURIES	1.86E-05	0.00E+00	50
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ML	1.66E-10	0.00E+00	
3. PERCENTAGE OF APPLICABLE LIMIT	%	*	*	
D.GROSS ALPHA RADIOACTIVITY				
1. TOTAL RELEASE	CURIES	0.00E+00	0.00E+00	45
E.WASTE VOL RELEASED(PRE-DILUTION)	LITRE	3.50E+05	1.88E+05	20
F.VOLUME OF DILUTION WATER USED	LITRE	1.12E+08	5.19E+07	20

* Applicable limits are expressed in terms of Dose. See Table 1-4BB of this report

TABLE1-2C

GEORGIA POWER COMPANY
VOGTLE ELECTRIC GENERATING PLANT
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT-1995
ALL LIQUID EFFLUENTS
SITE
STARTING : 1-JAN-1995 ENDING : 30-JUN-1995

TYPE OF EFFLUENT	UNITS	QUARTER1	QUARTER 2	EST.TOTAL ERROR %
A. FISSION & ACTIVATION PRODUCTS				
1. TOTAL RELEASE (NOT INCLUDING TRITIUM,GASES,ALPHA)	CURIES	1.95E-01	4.54E-02	40
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ML	3.79E-07	1.85E-07	
3. PERCENTAGE OF APPLICABLE LIMIT	%	*	*	
B. TRITIUM				
1. TOTAL RELEASE	CURIES	2.98E+02	9.14E+01	40
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ML	5.80E-04	3.72E-04	
3. PERCENTAGE OF APPLICABLE LIMIT	%	*	*	
C.DISSOLVED AND ENTRAINED GASES				
1. TOTAL RELEASE	CURIES	2.20E-03	6.56E-04	50
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ML	4.28E-09	2.67E-09	
3. PERCENTAGE OF APPLICABLE LIMIT	%	*	*	
D.GROSS ALPHA RADIOACTIVITY				
1. TOTAL RELEASE	CURIES	0.00E+00	0.00E+00	45
E.WASTE VOL RELEASED(PRE-DILUTION)	LITRE	1.50E+06	6.98E+05	20
F.VOLUME OF DILUTION WATER USED	LITRE	5.12E+08	2.45E+08	20

* Applicable limits are expressed in terms of Dose. See Table 1-4A and 1-4B of this report

TABLE1-2CC

GEORGIA POWER COMPANY
VOGTLE ELECTRIC GENERATING PLANT
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT-1995
ALL LIQUID EFFLUENTS
SITE
STARTING : 1-JUL-1995 ENDING : 31-DEC-1995

TYPE OF EFFLUENT	UNITS	QUARTER3	QUARTER 4	EST.TOTAL ERROR %
A. FISSION & ACTIVATION PRODUCTS				
1. TOTAL RELEASE (NOT INCLUDING TRITIUM,GASES,ALPHA)	CURIES	8.96E-02	6.71E-02	40
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ML	2.73E-07	3.19E-07	
3. PERCENTAGE OF APPLICABLE LIMIT	%	*	*	
B. TRITIUM				
1. TOTAL RELEASE	CURIES	2.84E+02	2.95E+02	40
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ML	8.65E-04	1.40E-03	
3. PERCENTAGE OF APPLICABLE LIMIT	%	*	*	
C.DISSOLVED AND ENTRAINED GASES				
1. TOTAL RELEASE	CURIES	9.42E-05	1.94E-03	50
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ML	2.87E-10	9.21E-09	
3. PERCENTAGE OF APPLICABLE LIMIT	%	*	*	
D.GROSS ALPHA RADIOACTIVITY				
1. TOTAL RELEASE	CURIES	2.78E-03	2.41E-06	45
E.WASTE VOL RELEASED(PRE-DILUTION)	LITRE	1.39E+06	6.49E+05	20
F.VOLUME OF DILUTION WATER USED	LITRE	3.27E+08	2.10E+08	20

* Applicable limits are expressed in terms of Dose. See Table 1-4AA and 1-4BB of this report

TABLE 1-3A
Vogtle Electric Generating Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT-1995
Liquid Effluents
Starting : 1-Jan-1995 Ending : 30-Jun-1995
UNIT : 1

		CONTINUOUS		BATCH	
NUCLIDE	UNIT	QUARTER1	QUARTER2	QUARTER1	QUARTER2
H-3	CURIES	0.00E+00	0.00E+00	1.36E+02	5.59E+01
FISSION & ACTIVATION PRODUCTS:					
Be-7	CURIES	0.00E+00	0.00E+00	0.00E+00	2.30E-04
Ce-141	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Co-57	CURIES	0.00E+00	0.00E+00	1.20E-04	0.00E+00
Co-58	CURIES	0.00E+00	0.00E+00	5.93E-03	1.82E-03
Co-60	CURIES	0.00E+00	0.00E+00	3.22E-02	2.44E-03
Cr-51	CURIES	0.00E+00	0.00E+00	2.82E-03	6.09E-04
Cs-134	CURIES	0.00E+00	0.00E+00	9.96E-06	6.22E-05
Cs-137	CURIES	0.00E+00	0.00E+00	3.86E-05	6.20E-05
Fe-55	CURIES	0.00E+00	0.00E+00	6.26E-02	8.19E-03
Fe-59	CURIES	0.00E+00	0.00E+00	1.09E-04	0.00E+00
I-131	CURIES	0.00E+00	0.00E+00	8.65E-04	0.00E+00
I-132	CURIES	0.00E+00	0.00E+00	8.92E-05	0.00E+00
Mn-54	CURIES	0.00E+00	0.00E+00	3.42E-03	4.90E-04
Nb-95	CURIES	0.00E+00	0.00E+00	1.09E-03	1.44E-04
Sb-122	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Sb-124	CURIES	0.00E+00	0.00E+00	3.10E-04	1.67E-04
Sb-125	CURIES	0.00E+00	0.00E+00	7.58E-03	6.90E-03
Sn-113	CURIES	0.00E+00	0.00E+00	4.19E-05	0.00E+00
Sr-89	CURIES	0.00E+00	0.00E+00	5.07E-04	6.93E-06
Sr-90	CURIES	0.00E+00	0.00E+00	1.83E-05	0.00E+00
Te-125M	CURIES	0.00E+00	0.00E+00	0.00E+00	7.46E-03
Te-129M	CURIES	0.00E+00	0.00E+00	6.98E-04	0.00E+00
Te-132	CURIES	0.00E+00	0.00E+00	8.44E-05	0.00E+00
Zn-65	CURIES	0.00E+00	0.00E+00	1.57E-04	0.00E+00
Zr-95	CURIES	0.00E+00	0.00E+00	4.60E-04	5.02E-05
TOTALS		0.00E+00	0.00E+00	1.19E-01	2.86E-02
DISSOLVED AND ENTRAINED GASES:					
Xe-133	CURIES	0.00E+00	0.00E+00	6.41E-04	0.00E+00
Xe-135	CURIES	0.00E+00	0.00E+00	6.84E-05	0.00E+00
TOTALS		0.00E+00	0.00E+00	7.09E-04	0.00E+00
G-ALPHA	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TABLE 1-3AA
Vogtle Electric Generating Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT-1995
Liquid Effluents
Starting : 1-Jul-1995 Ending : 31-Dec-1995
UNIT : 1

		CONTINUOUS		BATCH	
NUCLIDE	UNIT	QUARTER3	QUARTER4	QUARTER3	QUARTER4
H-3	CURIES	0.00E+00	0.00E+00	1.68E+02	1.94E+02
FISSION & ACTIVATION PRODUCTS:					
Ce-143	CURIES	0.00E+00	0.00E+00	9.85E-06	0.00E+00
Co-57	CURIES	0.00E+00	0.00E+00	4.75E-05	1.41E-05
Co-58	CURIES	0.00E+00	0.00E+00	3.59E-03	1.37E-03
Co-60	CURIES	0.00E+00	0.00E+00	1.13E-02	3.91E-03
Cr-51	CURIES	0.00E+00	0.00E+00	3.46E-04	1.16E-03
Cs-134	CURIES	0.00E+00	0.00E+00	6.46E-04	1.20E-04
Cs-137	CURIES	0.00E+00	0.00E+00	6.63E-04	1.71E-04
Fe-55	CURIES	0.00E+00	0.00E+00	2.21E-02	1.31E-02
Fe-59	CURIES	0.00E+00	0.00E+00	0.00E+00	8.01E-05
I-131	CURIES	0.00E+00	0.00E+00	6.92E-06	0.00E+00
Mn-54	CURIES	0.00E+00	0.00E+00	2.12E-03	8.50E-04
Nb-95	CURIES	0.00E+00	0.00E+00	3.92E-04	2.07E-04
Nb-97	CURIES	0.00E+00	0.00E+00	5.72E-05	0.00E+00
Rh-105	CURIES	0.00E+00	0.00E+00	0.00E+00	1.45E-05
Ru-103	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Sb-122	CURIES	0.00E+00	0.00E+00	3.52E-05	0.00E+00
Sb-124	CURIES	0.00E+00	0.00E+00	1.74E-04	1.29E-04
Sb-125	CURIES	0.00E+00	0.00E+00	1.49E-02	2.23E-02
Sn-113	CURIES	0.00E+00	0.00E+00	1.62E-05	2.76E-05
Sr-89	CURIES	0.00E+00	0.00E+00	9.78E-06	7.61E-05
Sr-90	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Te-132	CURIES	0.00E+00	0.00E+00	0.00E+00	8.15E-06
Zn-65	CURIES	0.00E+00	0.00E+00	1.80E-05	0.00E+00
Zr-95	CURIES	0.00E+00	0.00E+00	2.20E-04	6.82E-05
TOTALS		0.00E+00	0.00E+00	5.66E-02	4.36E-02
DISSOLVED AND ENTRAINED GASES:					
Kr-87	CURIES	0.00E+00	0.00E+00	3.33E-05	0.00E+00
Xe-133	CURIES	0.00E+00	0.00E+00	4.23E-05	1.94E-03
TOTALS		0.00E+00	0.00E+00	7.56E-05	1.94E-03
G-ALPHA	CURIES	0.00E+00	0.00E+00	2.78E-03	2.41E-06

TABLE 1-3B
Vogtle Electric Generating Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT-1995
Liquid Effluents
Starting : 1-Jan-1995 Ending : 30-Jun-1995
UNIT : 2

		CONTINUOUS		BATCH	
NUCLIDE	UNIT	QUARTER1	QUARTER 2	QUARTER1	QUARTER 2
H-3	CURIES	0.00E+00	0.00E+00	1.62E+02	3.55E+01
FISSION & ACTIVATION PRODUCTS:					
Be-7	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Ce-141	CURIES	0.00E+00	0.00E+00	0.00E+00	7.46E-06
Co-57	CURIES	0.00E+00	0.00E+00	1.24E-04	0.00E+00
Co-58	CURIES	0.00E+00	0.00E+00	5.26E-03	1.10E-03
Co-60	CURIES	0.00E+00	0.00E+00	1.76E-02	1.41E-03
Cr-51	CURIES	0.00E+00	0.00E+00	2.12E-03	6.53E-04
Cs-134	CURIES	0.00E+00	0.00E+00	9.62E-06	0.00E+00
Cs-137	CURIES	0.00E+00	0.00E+00	2.51E-05	0.00E+00
Fe-55	CURIES	0.00E+00	0.00E+00	2.30E-02	4.39E-03
Fe-59	CURIES	0.00E+00	0.00E+00	3.13E-05	0.00E+00
I-131	CURIES	0.00E+00	0.00E+00	1.79E-03	6.84E-05
I-132	CURIES	0.00E+00	0.00E+00	3.41E-04	0.00E+00
Mn-54	CURIES	0.00E+00	0.00E+00	2.20E-03	2.10E-04
Nb-95	CURIES	0.00E+00	0.00E+00	3.61E-04	1.04E-04
Sb-122	CURIES	0.00E+00	0.00E+00	1.30E-05	0.00E+00
Sb-124	CURIES	0.00E+00	0.00E+00	1.07E-03	8.18E-05
Sb-125	CURIES	0.00E+00	0.00E+00	1.86E-02	2.98E-03
Sn-113	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Sr-89	CURIES	0.00E+00	0.00E+00	1.86E-04	0.00E+00
Sr-90	CURIES	0.00E+00	0.00E+00	1.42E-05	0.00E+00
Te-125M	CURIES	0.00E+00	0.00E+00	0.00E+00	5.77E-03
Te-129m	CURIES	0.00E+00	0.00E+00	2.01E-03	0.00E+00
Te-132	CURIES	0.00E+00	0.00E+00	4.32E-04	0.00E+00
Zn-65	CURIES	0.00E+00	0.00E+00	1.98E-04	0.00E+00
Zr-95	CURIES	0.00E+00	0.00E+00	1.84E-04	6.25E-05
TOTALS		0.00E+00	0.00E+00	7.56E-02	1.68E-02
DISSOLVED AND ENTRAINED GASES:					
Xe-133	CURIES	0.00E+00	0.00E+00	1.49E-03	6.47E-04
Xe-135	CURIES	0.00E+00	0.00E+00	0.00E+00	9.43E-06
TOTALS		0.00E+00	0.00E+00	1.49E-03	6.56E-04
G-ALPHA	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TABLE 1-3BB

Vogtle Electric Generating Plant

ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT-1995

Liquid Effluents

Starting : 1-Jul-1995 Ending : 31-Dec-1995

UNIT : 2

		CONTINUOUS		BATCH	
NUCLIDE	UNIT	QUARTER3	QUARTER 4	QUARTER3	QUARTER 4
H-3	CURIES	0.00E+00	0.00E+00	1.16E+02	1.01E+02
FISSION & ACTIVATION PRODUCTS:					
Ce-143	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Co-57	CURIES	0.00E+00	0.00E+00	1.65E-05	5.09E-05
Co-58	CURIES	0.00E+00	0.00E+00	2.33E-03	2.06E-03
Co-60	CURIES	0.00E+00	0.00E+00	4.18E-03	5.58E-03
Cr-51	CURIES	0.00E+00	0.00E+00	4.31E-04	0.00E+00
Cs-134	CURIES	0.00E+00	0.00E+00	8.61E-04	7.75E-05
Cs-137	CURIES	0.00E+00	0.00E+00	8.08E-04	6.66E-05
Fe-55	CURIES	0.00E+00	0.00E+00	1.10E-02	1.10E-02
Fe-59	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
I-131	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Mn-54	CURIES	0.00E+00	0.00E+00	7.69E-04	1.48E-03
Nb-95	CURIES	0.00E+00	0.00E+00	2.52E-04	2.45E-04
Nb-97	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Rh-105	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Ru-103	CURIES	0.00E+00	0.00E+00	1.40E-05	0.00E+00
Sb-122	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Sb-124	CURIES	0.00E+00	0.00E+00	9.51E-05	9.56E-06
Sb-125	CURIES	0.00E+00	0.00E+00	1.22E-02	2.67E-03
Sn-113	CURIES	0.00E+00	0.00E+00	0.00E+00	1.83E-05
Sr-89	CURIES	0.00E+00	0.00E+00	1.68E-05	2.00E-05
Sr-90	CURIES	0.00E+00	0.00E+00	0.00E+00	2.07E-06
Te-132	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Zn-65	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Zr-95	CURIES	0.00E+00	0.00E+00	3.94E-05	1.72E-04
TOTALS		0.00E+00	0.00E+00	3.30E-02	2.35E-02
DISSOLVED AND ENTRAINED GASES:					
Kr-87	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xe-133	CURIES	0.00E+00	0.00E+00	1.86E-05	0.00E+00
TOTALS		0.00E+00	0.00E+00	1.86E-05	0.00E+00
G-ALPHA	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TABLE 1-3C
Vogtle Electric Generating Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT-1995
Liquid Effluents
Starting : 1-Jan-1995 Ending : 30-Jun-1995
SITE

		CONTINUOUS		BATCH	
NUCLID	UNIT	QUARTER 1	QUARTER 2	QUARTER 1	QUARTER 2
H-3	CURIES	0.00E+00	0.00E+00	2.98E+02	9.14E+01
FISSION & ACTIVATION PRODUCTS:					
Be-7	CURIES	0.00E+00	0.00E+00	0.00E+00	2.30E-04
Ce-141	CURIES	0.00E+00	0.00E+00	0.00E+00	7.46E-06
Co-57	CURIES	0.00E+00	0.00E+00	2.44E-04	0.00E+00
Co-58	CURIES	0.00E+00	0.00E+00	1.12E-02	2.92E-03
Co-60	CURIES	0.00E+00	0.00E+00	4.98E-02	3.85E-03
Cr-51	CURIES	0.00E+00	0.00E+00	4.94E-03	1.26E-03
Cs-134	CURIES	0.00E+00	0.00E+00	1.96E-05	6.22E-05
Cs-137	CURIES	0.00E+00	0.00E+00	6.37E-05	6.20E-05
Fe-55	CURIES	0.00E+00	0.00E+00	8.56E-02	1.26E-02
Fe-59	CURIES	0.00E+00	0.00E+00	1.40E-04	0.00E+00
I-131	CURIES	0.00E+00	0.00E+00	2.66E-03	6.84E-05
I-132	CURIES	0.00E+00	0.00E+00	4.30E-04	0.00E+00
Mn-54	CURIES	0.00E+00	0.00E+00	5.62E-03	7.00E-04
Nb-95	CURIES	0.00E+00	0.00E+00	1.45E-03	2.48E-04
Sb-122	CURIES	0.00E+00	0.00E+00	1.30E-05	0.00E+00
Sb-124	CURIES	0.00E+00	0.00E+00	1.38E-03	2.49E-04
Sb-125	CURIES	0.00E+00	0.00E+00	2.62E-02	9.88E-03
Sn-113	CURIES	0.00E+00	0.00E+00	4.19E-05	0.00E+00
Sr-89	CURIES	0.00E+00	0.00E+00	6.93E-04	6.93E-06
Sr-90	CURIES	0.00E+00	0.00E+00	3.25E-05	0.00E+00
Te-132	CURIES	0.00E+00	0.00E+00	0.00E+00	1.32E-02
Te-132	CURIES	0.00E+00	0.00E+00	2.71E-03	0.00E+00
Te-132	CURIES	0.00E+00	0.00E+00	5.16E-04	0.00E+00
Zn-65	CURIES	0.00E+00	0.00E+00	3.55E-04	0.00E+00
Zr-95	CURIES	0.00E+00	0.00E+00	6.44E-04	1 13E-04
TOTALS		0.00E+00	0.00E+00	1.95E-01	4.55E-02
DISSOLVED AND ENTRAINED GASES:					
Xe-133	CURIES	0.00E+00	0.00E+00	2.13E-03	6.47E-04
Xe-135	CURIES	0.00E+00	0.00E+00	6.84E-05	9.43E-06
TOTALS		0.00E+00	0.00E+00	2.20E-03	6.56E-04
G-ALPHA	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TABLE 1-3CC
Vogtle Electric Generating Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT-1995
Liquid Effluents
Starting : 1-Jul-1995 Ending : 31-Dec-1995
SITE

		CONTINUOUS		BATCH	
NUCLID	UNIT	QUARTER 3	QUARTER 4	QUARTER 3	QUARTER 4
H-3	CURIES	0.00E+00	0.00E+00	2.84E+02	2.95E+02
FISSION & ACTIVATION PRODUCTS:					
Ce-143	CURIES	0.00E+00	0.00E+00	9.85E-06	0.00E+00
Co-57	CURIES	0.00E+00	0.00E+00	6.40E-05	6.50E-05
Co-58	CURIES	0.00E+00	0.00E+00	5.92E-03	3.43E-03
Co-60	CURIES	0.00E+00	0.00E+00	1.55E-02	9.49E-03
Cr-51	CURIES	0.00E+00	0.00E+00	7.77E-04	1.16E-03
Cs-134	CURIES	0.00E+00	0.00E+00	1.51E-03	1.98E-04
Cs-137	CURIES	0.00E+00	0.00E+00	1.47E-03	2.38E-04
Fe-55	CURIES	0.00E+00	0.00E+00	3.31E-02	2.41E-02
Fe-59	CURIES	0.00E+00	0.00E+00	0.00E+00	8.01E-05
I-131	CURIES	0.00E+00	0.00E+00	6.92E-06	0.00E+00
Mn-54	CURIES	0.00E+00	0.00E+00	2.89E-03	2.33E-03
Nb-95	CURIES	0.00E+00	0.00E+00	6.44E-04	4.52E-04
Nb-97	CURIES	0.00E+00	0.00E+00	5.72E-05	0.00E+00
Rh-105	CURIES	0.00E+00	0.00E+00	0.00E+00	1.45E-05
Ru-103	CURIES	0.00E+00	0.00E+00	1.40E-05	0.00E+00
Sb-122	CURIES	0.00E+00	0.00E+00	3.52E-05	0.00E+00
Sb-124	CURIES	0.00E+00	0.00E+00	2.69E-04	1.39E-04
Sb-125	CURIES	0.00E+00	0.00E+00	2.71E-02	2.50E-02
Sn-113	CURIES	0.00E+00	0.00E+00	1.62E-05	4.59E-05
Sr-89	CURIES	0.00E+00	0.00E+00	2.66E-05	9.61E-05
Sr-90	CURIES	0.00E+00	0.00E+00	0.00E+00	2.07E-06
Te-132	CURIES	0.00E+00	0.00E+00	0.00E+00	8.15E-06
Zn-65	CURIES	0.00E+00	0.00E+00	1.80E-05	0.00E+00
Zr-95	CURIES	0.00E+00	0.00E+00	2.59E-04	2.40E-04
TOTALS		0.00E+00	0.00E+00	8.97E-02	6.71E-02
DISSOLVED AND ENTRAINED GASES:					
Kr-87	CURIES	0.00E+00	0.00E+00	3.33E-05	0.00E+00
Xe-133	CURIES	0.00E+00	0.00E+00	6.09E-05	1.94E-03
TOTALS		0.00E+00	0.00E+00	9.42E-05	1.94E-03
G-ALPH	CURIES	0.00E+00	0.00E+00	2.78E-03	2.41E-06

TABLE 1-4A
VOGTLE ELECTRIC GENERATING PLANT
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
INDIVIDUAL DOSES DUE TO LIQUID RELEASES
JANUARY, 1995 THROUGH JUNE, 1995

UNIT 1

CUMULATIVE DOSE PER QUARTER

ORGAN	ODCM LIMIT	UNITS	QUARTER 1	% OF ODCM LIMIT	QUARTER 2	% OF ODCM LIMIT
Bone	*5.0*	mrem	1.29E-03	2.58E-02	1.20E-03	2.40E-02
Liver	*5.0*	mrem	3.91E-03	7.83E-02	2.29E-03	4.57E-02
T. Body	*1.5*	mrem	3.48E-03	2.32E-01	1.89E-03	1.26E-01
Thyroid	*5.0*	mrem	3.36E-03	6.71E-02	9.60E-04	1.92E-02
Kidney	*5.0*	mrem	3.27E-03	6.54E-02	2.49E-03	4.98E-02
Lung	*5.0*	mrem	1.08E-02	2.16E-01	1.75E-02	3.51E-01
GI-LLI	*5.0*	mrem	6.96E-03	1.39E-01	4.20E-03	8.40E-02

CUMULATIVE DOSE PER YEAR

ORGAN	*ODCM LIMIT*	*UNITS*	*YEAR TO DATE*	*% OF ODCM LIMIT*
Bone	*10.0*	mrem	2.49E-03	2.49E-02
Liver	*10.0*	mrem	6.20E-03	6.20E-02
T. Body	*3.0*	mrem	5.37E-03	1.79E-01
Thyroid	*10.0*	mrem	4.32E-03	4.32E-02
Kidney	*10.0*	mrem	5.76E-03	5.76E-02
Lung	*10.0*	mrem	2.83E-02	2.83E-01
GI-LLI	*10.0*	mrem	1.12E-02	1.12E-01

TABLE 1-4AA
VOGTLE ELECTRIC GENERATING PLANT
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
INDIVIDUAL DOSES DUE TO LIQUID RELEASES
July, 1995 THROUGH December, 1995

UNIT 1

CUMULATIVE DOSE PER QUARTER

ORGAN	ODCM LIMIT	UNITS	QUARTER 3	% OF ODCM LIMIT	QUARTER 4	% OF ODCM LIMIT
Bone	*5.0*	mrem	1.29E-02	2.59E-01	3.08E-03	6.17E-02
Liver	*5.0*	mrem	2.79E-02	5.58E-01	9.36E-03	1.87E-01
T. Body	*1.5*	mrem	2.21E-02	1.48E+00	8.25E-03	5.50E-01
Thyroid	*5.0*	mrem	5.31E-03	1.06E-01	5.07E-03	1.01E-01
Kidney	*5.0*	mrem	1.27E-02	2.53E-01	6.43E-03	1.29E-01
Lung	*5.0*	mrem	4.78E-02	9.56E-01	5.88E-02	1.18E+00
GI-LLI	*5.0*	mrem	1.21E-02	2.41E-01	1.06E-02	2.13E-01

CUMULATIVE DOSE PER YEAR

ORGAN	*ODCM LIMIT*	*UNITS*	*YEAR TO DATE*	*% OF ODCM LIMIT*
Bone	*10.0*	mrem	1.85E-02	1.85E-01
Liver	*10.0*	mrem	4.35E-02	4.35E-01
T. Body	*3.0*	mrem	3.58E-02	1.19E+00
Thyroid	*10.0*	mrem	1.47E-02	1.47E-01
Kidney	*10.0*	mrem	2.48E-02	2.48E-01
Lung	*10.0*	mrem	1.35E-01	1.35E+00
GI-LLI	*10.0*	mrem	3.39E-02	3.39E-01

TABLE 1-4B
VOGTLE ELECTRIC GENERATING PLANT
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
INDIVIDUAL DOSES DUE TO LIQUID RELEASES
JANUARY, 1995 THROUGH JUNE, 1995

UNIT 2

CUMULATIVE DOSE PER QUARTER

ORGAN	ODCM LIMIT	UNITS	QUARTER 1	% OF ODCM LIMIT	QUARTER 2	% OF ODCM LIMIT
Bone	*5.0*	mrem	9.33E-04	1.87E-02	2.60E-04	5.21E-03
Liver	*5.0*	mrem	3.14E-03	6.28E-02	6.52E-04	1.30E-02
T. Body	*1.5*	mrem	2.89E-03	1.93E-01	6.01E-04	4.01E-02
Thyroid	*5.0*	mrem	3.76E-03	7.52E-02	6.58E-04	1.32E-02
Kidney	*5.0*	mrem	3.40E-03	6.80E-02	1.25E-03	2.50E-02
Lung	*5.0*	mrem	2.40E-02	4.80E-01	5.74E-03	1.15E-01
GI-LLI	*5.0*	mrem	7.66E-03	1.53E-01	1.95E-03	3.91E-02

CUMULATIVE DOSE PER YEAR

ORGAN	*ODCM LIMIT*	*UNITS*	*YEAR TO DATE*	*% OF ODCM LIMIT*
Bone	*10.0*	mrem	1.19E-03	1.19E-02
Liver	*10.0*	mrem	3.79E-03	3.79E-02
T. Body	*3.0*	mrem	3.49E-03	1.16E-01
Thyroid	*10.0*	mrem	4.42E-03	4.42E-02
Kidney	*10.0*	mrem	4.65E-03	4.65E-02
Lung	*10.0*	mrem	2.97E-02	2.97E-01
GI-LLI	*10.0*	mrem	9.61E-03	9.61E-02

TABLE 1-4BB
VOGTLE ELECTRIC GENERATING PLANT
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
INDIVIDUAL DOSES DUE TO LIQUID RELEASES
JULY, 1995 THROUGH DECEMBER, 1995

UNIT 2

CUMULATIVE DOSE PER QUARTER

ORGAN	ODCM LIMIT	UNITS	QUARTER 3	% OF ODCM LIMIT	QUARTER 4	% OF ODCM LIMIT
Bone	*5.0*	mrem	1.29E-02	2.58E-01	1.63E-03	3.26E-02
Liver	*5.0*	mrem	2.65E-02	5.30E-01	6.40E-03	1.28E-01
T. Body	*1.5*	mrem	2.08E-02	1.39E+00	5.64E-03	3.76E-01
Thyroid	*5.0*	mrem	3.59E-03	7.18E-02	3.60E-03	7.19E-02
Kidney	*5.0*	mrem	1.11E-02	2.22E-01	4.46E-03	8.91E-02
Lung	*5.0*	mrem	4.05E-02	8.09E-01	1.12E-02	2.23E-01
GI-LLI	*5.0*	mrem	8.12E-03	1.62E-01	5.96E-03	1.19E-01

CUMULATIVE DOSE PER YEAR

ORGAN	*ODCM LIMIT*	*UNITS*	*YEAR TO DATE*	*% of ODCM LIMIT*
Bone	*10.0*	mrem	1.57E-02	1.57E-01
Liver	*10.0*	mrem	3.67E-02	3.67E-01
T. Body	*3.0*	mrem	2.99E-02	9.98E-01
Thyroid	*10.0*	mrem	1.16E-02	1.16E-01
Kidney	*10.0*	mrem	2.02E-02	2.02E-01
Lung	*10.0*	mrem	8.14E-02	8.14E-01
GI-LLI	*10.0*	mrem	2.37E-02	2.37E-01

TABLE 1-5

MINIMUM DETECTABLE CONCENTRATIONS - LIQUID SAMPLE ANALYSES

VOGTLE ELECTRIC GENERATING PLANT
JANUARY, 1995 - DECEMBER 31, 1997

The values in this table represent a priori Minimum Detectable Concentration (MDC) which are typically achieved in laboratory analyses of liquid radwaste samples.

RADIONUCLIDE	*MDC*	*UNITS*
Mn-54	2.73E-08	uCi/ml
Fe-59	8.33E-08	uCi/ml
Co-58	3.78E-08	uCi/ml
Co-60	6.76E-08	uCi/ml
Zn-65	1.32E-07	uCi/ml
Mo-99	4.31E-07	uCi/ml
Cs-134	3.06E-08	uCi/ml
Cs-137	4.51E-08	uCi/ml
Ce-141	6.99E-08	uCi/ml
Ce-144	2.95E-07	uCi/ml
I-131	5.97E-08	uCi/ml
Xe-133	9.11E-08	uCi/ml
Xe-135	4.27E-08	uCi/ml
Fe-55	1.00E-06	uCi/ml
Sr-89	5.00E-08	uCi/ml
Sr-90	7.00E-09	uCi/ml
H-3	2.00E-06	uCi/ml
Gross Alpha	7.00E-08	uCi/ml

TABLE 1-6A

GEORGIA POWER COMPANY
VOGTLE ELECTRIC GENERATING PLANT - UNIT 1

BATCH RELEASE SUMMARY OF ALL RELEASES

STARTING: JANUARY, 1995 ENDING: JUNE, 1995

LIQUID RELEASES

Number of Releases	24	
Total Time For All Releases	4970.00	minutes
Maximum Time For a Release	405.00	minutes
Average Time For a Release	207.08	minutes
Minimum Time For a Release	52.00	minutes

GASEOUS RELEASES

Number of Releases:	91	
Total Time For All Releases	11587.23	minutes
Maximum Time For A Release	1137.98	minutes
Average Time For A Release	127.33	minutes
Minimum Time For A Release	10.00	minutes

TABLE 1-6AA

GEORGIA POWER COMPANY
VOGTLE ELECTRIC GENERATING PLANT - UNIT 1

BATCH RELEASE SUMMARY OF ALL RELEASES

STARTING: JULY, 1995 ENDING: DECEMBER, 1995

LIQUID RELEASES

Number of Releases	32	
Total Time For All Releases	4880.00	minutes
Maximum Time For a Release	323.00	minutes
Average Time For a Release	152.50	minutes
Minimum Time For a Release	48.00	minutes

GASEOUS RELEASES

Number of Releases:	105	
Total Time For All Releases	17581.32	minutes
Maximum Time For A Release	5824.00	minutes
Average Time For A Release	167.44	minutes
Minimum Time For A Release	8.00	minutes

TABLE 1-6B

GEORGIA POWER COMPANY

VOGTLE ELECTRIC GENERATING PLANT - UNIT 2

BATCH RELEASE SUMMARY OF ALL RELEASES

STARTING: JANUARY, 1995 ENDING: JUNE, 1995

LIQUID RELEASES

Number of Releases	22	
Total Time For All Releases	4790.00	minutes
Maximum Time For a Release	298.00	minutes
Average Time For a Release	217.73	minutes
Minimum Time For a Release	68.00	minutes

GASEOUS RELEASES

Number of Releases:	77	
Total Time For All Releases	42096.07	minutes
Maximum Time For A Release	5684.92	minutes
Average Time For A Release	546.70	minutes
Minimum Time For A Release	11.00	minutes

TABLE 1-6BB

GEORGIA POWER COMPANY

VOGTLE ELECTRIC GENERATING PLANT - UNIT 2

BATCH RELEASE SUMMARY OF ALL RELEASES

STARTING: JULY, 1995 ENDING: DECEMBER, 1995

LIQUID RELEASES

Number of Releases	18	
Total Time For All Releases	2400.18	minutes
Maximum Time For A Release	277.00	minutes
Average Time For A Release	133.34	minutes
Minimum Time For A Release	61.00	minutes

GASEOUS RELEASES

Number of Releases	19	
Total Time For All Releases	3922.33	minutes
Maximum Time For a Release	2441.92	minutes
Average Time For A Release	206.44	minutes
Minimum Time For A Release	46.92	minutes

2.0 *Gaseous Effluents*

2.1 *ODCM Specifications*

The ODCM Specifications presented in this section are for Unit 1 and Unit 2.

2.1.1 *Dose Rate Limit*

The dose rate due to radioactive materials released in gaseous effluents from the site to areas at and beyond the SITE BOUNDARY shall be limited to the following:

a. For noble gases: Less than or equal to 500 mrems/yr. to the whole body and less than or equal to 3000 mrems/yr. to the skin and,

b. For Iodine-131, for Iodine-133, for tritium and for all radionuclides in particulate form with half lives greater than 8 days: Less than or equal to 1500 mrems/yr. to any organ.

2.1.2 *Air Dose Due To Noble Gas*

The air dose due to noble gases released in gaseous effluents, from each unit, to areas at and beyond the SITE BOUNDARY shall be limited to the following:

a. During any calendar quarter: Less than or equal to 5 mrads for gamma radiation and less than or equal to 10 mrads for beta radiation, and

b. During any calendar year: Less than or equal to 10 mrads for gamma radiation and less than or equal to 20 mrads for beta radiation.

2.1.3 *Dose To Any Organ*

The dose to a MEMBER OF THE PUBLIC from Iodine-131, Iodine-133, tritium and all radionuclides in particulate form with half-lives greater than 8 days in gaseous effluents released, from each unit, to areas at and beyond the SITE BOUNDARY shall be limited to the following.

a. During any calendar quarter: Less than or equal to 7.5 mrems to any organ.

b. During any calendar year: Less than or equal to 15 mrems to any organ.

2.1.4 *Total Fuel Cycle Dose Commitment (40CFR190)*

The annual (calendar year) dose or dose commitment to any MEMBER OF THE PUBLIC due to releases of radioactivity and to radiation from uranium fuel cycle sources shall be limited to less than or equal to 25 mrems to the whole body or to any organ, except the thyroid, which shall be limited to less than or equal to 75 mrems.

2.2 *Release Points of Gaseous Effluents*

Gaseous Effluents at Vogtle Electric Generating Plant are currently confined to four paths: plant vents (Unit 1 and Unit 2) the condenser air ejector and steam packing exhauster systems (Unit 1 and Unit 2).

Waste gas decay tanks are batch releases and the waste gas decay tanks are released through the Unit 1 plant vent. Containment purges are released through their respective plant vents.

2.3 *Sample Collection and Analysis*

All of the paths can be continuously monitored for gaseous radioactivity. Each is equipped with an integrated-type sample collection device for collecting particulates and iodines. During this reporting period, there were no continuous radioactive releases through the condenser air ejector and steam packing exhauster system vents. Batch Waste Gas Decay Tank releases are analyzed for noble gases before each release. The containment atmosphere is analyzed for noble gases prior to each release and tritium at least on a monthly basis.

Sample analyses results and release flow rates from the release points form the basis for calculating released quantities of radionuclide specific radioactivity, dose rates associated with gaseous releases, and cumulative doses for the current quarter and year. This task is normally performed with computer assistance.

With each release period and batch release, radioactivity, dose rates, and cumulative doses are calculated. Cumulative dose results are tabulated, along with percent of ODCM limits for each release for the current quarter and year.

2.4 *Total Quantities of Radioactivity, Dose Rates, and Cumulative Doses*

The methods for determining release quantities of radioactivity, dose rates, and cumulative doses are as follows:

2.4.1 *Fission and Activation Gas*

The released radioactivity is determined from sample analyses results collected as described above and average release flow rates over the period represented by the collected sample.

Instantaneous dose rates due to noble gases, radioiodines, tritium, and particulates are calculated (with computer assistance). Calculated dose rates are compared to the dose rate limits specified in ODCM 3.1.2 for noble gases, radioiodines, tritium, and particulates. Dose rate calculation methodology is presented in the ODCM.

Beta and gamma air doses due to noble gases are calculated for the location in the unrestricted area with the potential for the highest exposure due to gaseous releases. Air doses are calculated for each release period and cumulative totals are kept for each unit for the calendar quarter and year. Cumulative air doses are compared to the dose limits specified in ODCM 3.1.3. Current percent of the ODCM limits are shown on the printout for each release period. Air dose calculation methodology is presented in the ODCM.

2.4.2 *Radioiodines, Tritium and Particulate Releases*

Released quantities of radioiodines are determined from the weekly samples and release flow rates for the two release points. Radioiodines concentrations are determined by gamma spectroscopy.

Release quantities of particulates are determined from the weekly (filter) samples and release flow rates for the two release points. Gamma spectroscopy is used to quantify concentrations of principal gamma emitters.

After each quarter, the particulate filters from each vent are combined, fused, and a strontium separation is performed. If Sr-89 or Sr-90 is not detected, MDC's are calculated. Strontium concentrations are input to the composite file of the computer to be used for release dose rate and individual dose calculations.

Tritium samples are obtained at least monthly from each vent by bubbling the sample stream through a water trap. The tritium concentration in water is converted to tritium concentration in air and this value is input into the composite file of the computer to be used in release, dose rate, and individual dose calculations.

Dose rates due to radioiodines, tritium, and particulates are calculated for a hypothetical child, exposed to the inhalation pathway, at the location in the unrestricted area where the potential dose rate is expected to be the highest. Dose rates are calculated for each release point, for each release period, and the total dose rate from both release points are compared to the dose rate limits specified in ODCM 3.1.2

Individual doses due to radioiodines, tritium and particulates are calculated for the controlling receptor, which for Vogtle Electric Generating Plant is a child exposed to the inhalation and ground-plane pathways. Individual doses are calculated for each release period, and cumulative totals are kept for each unit for the current calendar quarter and year. Cumulative individual doses are compared to the dose limits specified in ODCM 3.1.4.

Current percent of ODCM limits are shown on the printout for each release period.

2.4.3 Gross Alpha Release

The gross alpha release is calculated each month by counting the particulate filters for each week for gross alpha activity in a proportional counter by an offsite laboratory. The four or five weeks' numbers are then recorded on a data sheet and the activity is summed at the end of the month. This concentration is input to the composite file of the computer and is used for release calculations.

2.5 *Gaseous Effluent Release Data*

2.5.1 *Methodology*

Regulatory Guide 1.21 Tables 1A, 1B, and 1C are found in this report as Tables 2-2A, 2-2AA, 2-2B, 2-2BB, 2-2C, 2-2CC, 2-3A, 2-3AA, 2-3B, 2-3BB, 2-3C, 2-3CC, 2-4A, 2-4AA, 2-4B, 2-4BB, 2-4C, and 2-4CC. Data is presented on a quarterly basis as required by Regulatory Guide 1.21 for all quarters.

To complete table 2-2A,2-2AA, 2-2B, and 2-2BB, total release for each of the four categories (fission and activation gases, iodines, particulates, and tritium) was divided by the number of seconds in the quarter to obtain a release rate in uCi/second for each category for each quarter. However, the percent of the ODCM limits are not applicable because VEGP has no curie limits for gaseous releases. Applicable limits are expressed in terms of dose. Noble gases are limited as specified in ODCM 3.1.2. The other three categories (tritium, radioiodines, and particulates) are limited as a group as specified in ODCM 3.1.2.

Dose rates due to noble gas releases and due to radioiodines, tritium, and particulates were calculated as part of the pre-release and post-release permits on individual permits. No limits were exceeded for this reporting period.

Gross alpha radioactivity is reported in Table 2-2A,2-2AA, 2-2B, and 2-2BB as curies released in each quarter.

Limits for cumulative beta and gamma air doses due to noble gases are specified in ODCM 3.1.3. Cumulative air doses are presented in Table 2-6A 2-6AA, 2-6B, and 2-6BB along with percent of ODCM limits.

Limits for cumulative individual doses due to radioiodines, tritium and particulates, are specified in ODCM 3.1.4. Cumulative individual doses are presented in Table 2-7A, 2-7AA, 2-7B, and 2-7BB along with percent of ODCM limits.

The total or maximum error associated with the effluent measurement will include the cumulative errors resulting from the total operation of sampling and measurement. Because it may be very difficult to assign error terms for each parameter affecting the final measurement, detailed statistical evaluation of error are not suggested. The objective should be to obtain an overall estimate of the error associated with measurements of radioactive materials released in liquid and gaseous effluents and solid waste.

Estimated errors are based on errors in counting equipment calibration, counting statistics, vent-flow rates, vent sample flow rates, non steady release rates, chemical yield factors and sample losses for such items as charcoal cartridges.

2.5.1.1 Fission and activation total release was calculated from sample analysis results and release point flow rates.

Sampling and statistical error in counting	10%
Counting equipment calibration	10%
Vent flow Rates	10%
Non-steady release rates	20%
TOTAL ERROR	50%

2.5.1.2 I-131 releases were calculated from each weekly sample:

Statistical error in counting	10%
Counting equipment calibration	10%
Vent Flow Rates	10%
Vent Sample Flow Rates	50%
Non-Steady release rates	10%
Losses from charcoal cartridges	10%
TOTAL ERROR	100%

2.5.1.3 Particulates with half lives greater than 8 day releases were calculated from sample and analysis results and release point flow rates.

Statistical error at MDC concentration	10%
Counting equipment calibration	10%
Vent flow rates	10%
Vent sample flow rates	50%
Non steady release rates	10%
TOTAL ERROR	90%

2.5.1.4 Total tritium releases were calculated from sample analysis results and release point flow rates.

Water vapor in sample stream determination	10%
Vent flow rates	10%
Counting calibration and statistics	10%
Non-steady release rates	10%
TOTAL ERROR	40%

2.5.1.5 Gross Alpha radioactivity was calculated from sample analysis results and release point flow rates.

Statistical error at MDC concentration	10%
Counting equipment calibration	10%
Vent flow rates	10%
Vent sample flow rates	50%
Non Steady release rates	10%
TOTAL ERROR	90%

2.5.2 Gaseous Batch Data

Other data pertinent to batch releases of radioactive gaseous effluent from Unit 1 and Unit 2 are listed in Table 1-6A , 1-6AA, 1-6B, and 1-6BB.

2.6 Radiological Impact Due to Gaseous Releases

Dose rates due to noble gas release were calculated for the site in accordance with ODCM 3.4.1.1 Dose rates due to radioiodines, tritium, and particulates in gaseous releases were calculated in accordance with ODCM 3.4.1.2.

As part of pre-release and post release on individual release permits, these dose rates were calculated. No limits were exceeded for this reporting period.

Cumulative air doses due to noble gas releases were calculated for each unit in accordance with ODCM 3.4.2 .These results are presented in Tables 2-6A , 2-6AA, 2-6B, and 2-6BB.

Dose rates and doses were calculated using the methodology presented in the Vogtle Electric Generating Plant Offsite Dose Calculation Manual.

2.7 Abnormal Releases

There were no unplanned releases for this reporting period.

TABLE2-2A

GEORGIA POWER COMPANY
VOGTLE ELECTRIC GENERATING PLANT
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT-1995
ALL AIRBORNE EFFLUENTS
UNIT : 1
STARTING : 1-JAN-1995 ENDING : 30-JUN-1995

TYPE OF EFFLUENT	UNITS	QUARTER1	QUARTER 2	EST.TOTAL ERROR %
A. FISSION & ACTIVATION PRODUCTS				
1. TOTAL RELEASE	CURIES	3.79E+01	2.88E-01	50
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	4.87E+00	3.66E-02	
3. PERCENTAGE OF APPLICABLE LIMIT	%	*	*	
B. RADIOIODINES				
1. TOTAL IODINE-131	CURIES	1.58E-05	2.62E-05	100
2.AVERAGE RELEASE RATE FOR PERIOD DURING PERIOD	uCi/Sec	2.03E-06	3.33E-06	
3. PERCENTAGE OF APPLICABLE LIMIT	%	*	*	
C. PARTICULATES				
1.PARTICULATES(HALF-LIVES >8DAYS)	CURIES	0.00E+00	1.54E-05	90
2.AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	0.00E+00	1.96E-06	
3. PERCENTAGE OF APPLICABLE LIMIT	%	*	*	
D.TRITIUM				
1.TOTAL RELEASE	CURIES	6.51E+01	6.75E+01	40
2.AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	8.37E+00	8.59E+00	
3.PERCENTAGE OF APPLICABLE LIMIT	%	*	*	
4.GROSS ALPHA RADIOACTIVITY	CURIES	1.75E-13	1.92E-13	90

* Applicable limits are expressed in terms of Dose. See Tables 2-6A and 2-7A of this report

TABLE2-2AA

GEORGIA POWER COMPANY
VOGTLE ELECTRIC GENERATING PLANT
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT-1995
ALL AIRBORNE EFFLUENTS
UNIT : 1
STARTING : 1-JUL-1995 ENDING : 31-DEC-1995

TYPE OF EFFLUENT	UNITS	QUARTER3	QUARTER 4	EST.TOTAL ERROR %
A. FISSION & ACTIVATION PRODUCTS				
1. TOTAL RELEASE	CURIES	3.07E-01	3.91E+00	50
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	3.86E-02	4.92E-01	
3. PERCENTAGE OF APPLICABLE LIMIT	%	*	*	
B. RADIOIODINES				
1. TOTAL IODINE-131	CURIES	1.95E-06	2.53E-06	100
2.AVERAGE RELEASE RATE FOR PERIOD DURING PERIOD	uCi/Sec	2.45E-07	3.18E-07	
3. PERCENTAGE OF APPLICABLE LIMIT	%	*	*	
C. PARTICULATES				
1.PARTICULATES(HALF-LIVES >8DAYS)	CURIES	0.00E+00	1.66E-06	90
2.AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	0.00E+00	2.09E-07	
3. PERCENTAGE OF APPLICABLE LIMIT	%	*	*	
D.TRITIUM				
1.TOTAL RELEASE	CURIES	3.17E+01	5.14E+01	40
2.AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	3.99E+00	6.47E+00	
3.PERCENTAGE OF APPLICABLE LIMIT	%	*	*	
4.GROSS ALPHA RADIOACTIVITY	CURIES	3.40E-07	2.13E-13	90

* Applicable limits are expressed in terms of Dose. See Tables 2-6AA and 2-7AA of this report

TABLE2-2B

GEORGIA POWER COMPANY
VOGTLE ELECTRIC GENERATING PLANT
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT-1995
ALL AIRBORNE EFFLUENTS
UNIT : 2
STARTING : 1-JAN-1995 ENDING : 30-JUN-1995

TYPE OF EFFLUENT	UNITS	QUARTER1	QUARTER 2	EST.TOTAL ERROR %
A. FISSION & ACTIVATION PRODUCTS				
1. TOTAL RELEASE	CURIES	1.07E+03	2.03E+00	50
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	1.38E+02	2.58E-01	
3. PERCENTAGE OF APPLICABLE LIMIT	%	*	*	
B. RADIOIODINES				
1. TOTAL IODINE-131	CURIES	7.67E-04	3.73E-06	100
2.AVERAGE RELEASE RATE FOR PERIOD DURING PERIOD	uCi/Sec	9.86E-05	4.74E-07	
3. PERCENTAGE OF APPLICABLE LIMIT	%	*	*	
C. PARTICULATES				
1.PARTICULATES(HALF-LIVES >8DAYS)	CURIES	2.22E-04	2.50E-06	90
2.AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	2.85E-05	3.18E-07	
3. PERCENTAGE OF APPLICABLE LIMIT	%	*	*	
D.TRITIUM				
1.TOTAL RELEASE	CURIES	8.17E+00	3.83E+00	40
2.AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	1.05E+00	4.87E-01	
3.PERCENTAGE OF APPLICABLE LIMIT	%	*	*	
4.GROSS ALPHA RADIOACTIVITY	CURIES	8.49E-14	1.39E-13	90

* Applicable limits are expressed in terms of Dose. See Tables 2-6B and 2-7B of this report

TABLE2-2BB

GEORGIA POWER COMPANY
VOGTLE ELECTRIC GENERATING PLANT
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT-1995
ALL AIRBORNE EFFLUENTS
UNIT : 2
STARTING : 1-JUL-1995 ENDING : 31-DEC-1995

TYPE OF EFFLUENT	UNITS	QUARTER3	QUARTER 4	EST.TOTAL ERROR %
A. FISSION & ACTIVATION PRODUCTS				
1. TOTAL RELEASE	CURIES	7.55E-01	4.46E+00	50
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	9.50E-02	5.61E-01	
3. PERCENTAGE OF APPLICABLE LIMIT	%	*	*	
B. RADIOIODINES				
1. TOTAL IODINE-131	CURIES	4.58E-06	2.12E-06	100
2.AVERAGE RELEASE RATE FOR PERIOD DURING PERIOD	uCi/Sec	5.76E-07	2.67E-07	
3. PERCENTAGE OF APPLICABLE LIMIT	%	*	*	
C. PARTICULATES				
1.PARTICULATES(HALF-LIVES >8DAYS)	CURIES	5.45E-06	2.77E-07	90
2.AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	6.86E-07	3.48E-08	
3. PERCENTAGE OF APPLICABLE LIMIT	%	*	*	
D.TRITIUM				
1.TOTAL RELEASE	CURIES	2.34E+01	3.57E+01	40
2.AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	2.94E+00	4.49E+00	
3.PERCENTAGE OF APPLICABLE LIMIT	%	*	*	
4.GROSS ALPHA RADIOACTIVITY	CURIES	2.68E-13	4.52E-07	90

* Applicable limits are expressed in terms of Dose. See Tables 2-6BB and 2-7BB of this report

TABLE2-2C

GEORGIA POWER COMPANY
VOGTLE ELECTRIC GENERATING PLANT
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT-1995
ALL AIRBORNE EFFLUENTS
SITE
STARTING : 1-JAN-1995 ENDING : 30-JUN-1995

TYPE OF EFFLUENT	UNITS	QUARTER1	QUARTER 2	EST.TOTAL ERROR %
A. FISSION & ACTIVATION PRODUCTS				
1. TOTAL RELEASE	CURIES	1.11E+03	2.32E+00	50
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	1.43E+02	2.95E-01	
3. PERCENTAGE OF APPLICABLE LIMIT	%	*	*	
B. RADIOIODINES				
1. TOTAL IODINE-131	CURIES	7.83E-04	2.99E-05	100
2.AVERAGE RELEASE RATE FOR PERIOD DURING PERIOD	uCi/Sec	1.01E-04	3.81E-06	
3. PERCENTAGE OF APPLICABLE LIMIT	%	*	*	
C. PARTICULATES				
1.PARTICULATES(HALF-LIVES >8DAYS)	CURIES	2.22E-04	1.79E-05	90
2.AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	2.85E-05	1.60E-03	
3. PERCENTAGE OF APPLICABLE LIMIT	%	*	*	
D.TRITIUM				
1.TOTAL RELEASE	CURIES	7.33E+01	7.13E+01	40
2.AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	9.42E+00	9.07E+00	
3.PERCENTAGE OF APPLICABLE LIMIT	%	*	*	
4.GROSS ALPHA RADIOACTIVITY	CURIES	2.60E-13	3.31E-13	90

* Applicable limits are expressed in terms of Dose. See Tables 2-6A , 2-6B, 2-7A and 2-7B of this report

TABLE2-2CC

GEORGIA POWER COMPANY
VOGTLE ELECTRIC GENERATING PLANT
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT-1995
ALL AIRBORNE EFFLUENTS
SITE
STARTING : 1-JUL-1995 ENDING : 31-DEC-1995

TYPE OF EFFLUENT	UNITS	QUARTER3	QUARTER 4	EST.TOTAL ERROR %
A. FISSION & ACTIVATION PRODUCTS				
1. TOTAL RELEASE	CURIES	1.06E+00	8.37E+00	50
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	1.34E-01	1.05E+00	
3. PERCENTAGE OF APPLICABLE LIMIT	%	*	*	
B. RADIOIODINES				
1. TOTAL IODINE-131	CURIES	6.53E-06	4.65E-06	100
2.AVERAGE RELEASE RATE FOR PERIOD DURING PERIOD	uCi/Sec	8.22E-07	5.85E-07	
3. PERCENTAGE OF APPLICABLE LIMIT	%	*	*	
C. PARTICULATES				
1.PARTICULATES(HALF-LIVES >8DAYS)	CURIES	5.45E-06	1.94E-06	90
2.AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	6.86E-07	2.44E-07	
3. PERCENTAGE OF APPLICABLE LIMIT	%	*	*	
D.TRITIUM				
1.TOTAL RELEASE	CURIES	5.51E+01	8.71E+01	40
2.AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	6.93E+00	1.10E+01	
3.PERCENTAGE OF APPLICABLE LIMIT	%	*	*	
4.GROSS ALPHA RADIOACTIVITY	CURIES	3.40E-07	4.52E-07	90

* Applicable limits are expressed in terms of Dose. SeeTables 2-6AA, 2-6BB, 2-7AA and 2-7BB of this report

TABLE 2-3A (PAGE 1 OF 2)

VOGTLE ELECTRIC GENERATING PLANT

ANNUAL EFFLUENTS - MIXED MODE

JANUARY, 1995 THROUGH JUNE, 1995

UNIT 1

NUCLIDES RELEASED	UNIT	CONTINUOUS MODE		BATCH MODE	
1. Fission Gasses		*QUARTER 1*	*QUARTER 2*	*QUARTER 1*	*QUARTER 2*
Ar-41	Ci	0.00E+00	0.00E+00	1.42E-01	2.15E-01
Kr-85	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Kr-85m	Ci	1.43E-01	0.00E+00	0.00E+00	0.00E+00
Xe-131m	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xe-133	Ci	3.39E+01	0.00E+00	4.13E-02	7.12E-02
Xe-133m	Ci	6.08E-01	0.00E+00	0.00E+00	0.00E+00
Xe-135	Ci	2.88E+00	0.00E+00	2.00E-03	1.34E-03
Xe-135m	Ci	1.39E-01	0.00E+00	0.00E+00	0.00E+00
TOTAL FOR PERIOD	Ci	3.77E+01	0.00E+00	1.85E-01	2.88E-01
2. Iodine's					
I-131	Ci	1.58E-05	2.62E-05	0.00E+00	0.00E+00
I-133	Ci	3.48E-06	0.00E+00	0.00E+00	0.00E+00
TOTAL FOR PERIOD	Ci	1.93E-05	2.62E-05	0.00E+00	0.00E+00

*Zeroes in this table indicate that no radioactivity was present above detectable levels. See Table 2-8 for typical minimum detectable concentrations.

TABLE 2-3A (PAGE 2 OF 2)

VOGTLE ELECTRIC GENERATING PLANT

ANNUAL EFFLUENTS - MIXED MODE

JANUARY, 1995 THROUGH JUNE , 1995

UNIT 1

NUCLIDES RELEASED	UNIT	CONTINUOUS MODE		BATCH MODE	
3. Particulates		*QUARTER 1*	*QUARTER 2*	*QUARTER 1*	*QUARTER 2*
Be-7	Ci	0.00E+00	1.56E-06	0.00E+00	0.00E+00
Co-58	Ci	0.00E+00	2.46E-07	0.00E+00	0.00E+00
Co-60	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cr-51	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Fe-59	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
I-131	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Mn-54	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Nb-95	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Sr-89	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Sr-90	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Te-125m	Ci	0.00E+00	1.36E-05	0.00E+00	0.00E+00
Zr-95	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TOTAL FOR PERIOD	Ci	0.00E+00	1.54E-05	0.00E+00	0.00E+00
G-ALPHA	Ci	1.75E-13	1.92E-13	0.00E+00	0.00E+00
H-3	Ci	6.51E+01	6.71E+01	1.21E-02	4.02E-01

*Zeroes in this table indicate that no radioactivity was present above detectable levels. See Table 2-8 for typical minimum detectable concentrations.

TABLE 2-3AA (PAGE 1 OF 2)

VOGTLE ELECTRIC GENERATING PLANT

ANNUAL EFFLUENTS - MIXED MODE

JULY, 1995 THROUGH DECEMBER, 1995

UNIT 1

NUCLIDES RELEASED	UNIT	CONTINUOUS MODE		BATCH MODE	
1. Fission Gasses		*QUARTER 3*	*QUARTER 4*	*QUARTER 3*	*QUARTER 4*
Ar-41	Ci	0.00E+00	0.00E+00	2.16E-01	1.69E-01
Kr-85	Ci	0.00E+00	0.00E+00	0.00E+00	6.38E-01
Kr-85m	Ci	0.00E+00	0.00E+00	0.00E+00	1.07E-05
Xe-131m	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xe-133	Ci	0.00E+00	3.02E+00	8.87E-02	7.71E-02
Xe-133m	Ci	0.00E+00	0.00E+00	0.00E+00	3.18E-04
Xe-135	Ci	0.00E+00	0.00E+00	2.68E-03	1.45E-03
TOTAL FOR PERIOD	Ci	0.00E+00	3.02E+00	3.07E-01	8.86E-01
2. Iodines					
I-131	Ci	1.95E-06	2.53E-06	0.00E+00	0.00E+00
I-133	Ci	4.62E-06	3.45E-06	0.00E+00	0.00E+00
TOTAL FOR PERIOD	Ci	6.57E-06	5.98E-06	0.00E+00	0.00E+00

*Zeroes in this table indicate that no radioactivity was present above detectable levels. See Table 2-8 for typical minimum detectable concentrations.

TABLE 2-3AA(PAGE 2 OF 2)

VOGTLE ELECTRIC GENERATING PLANT

ANNUAL EFFLUENTS - MIXED MODE

JULY, 1995 THROUGH DECEMBER , 1995

UNIT 1

NUCLIDES RELEASED	UNIT	CONTINUOUS MODE		BATCH MODE	
3. Particulates		*QUARTER 3*	*QUARTER 4*	*QUARTER 3*	*QUARTER 4*
Be-7	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Co-57	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Co-58	Ci	0.00E+00	1.64E-06	0.00E+00	0.00E+00
Co-60	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cr-51	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Mn-54	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Sr-89	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Zr-95	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TOTAL FOR PERIOD	Ci	0.00E+00	1.64E-06	0.00E+00	0.00E+00
G-ALPHA	Ci	3.40E-07	2.13E-13	0.00E+00	0.00E+00
H-3	Ci	3.16E+01	5.13E+01	4.36E-02	7.35E-02

*Zeroes in this table indicate that no radioactivity was present above detectable levels See Table 2-8 for typical minimum detectable concentrations.

TABLE 2 3B (PAGE 1 OF 2)

VOGTLE ELECTRIC GENERATING PLANT

ANNUAL EFFLUENTS - MIXED MODE

JANUARY, 1995 THROUGH JUNE, 1995

UNIT 2

NUCLIDES RELEASED	UNIT	CONTINUOUS MODE		BATCH MODE	
1. Fission Gasses		*QUARTER 1*	*QUARTER 2*	*QUARTER 1*	*QUARTER 2*
Ar-41	Ci	0.00E+00	0.00E+00	3.26E-01	1.64E-01
Kr-85	Ci	2.74E+00	0.00E+00	3.26E+01	1.55E-01
Kr-85m	Ci	3.93E-01	0.00E+00	0.00E+00	0.00E+00
Xe-131m	Ci	1.43E+01	0.00E+00	1.30E+01	0.00E+00
Xe-133	Ci	5.17E+02	6.73E-02	3.89E+02	1.33E-01
Xe-133m	Ci	5.90E+00	0.00E+00	2.23E+00	0.00E+00
Xe-135	Ci	6.33E+00	1.51E+00	2.38E-02	3.27E-03
Xe-135m	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TOTAL FOR PERIOD	Ci	5.47E+02	1.58E+00	4.37E+02	4.55E-01
2. Iodine's					
I-131	Ci	7.49E-04	3.73E-06	0.00E+00	0.00E+00
I-133	Ci	1.59E-04	3.48E-06	0.00E+00	0.00E+00
TOTAL FOR PERIOD	Ci	9.08E-04	7.21E-06	0.00E+00	0.00E+00

*Zeroes in this table indicate that no radioactivity was present above detectable levels. See Table 2-8 for typical minimum detectable concentrations.

TABLE 2-3B (PAGE 2 OF 2)

VOGTLE ELECTRIC GENERATING PLANT

ANNUAL EFFLUENTS - MIXED MODE

JANUARY, 1995 THROUGH JUNE , 1995

UNIT 2

NUCLIDES RELEASED	UNIT	CONTINUOUS MODE		BATCH MODE	
3. Particulates		*QUARTER 1*	*QUARTER 2*	*QUARTER 1*	*QUARTER 2*
Be-7	Ci	1.47E-06	1.64E-06	0.00E+00	0.00E+00
Co-58	Ci	3.03E-05	8.61E-07	7.28E-12	0.00E+00
Co-60	Ci	1.21E-05	0.00E+00	0.00E+00	0.00E+00
Cr-51	Ci	1.55E-05	0.00E+00	0.00E+00	0.00E+00
Fe-59	Ci	5.62E-07	0.00E+00	0.00E+00	0.00E+00
I-131	Ci	5.49E-07	0.00E+00	0.00E+00	0.00E+00
Mn-54	Ci	3.17E-06	0.00E+00	0.00E+00	0.00E+00
Nb-95	Ci	2.40E-06	0.00E+00	0.00E+00	0.00E+00
Sr-89	Ci	7.22E-08	3.77E-09	0.00E+00	0.00E+00
Te-125m	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Zr-95	Ci	1.44E-06	0.00E+00	0.00E+00	0.00E+00
OTHER	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TOTAL FOR PERIOD	Ci	6.76E-05	2.50E-06	7.28E-12	0.00E+00
G-ALPHA	Ci	8.49E-14	1.39E-13	0.00E+00	0.00E+00
H-3	Ci	6.30E+00	3.80E+00	1.66E+00	3.21E-02

*Zeroes in this table indicate that no radioactivity was present above detectable levels. See Table 2-8 for typical minimum detectable concentrations.

TABLE 2-3BB (PAGE 1 OF 2)

VOGTLE ELECTRIC GENERATING PLANT

ANNUAL EFFLUENTS - MIXED MODE

JULY, 1995 THROUGH DECEMBER, 1995

UNIT 2

NUCLIDES RELEASED	UNIT	CONTINUOUS MODE		BATCH MODE	
1. Fission Gasses		*QUARTER 3*	*QUARTER 4*	*QUARTER 3*	*QUARTER 4*
Ar-41	Ci	0.00E+00	0.00E+00	1.02E-01	1.59E-02
Kr-85	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Kr-85m	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xe-131m	Ci	0.00E+00	0.00E+00	0.00E+00	1.56E-03
Xe-133	Ci	0.00E+00	3.54E+00	2.50E-01	2.00E-01
Xe-133m	Ci	0.00E+00	0.00E+00	0.00E+00	8.97E-04
Xe-135	Ci	3.99E-01	7.04E-01	3.74E-03	2.00E-04
TOTAL FOR PERIOD	Ci	3.99E-01	4.24E+00	3.56E-01	2.19E-01
2. Iodines					
I-131	Ci	4.58E-06	2.12E-06	0.00E+00	0.00E+00
I-133	Ci	4.72E-05	1.42E-05	0.00E+00	0.00E+00
TOTAL FOR PERIOD	Ci	5.18E-05	1.63E-05	0.00E+00	0.00E+00

*Zeroes in this table indicate that no radioactivity was present above detectable levels. See Table 2-8 for typical minimum detectable concentrations.

TABLE 2-3BB (PAGE 2 OF 2)

VOGTLE ELECTRIC GENERATING PLANT

ANNUAL EFFLUENTS - MIXED MODE

JULY, 1995 THROUGH DECEMBER , 1995

UNIT 2

NUCLIDES RELEASED	UNIT	CONTINUOUS MODE		BATCH MODE	
3. Particulates		*QUARTER 3*	*QUARTER 4*	*QUARTER 3*	*QUARTER 4*
Be-7	Ci	5.07E-06	0.00E+00	0.00E+00	0.00E+00
Co-57	CI	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Co-58	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Co-60	Ci	0.00E+00	2.77E-07	0.00E+00	0.00E+00
Cr-51	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Mn-54	Ci	2.20E-07	0.00E+00	0.00E+00	0.00E+00
Sr-89	Ci	1.59E-07	0.00E+00	0.00E+00	0.00E+00
Zr-95	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TOTAL FOR PERIOD	Ci	5.45E-06	2.77E-07	0.00E+00	0.00E+00
G-ALPHA	Ci	2.68E-13	4.52E-07	0.00E+00	0.00E+00
H-3	Ci	2.33E+01	3.57E+01	6.79E-02	8.21E-03

*Zeroes in this table indicate that no radioactivity was present above detectable levels. See Table 2-8 for typical minimum detectable concentrations.

TABLE 2-3C (PAGE 1 OF 2)

VOGTLE ELECTRIC GENERATING PLANT

ANNUAL EFFLUENTS - MIXED MODE

JANUARY, 1995 THROUGH JUNE, 1995

SITE

NUCLIDES RELEASED	UNIT	CONTINUOUS MODE		BATCH MODE	
1. Fission Gasses		*QUARTER 1*	*QUARTER 2*	*QUARTER 1*	*QUARTER 2*
Ar-41	Ci	0.00E+00	0.00E+00	4.68E-01	3.79E-01
Kr-85	Ci	2.74E+00	0.00E+00	3.26E+01	1.55E-01
Kr-85m	Ci	5.36E-01	0.00E+00	0.00E+00	0.00+-00
Xe-131m	Ci	1.43E+01	0.00E+00	1.30E+01	0.00E+00
Xe-133	Ci	5.51E+02	6.73E-02	3.89E+02	2.04E-01
Xe-133m	Ci	6.51E+00	0.00E+00	2.23E+00	0.00E+00
Xe-135m	Ci	1.39E-01	0.00E+00	0.00E+00	0.00E+00
Xe-135	Ci	9.21E+00	1.51E+00	2.58E-02	4.61E-03
TOTAL FOR PERIOD	Ci	5.84E+02	1.58E+00	4.37E+02	7.43E-01
2. Iodines					
I-131	Ci	7.65E-04	2.99E-05	0.00E+00	0.00E+00
I-133	Ci	1.62E-04	3.48E-06	0.00E+00	0.00E+00
TOTAL FOR PERIOD	Ci	9.27E-04	3.34E-05	0.00E+00	0.00E+00

*Zeroes in this table indicate that no radioactivity was present above detectable levels. See Table 2-8 for typical minimum detectable concentrations.

TABLE 2-3C (PAGE 2 OF 2)

VOGTLE ELECTRIC GENERATING PLANT

ANNUAL EFFLUENTS - MIXED MODE

JANUARY, 1995 THROUGH JUNE , 1995

SITE

NUCLIDES RELEASED	UNIT	CONTINUOUS MODE		BATCH MODE	
3. Particulates		*QUARTER 1*	*QUARTER 2*	*QUARTER 1*	*QUARTER 2*
Be-7	Ci	1.47E-06	3.20E-06	0.00E+00	0.00E+00
Co-58	Ci	3.03E-05	1.11E-06	7.28E-12	0.00E+00
Co-60	Ci	1.21E-05	0.00E+00	0.00E+00	0.00E+00
Cr-51	Ci	1.55E-05	0.00E+00	0.00E+00	0.00E+00
Fe-59	Ci	5.62E-07	0.00E+00	0.00E+00	0.00E+00
I-131	Ci	5.49E-07	0.00E+00	0.00E+00	0.00E+00
Mn-54	Ci	3.17E-06	0.00E+00	0.00E+00	0.00E+00
Nb-95	Ci	2.40E-06	0.00E+00	0.00E+00	0.00E+00
Sr-89	CI	7.22E-08	3.77E-09	0.00E+00	0.00E+00
Te-125m	Ci	0.00E+00	1.36E-05	0.00E+00	0.00E+00
Zr-95	Ci	1.44E-06	0.00E+00	0.00E+00	0.00E+00
TOTAL FOR PERIOD	Ci	6.76E-05	1.79E-05	7.28E-12	0.00E+00
G-ALPHA	Ci	2.63E-13	3.31E-13	0.00E+00	0.00E+00
H-3	Ci	7.14E+01	7.09E+01	1.67E+00	4.34E-01

*Zeroes in this table indicate that no radioactivity was present above detectable levels. See Table 2-8 for typical minimum detectable concentrations.

TABLE 2-3CC (PAGE 1 OF 2)

VOGTLE ELECTRIC GENERATING PLANT

ANNUAL EFFLUENTS - MIXED MODE

JULY, 1995 THROUGH DECEMBER, 1995

SITE

NUCLIDES RELEASED	UNIT	CONTINUOUS MODE		BATCH MODE	
1. Fission Gasses		*QUARTER 3*	*QUARTER 4*	*QUARTER 3*	*QUARTER 4*
Ar-41	Ci	0.00E+00	0.00E+00	3.18E-01	1.85E-01
Kr-85	Ci	0.00E+00	0.00E+00	0.00E+00	6.38E-01
Kr-85m	Ci	0.00E+00	0.00E+00	0.00E+00	1.07E-05
Xe-131m	Ci	0.00E+00	0.00E+00	0.00E+00	1.56E-03
Xe-133	Ci	0.00E+00	6.56E+00	3.39E-01	2.77E-01
Xe-133m	Ci	0.00E+00	0.00E+00	0.00E+00	1.22E-03
Xe-135	Ci	3.99E-01	7.04E-01	6.42E-03	1.65E-03
TOTAL FOR PERIOD	Ci	3.99E-01	7.26E+00	6.63E-01	1.10E+00
2. Iodines					
I-131	Ci	6.53E-06	4.65E-06	0.00E+00	0.00E+00
I-133	Ci	5.18E-05	1.77E-05	0.00E+00	0.00E+00
TOTAL FOR PERIOD	Ci	5.84E-05	2.23E-05	0.00E+00	0.00E+00

*Zeroes in this table indicate that no radioactivity was present above detectable levels. See Table 2-8 for typical minimum detectable concentrations.

TABLE 2-3CC (PAGE 2 OF 2)

VOGTLE ELECTRIC GENERATING PLANT

ANNUAL EFFLUENTS - MIXED MODE

JULY, 1995 THROUGH DECEMBER , 1995

SITE

NUCLIDES RELEASED	UNIT	CONTINUOUS MODE		BATCH MODE	
3. Particulates		*QUARTER 3*	*QUARTER 4*	*QUARTER 3*	*QUARTER 4*
Be-7	Ci	5.07E-06	0.00E+00	0.00E+00	0.00E+00
Co-57	CI	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Co-58	Ci	0.00E+00	1.64E-06	0.00E+00	0.00E+00
Co-60	Ci	0.00E+00	2.77E-07	0.00E+00	0.00E+00
Cr-51	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Mn-54	Ci	2.20E-07	0.00E+00	0.00E+00	0.00E+00
Sr-89	Ci	1.59E-07	0.00E+00	0.00E+00	0.00E+00
Zr-95	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TOTAL FOR PERIOD	Ci	5.45E-06	1.92E-06	0.00E+00	0.00E+00
G-ALPHA	Ci	3.40E-07	4.52E-07	0.00E+00	0.00E+00
H-3	Ci	5.49E+01	8.70E+01	1.12E-01	8.17E-02

*Zeroes in this table indicate that no radioactivity was present above detectable levels. See Table 2-8 for typical minimum detectable concentrations.

TABLE 2-4A (PAGE 1 OF 2)

VOGTLE ELECTRIC GENERATING PLANT

ANNUAL EFFLUENTS - GROUND MODE

JANUARY, 1995 THROUGH JUNE, 1995

UNIT 1

NUCLIDES RELEASED	UNIT	CONTINUOUS MODE		BATCH MODE	
1. Fission Gasses		*QUARTER 1*	*QUARTER 2*	*QUARTER 1*	*QUARTER 2*
Xe-135	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xe-133m	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xe-133	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xe-131m	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Kr-85	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TOTAL FOR PERIOD	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2. Iodines					
I-133	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
BR-82	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
I-131	Ci	0.00E+00.	0.00E+00	0.00E+00	0.00E+00
TOTAL FOR PERIOD	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00

*Zeroes in this table indicate that no radioactivity was present above detectable levels. See Table 2-8 for typical minimum detectable concentrations.

TABLE 2-4A (PAGE 2 OF 2)

VOGTLE ELECTRIC GENERATING PLANT

ANNUAL EFFLUENTS - GROUND MODE

JAN, 1995 THROUGH JUNE , 1995

UNIT 1

NUCLIDES RELEASED	UNIT	CONTINUOUS MODE		BATCH MODE	
3. Particulates		*QUARTER 1*	*QUARTER 2*	*QUARTER 1*	*QUARTER 2*
Co-58	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TOTAL FOR PERIOD	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
G-ALPHA	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00

*Zeroes in this table indicate that no radioactivity was present above detectable levels. See Table 2-8 for typical minimum detectable concentrations.

TABLE 2-4AA (PAGE 1 OF 2)

VOGTLE ELECTRIC GENERATING PLANT

ANNUAL EFFLUENTS - GROUND MODE

JULY, 1995 THROUGH DECEMBER, 1995

UNIT 1

NUCLIDES RELEASED	UNIT	CONTINUOUS MODE		BATCH MODE	
1. Fission Gasses		*QUARTER 3*	*QUARTER 4*	*QUARTER 3*	*QUARTER 4*
Xe-135	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xe-133m	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xe-133	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xe-131m	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Kr-85	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TOTAL FOR PERIOD	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2. Iodines					
I-133	Ci	0.00E+00	0.00E+00	0.00E+00	7.13E-10
BR-82	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
I-131	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TOTAL FOR PERIOD	Ci	0.00E+00	0.00E+00	0.00E+00	7.13E-10

*Zeroes in this table indicate that no radioactivity was present above detectable levels. See Table 2-8 for typical minimum detectable concentrations.

TABLE 2-4AA (PAGE 2 OF 2)

VOGTLE ELECTRIC GENERATING PLANT

ANNUAL EFFLUENTS - GROUND MODE

JULY, 1995 THROUGH DECEMBER , 1995

UNIT 1

NUCLIDES RELEASED	UNIT	CONTINUOUS MODE		BATCH MODE	
3. Particulates		*QUARTER 3*	*QUARTER 4*	*QUARTER 3*	*QUARTER 4*
NB-95	Ci	0.00E+00	0.00E+00	0.00E+00	1.22E-09
Zr-95	Ci	0.00E+00	0.00E+00	0.00E+00	1.36E-09
Co-58	Ci	0.00E+00	1.64E-06	0.00E+00	7.09E-09
Mn-54	Ci	0.00E+00	0.00E+00	0.00E+00	1.55E-09
Co-60	Ci	0.00E+00	0.00E+00	0.00E+00	3.72E-09
Cs-137	Ci	0.00E+00	0.00E+00	0.00E+00	5.53E-10
TOTAL FOR PERIOD	Ci	0.00E+00	1.64E-06	0.00E+00	1.55E-08
G-ALPHA	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00

*Zeroes in this table indicate that no radioactivity was present above detectable levels. See Table 2-8 for typical minimum detectable concentrations.

TABLE 2-4B (PAGE 1 OF 2)

VOGTLE ELECTRIC GENERATING PLANT

ANNUAL EFFLUENTS - GROUND MODE

JANUARY, 1995 THROUGH JUNE, 1995

UNIT 2

NUCLIDES RELEASED	UNIT	CONTINUOUS MODE		BATCH MODE	
1. Fission Gasses		*QUARTER 1*	*QUARTER 2*	*QUARTER 1*	*QUARTER 2*
Xe-135	Ci	0.00E+00	0.00E+00	4.37E-03	0.00E+00
Xe-133m	Ci	0.00E+00	0.00E+00	6.11E-01	0.00E+00
Xe-133	Ci	0.00E+00	0.00E+00	8.09E+01	0.00E+00
Xe-131m	Ci	0.00E+00	0.00E+00	1.85E+00	0.00E+00
Kr-85	Ci	0.00E+00	0.00E+00	4.44E+00	0.00E+00
TOTAL FOR PERIOD	Ci	0.00E+00	0.00E+00	8.78E+01	0.00E+00
2. Iodines					
I-132	Ci	0.00E+00	0.00E+00	2.94E-06	0.00E+00
I-135	Ci	0.00E+00	0.00E+00	1.09E-07	0.00E+00
I-133	Ci	0.00E+00	0.00E+00	2.79E-07	0.00E+00
BR-82	Ci	0.00E+00	0.00E+00	3.83E-07	0.00E+00
I-131	Ci	0.00E+00.	0.00E+00	1.76E-05	0.00E+00
TOTAL FOR PERIOD	Ci	0.00E+00	0.00E+00	2.13E-05	0.00E+00

*Zeroes in this table indicate that no radioactivity was present above detectable levels. See Table 2-8 for typical minimum detectable concentrations.

TABLE 2-4B (PAGE 2 OF 2)

VOGTLE ELECTRIC GENERATING PLANT

ANNUAL EFFLUENTS - GROUND MODE

JAN, 1995 THROUGH JUNE , 1995

UNIT 2

NUCLIDES RELEASED	UNIT	CONTINUOUS MODE		BATCH MODE	
3. Particulates		*QUARTER 1*	*QUARTER 2*	*QUARTER 1*	*QUARTER 2*
Co-58	Ci	0.00E+00	0.00E+00	1.55E-04	0.00E+00
TOTAL FOR PERIOD	Ci	0.00E+00	0.00E+00	1.55E-04	0.00E+00
G-ALPHA	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3	Ci	0.00E+00	0.00E+00	2.06E-01	0.00E+00

*Zeroes in this table indicate that no radioactivity was present above detectable levels. See Table 2-8 for typical minimum detectable concentrations.

TABLE 2-4BB (PAGE 1 OF 2)

VOGTLE ELECTRIC GENERATING PLANT

ANNUAL EFFLUENTS - GROUND MODE

JULY, 1995 THROUGH DECEMBER, 1995

UNIT 2

NUCLIDES RELEASED	UNIT	CONTINUOUS MODE		BATCH MODE	
1. Fission Gasses		*QUARTER 3*	*QUARTER 4*	*QUARTER 3*	*QUARTER 4*
Xe-135	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xe-133m	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xe-133	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xe-131m	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Kr-85	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TOTAL FOR PERIOD	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2. Iodines					
I-133	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
BR-82	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
I-131	Ci	0.00E+00.	0.00E+00	0.00E+00	0.00E+00
TOTAL FOR PERIOD	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00

*Zeroes in this table indicate that no radioactivity was present above detectable levels. See Table 2-8 for typical minimum detectable concentrations.

TABLE 2-4BB(PAGE 2 OF 2)

VOGTLE ELECTRIC GENERATING PLANT

ANNUAL EFFLUENTS - GROUND MODE

JULY, 1995 THROUGH DECEMBER , 1995

UNIT 2

NUCLIDES RELEASED	UNIT	CONTINUOUS MODE		BATCH MODE	
3. Particulates		*QUARTER 3*	*QUARTER 4*	*QUARTER 3*	
Be-7	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Co-57	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Co-58	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Co-60	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cr-51	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Mn-54	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Sr-89	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Zr-95	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TOTAL FOR PERIOD	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
G-ALPHA	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00

*Zeroes in this table indicate that no radioactivity was present above detectable levels. See Table 2-8 for typical minimum detectable concentrations.

TABLE 2-4C (PAGE 1 OF 2)

VOGTLE ELECTRIC GENERATING PLANT

ANNUAL EFFLUENTS - GROUND MODE

JANUARY, 1995 THROUGH JUNE, 1995

SITE

NUCLIDES RELEASED	UNIT	CONTINUOUS MODE		BATCH MODE	
1. Fission Gasses		*QUARTER 1*	*QUARTER 2*	*QUARTER 1*	*QUARTER 2*
Xe-135	Ci	0.00E+00	0.00E+00	4.37E-03	0.00E+00
Xe-133m	Ci	0.00E+00	0.00E+00	6.11E-01	0.00E+00
Xe-133	Ci	0.00E+00	0.00E+00	8.09E+01	0.00E+00
Xe-131m	Ci	0.00E+00	0.00E+00	1.85E+00	0.00E+00
Kr-85	Ci	0.00E+00	0.00E+00	4.44E+00	0.00E+00
TOTAL FOR PERIOD	Ci	0.00E+00	0.00E+00	8.78E+01	0.00E+00
2. Iodines					
I-132	Ci	0.00E+00	0.00E+00	2.94E-06	0.00E+00
I-135	Ci	0.00E+00	0.00E+00	1.09E-07	0.00E+00
I-133	Ci	0.00E+00	0.00E+00	2.79E-07	0.00E+00
BR-82	Ci	0.00E+00	0.00E+00	3.83E-07	0.00E+00
I-131	Ci	0.00E+00.	0.00E+00	1.76E-05	0.00E+00
TOTAL FOR PERIOD	Ci	0.00E+00	0.00E+00	2.13E-05	0.00E+00

*Zeroes in this table indicate that no radioactivity was present above detectable levels. See Table 2-8 for typical minimum detectable concentrations.

TABLE 2-4C (PAGE 2 OF 2)

VOGTLE ELECTRIC GENERATING PLANT

ANNUAL EFFLUENTS - GROUND MODE

JAN, 1995 THROUGH JUNE , 1995

SITE

NUCLIDES RELEASED	UNIT	CONTINUOUS MODE		BATCH MODE	
3. Particulates		*QUARTER 1*	*QUARTER 2*	*QUARTER 1*	*QUARTER 2*
Co-58	Ci	0.00E+00	0.00E+00	1.55E-04	0.00E+00
TOTAL FOR PERIOD	Ci	0.00E+00	0.00E+00	1.55E-04	0.00E+00
G-ALPHA	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3	Ci	0.00E+00	0.00E+00	2.06E-01	0.00E+00

*Zeroes in this table indicate that no radioactivity was present above detectable levels. See Table 2-8 for typical minimum detectable concentrations.

TABLE 2-4CC (PAGE 1 OF 2)

VOGTLE ELECTRIC GENERATING PLANT

ANNUAL EFFLUENTS - GROUND MODE

JULY, 1995 THROUGH DECEMBER, 1995

SITE

NUCLIDES RELEASED	UNIT	CONTINUOUS MODE		BATCH MODE	
1. Fission Gasses		*QUARTER 3*	*QUARTER 4*	*QUARTER 3*	*QUARTER 4*
Xe-135	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xe-133m	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xe-133	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xe-131m	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Kr-85	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TOTAL FOR PERIOD	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2. Iodines					
I-133	Ci	0.00E+00	0.00E+00	0.00E+00	7.13E-10
BR-82	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
I-131	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TOTAL FOR PERIOD	Ci	0.00E+00	0.00E+00	0.00E+00	7.13E-10

*Zeroes in this table indicate that no radioactivity was present above detectable levels. See Table 2-8 for typical minimum detectable concentrations.

TABLE 2-4CC (PAGE 2 OF 2)

VOGTLE ELECTRIC GENERATING PLANT

ANNUAL EFFLUENTS - GROUND MODE

JULY, 1995 THROUGH DECEMBER , 1995

SITE

NUCLIDES RELEASED	UNIT	CONTINUOUS MODE		BATCH MODE	
3. Particulates		*QUARTER 3*	*QUARTER 4*	*QUARTER 3*	*QUARTER 4*
NB-95	Ci	0.00E+00	0.00E+00	0.00E+00	1.22E-09
Zr-95	Ci	0.00E+00	0.00E+00	0.00E+00	1.36E-09
Co-58	Ci	0.00E+00	1.64E-06	0.00E+00	7.09E-09
Mn-54	Ci	0.00E+00	0.00E+00	0.00E+00	1.55E-09
Co-60	Ci	0.00E+00	0.00E+00	0.00E+00	3.72E-09
Cs-137	Ci	0.00E+00	0.00E+00	0.00E+00	5.53E-10
TOTAL FOR PERIOD	Ci	0.00E+00	1.64E-06	0.00E+00	1.55E-08
G-ALPHA	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00

*Zeroes in this table indicate that no radioactivity was present above detectable levels. See Table 2-8 for typical minimum detectable concentrations.

TABLE 2-6A
VOGTLE ELECTRIC GENERATING PLANT
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
AIR DOSE DUE TO NOBLE GAS RELEASES
JANUARY, 1995 THROUGH JUNE, 1995

UNIT 1

CUMMULATIVE DOSE PER QUARTER

TYPE OF RADIATION	ODCM LIMIT	UNITS	QUARTER 1	% OF ODCM LIMIT	QUARTER 2	% OF ODCM LIMIT
GAMMA	5.0	mrad	2.88E-04	5.77E-03	2.96E-05	5.92E-04
BETA	10.0	mrad	6.51E-04	6.51E-03	1.14E-05	1.14E-04

CUMULATIVE DOSES PER YEAR (YEAR TO DATE)

TYPE OF RADIATION	ODCM LIMIT	UNITS	YEAR TO DATE	% OF ODCM LIMIT
GAMMA	10.0	mrad	3.18E-04	3.18E-03
BETA	20.0	mrad	6.63E-04	3.31E-03

TABLE 2-6AA
VOGTLE ELECTRIC GENERATING PLANT
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
AIR DOSE DUE TO NOBLE GAS RELEASES
JULY, 1995 THROUGH DECEMBER, 1995

UNIT 1

CUMMULATIVE DOSE PER QUARTER

TYPE OF RADIATION	ODCM LIMIT	UNITS	QUARTER 3	% OF ODCM LIMIT	QUARTER 4	% OF ODCM LIMIT
GAMMA	5.0	mrad	2.99E-05	5.99E-04	3.93E-05	7.85E-04
BETA	10.0	mrad	1.18E-05	1.18E-04	7.40E-05	7.40E-04

CUMULATIVE DOSES PER YEAR (YEAR TO DATE)

TYPE OF RADIATION	ODCM LIMIT	UNITS	YEAR TO DATE	% OF ODCM LIMIT
GAMMA	10.0	mrad	3.87E-04	3.87E-03
BETA	20.0	mrad	7.49E-04	3.74E-03

TABLE 2-6B
VOGTLE ELECTRIC GENERATING PLANT
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
AIR DOSE DUE TO NOBLE GAS RELEASES
JANUARY, 1995 THROUGH JUNE, 1995

UNIT 2

CUMMULATIVE DOSE PER QUARTER

TYPE OF RADIATION	ODCM LIMIT	UNITS	QUARTER 1	% OF ODCM LIMIT	QUARTER 2	% OF ODCM LIMIT
GAMMA	5.0	mrad	7.38E-03	1.48E-01	6.60E-05	1.32E-03
BETA	10.0	mrad	2.36E-02	2.36E-01	6.99E-05	6.99E-04

CUMULATIVE DOSES PER YEAR (YEAR TO DATE)

TYPE OF RADIATION	ODCM LIMIT	UNITS	YEAR TO DATE	% OF ODCM LIMIT
GAMMA	10.0	mrad	7.44E-03	7.44E-02
BETA	20.0	mrad	2.37E-02	1.18E-01

TABLE 2-6BB
VOGTLE ELECTRIC GENERATING PLANT
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
AIR DOSE DUE TO NOBLE GAS RELEASES
JULY, 1995 THROUGH DECEMBER, 1995

UNIT 2

CUMMULATIVE DOSE PER QUARTER

TYPE OF RADIATION	ODCM LIMIT	UNITS	QUARTER 3	% OF ODCM LIMIT	QUARTER 4	% OF ODCM LIMIT
GAMMA	5.0	mrad	2.64E-05	5.29E-04	5.13E-05	8.26E-04
BETA	10.0	mrad	2.32E-05	2.32E-04	8.36E-05	8.36E-04

CUMULATIVE DOSES PER YEAR (YEAR TO DATE)

TYPE OF RADIATION	ODCM LIMIT	UNITS	YEAR TO DATE	% OF ODCM LIMIT
GAMMA	10.0	mrad	7.51E-03	7.51E-02
BETA	20.0	mrad	2.38E-02	1.19E-01

TABLE 2-7A
VOGTLE ELECTRIC GENERATING PLANT
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
INDIVIDUAL DOSES DUE TO RADIOIODINE, TRITIUM
JANUARY, 1995 THROUGH JUNE, 1995

UNIT 1

CUMULATIVE DOSE PER QUARTER

ORGAN	ODCM LIMIT	UNITS	QUARTER 1	% OF ODCM LIMIT	QUARTER 2	% OF ODCM LIMIT
Bone	*7.5*	mrem	1.21E-08	1.61E-07	2.43E-08	3.25E-07
Liver	*7.5*	mrem	2.95E-04	3.93E-03	3.06E-04	4.08E-03
T. Body	*7.5*	mrem	2.95E-04	3.93E-03	3.06E-04	4.08E-03
Thyroid	*7.5*	mrem	2.96E-04	3.95E-03	3.08E-04	4.10E-03
Kidney	*7.5*	mrem	2.95E-04	3.93E-03	3.06E-04	4.08E-03
Lung	*7.5*	mrem	2.95E-04	3.93E-03	3.06E-04	4.08E-03
GI-LLI	*7.5*	mrem	2.95E-04	3.93E-03	3.06E-04	4.08E-03

CUMULATIVE DOSE PER YEAR

ORGAN	*ODCM LIMIT*	*UNITS*	*YEAR TO DATE*	*% of ODCM LIMIT*
Bone	*15.0*	mrem	3.64E-08	2.43E-07
Liver	*15.0*	mrem	6.01E-04	4.00E-03
T. Body	*15.0*	mrem	6.01E-04	4.00E-03
Thyroid	*15.0*	mrem	6.04E-04	4.02E-03
Kidney	*15.0*	mrem	6.01E-04	4.00E-03
Lung	*15.0*	mrem	6.01E-04	4.00E-03
GI-LLI	*15.0*	mrem	6.01E-04	4.00E-03

TABLE 2-7AA
VOGTLE ELECTRIC GENERATING PLANT
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
INDIVIDUAL DOSES DUE TO RADIOIODINE, TRITIUM
JULY, 1995 THROUGH DECEMBER, 1995

UNIT 1

CUMULATIVE DOSE PER QUARTER

ORGAN	ODCM LIMIT	UNITS	QUARTER 3	% OF ODCM LIMIT	QUARTER 4	% OF ODCM LIMIT
Bone	*7.5*	mrem	2.09E-09	2.79E-08	3.00E-08	4.00E-07
Liver	*7.5*	mrem	1.43E-04	1.91E-03	2.37E-04	3.16E-03
T. Body	*7.5*	mrem	1.43E-04	1.91E-03	2.37E-04	3.16E-03
Thyroid	*7.5*	mrem	1.44E-04	1.91E-03	2.37E-04	3.16E-03
Kidney	*7.5*	mrem	1.43E-04	1.91E-03	2.37E-04	3.16E-03
Lung	*7.5*	mrem	1.43E-04	1.91E-03	2.37E-04	3.16E-03
GI-LLI	*7.5*	mrem	1.43E-04	1.91E-03	2.37E-04	3.16E-03

CUMULATIVE DOSE PER YEAR

ORGAN	*ODCM LIMIT*	*UNITS*	*YEAR TO DATE*	*% of ODCM LIMIT*
Bone	*15.0*	mrem	6.85E-08	4.57E-07
Liver	*15.0*	mrem	9.81E-04	6.54E-03
T. Body	*15.0*	mrem	9.81E-04	6.54E-03
Thyroid	*15.0*	mrem	9.84E-04	6.56E-03
Kidney	*15.0*	mrem	9.81E-04	6.54E-03
Lung	*15.0*	mrem	9.81E-04	6.54E-03
GI-LLI	*15.0*	mrem	9.81E-04	6.54E-03

TABLE 2-7B
VOGTLE ELECTRIC GENERATING PLANT
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
INDIVIDUAL DOSES DUE TO RADIOIODINE, TRITIUM
JANUARY, 1995 THROUGH JUNE, 1995

UNIT 2

CUMULATIVE DOSE PER QUARTER

ORGAN	ODCM LIMIT	UNITS	QUARTER 1	% OF ODCM LIMIT	QUARTER 2	% OF ODCM LIMIT
Bone	7.5	mrem	1.37E-05	1.82E-04	1.35E-08	1.80E-07
Liver	7.5	mrem	5.43E-05	7.24E-04	1.74E-05	2.32E-04
T. Body	7.5	mrem	5.42E-05	7.23E-04	1.74E-05	2.32E-04
Thyroid	7.5	mrem	1.11E-04	1.48E-03	1.77E-05	2.36E-04
Kidney	7.5	mrem	5.44E-05	7.25E-04	1.74E-05	2.32E-04
Lung	7.5	mrem	5.80E-05	7.73E-04	1.74E-05	2.32E-04
GI-LLI	7.5	mrem	5.42E-05	7.23E-04	1.74E-05	2.32E-04

CUMULATIVE DOSE PER YEAR

ORGAN	ODCM LIMIT	UNITS	YEAR TO DATE	% of ODCM LIMIT
Bone	15.0	mrem	1.37E-05	9.13E-05
Liver	15.0	mrem	7.17E-05	4.78E-04
T. Body	15.0	mrem	7.16E-05	4.77E-04
Thyroid	15.0	mrem	1.29E-04	8.59E-04
Kidney	15.0	mrem	7.18E-05	4.79E-04
Lung	15.0	mrem	7.53E-05	5.02E-04
GI-LLI	15.0	mrem	7.16E-05	4.77E-04

TABLE 2-7BB
VOGTLE ELECTRIC GENERATING PLANT
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
INDIVIDUAL DOSES DUE TO RADIOIODINE, TRITIUM
JULY, 1995 THROUGH DECEMBER, 1995

UNIT 2

CUMULATIVE DOSE PER QUARTER

ORGAN	ODCM LIMIT	UNITS	QUARTER 3	% OF ODCM LIMIT	QUARTER 4	% OF ODCM LIMIT
Bone	*7.5*	mrem	2.01E-08	2.68E-07	1.91E-07	2.54E-06
Liver	*7.5*	mrem	1.06E-04	1.41E-03	1.62E-04	2.16E-03
T. Body	*7.5*	mrem	1.06E-04	1.41E-03	1.62E-04	2.16E-03
Thyroid	*7.5*	mrem	1.07E-04	1.43E-03	1.62E-04	2.16E-03
Kidney	*7.5*	mrem	1.06E-04	1.41E-03	1.62E-04	2.16E-03
Lung	*7.5*	mrem	1.06E-04	1.41E-03	1.62E-04	2.16E-03
GI-LLI	*7.5*	mrem	1.06E-04	1.41E-03	1.62E-04	2.16E-03

CUMULATIVE DOSE PER YEAR

ORGAN	*ODCM LIMIT*	*UNITS*	*YEAR TO DATE*	*% of ODCM LIMIT*
Bone	*15.0*	mrem	1.39E-05	9.27E-05
Liver	*15.0*	mrem	3.39E-04	2.26E-03
T. Body	*15.0*	mrem	3.39E-04	2.26E-03
Thyroid	*15.0*	mrem	3.98E-04	2.65E-03
Kidney	*15.0*	mrem	3.39E-04	2.26E-03
Lung	*15.0*	mrem	3.43E-04	2.29E-03
GI-LLI	*15.0*	mrem	3.39E-04	2.26E-03

TABLE 2-8

MINIMUM DETECTABLE CONCENTRATIONS - GASEOUS SAMPLE ANALYSES

VOGTLE ELECTRIC GENERATING PLANT

JANUARY, 1995 THROUGH DECEMBER, 1995

The values in this table represent a priori Minimum Detectable Concentration (MDC) which are typically achieved in laboratory analyses of gaseous radwaste samples.

RADIONUCLIDE	MDC	UNITS
Kr-87	1.82E-08	uCi/cc
Kr-88	2.53E-08	uCi/cc
Xe-133	2.05E-08	uCi/cc
Xe-133m	8.63E-08	uCi/cc
Xe-135	7.12E-08	uCi/cc
Xe-138	1.05E-07	uCi/cc
I-131	7.93E-15*	uCi/cc
Mn-54	3.94E-14*	uCi/cc
Fe-59	2.45E-14*	uCi/cc
Co-58	1.39E-14*	uCi/cc
Co-60	1.75E-14*	uCi/cc
Zn-65	2.82E-14*	uCi/cc
Mo-99	9.57E-14*	uCi/cc
Cs-134	1.12E-14*	uCi/cc
Cs-137	8.71E-15*	uCi/cc
Ce-141	8.62E-15*	uCi/cc
Ce-144	2.77E-14*	uCi/cc
Sr-89	1.00E-13	uCi/cc
Sr-90	1.00E-13	uCi/cc
H-3	9.00E-08	uCi/cc
Gross Alpha	1.00E-13	uCi/cc

* **Based on an estimated sample volume of 5.7E-08 cc's.**

3.0 Solid Waste

3.1 Regulatory Limits/ODCM

The ODCM Limits presented in this section are for Unit 1 and Unit 2 and are stated in part.

3.1.1 Use of Solid Radioactive Waste System

10.2.1 Process Control Program

Radioactive wastes shall be solidified or dewatered in accordance with the Process Control Program to meet shipping and transportation requirements during the transit, and disposal site requirements when received at the disposal site.

3.1.2 Reporting Requirements

6.8.1.4

The Annual Radioactive Effluent Release Report covering the operation of the units during the previous calendar year shall be submitted before May 1 of each year. The report shall include a summary of the quantities of radioactive liquid and gaseous effluents and solid waste released from the unit. The material provided shall be (1) consistent with the objectives outlined in the ODCM and PCP and (2) in conformance with 10 CFR 50.36a and Section IV.B.1 of Appendix I to 10 CFR, Part 50.

3.1.3 Process Control Program (PCP)

6.12.2

Licensee - initiated changes to the PCP

Shall be submitted to the Commission in the Radioactive Effluent Release Report for the period in which the change(s) was made.

There were no changes to the PCP in 1995.

3.2 Solid Waste Data

Regulatory Guide 1.21, Table 3 is found in this report as Table 3-1.

4.0 Changes to the Vogtle Electric Generating Plant ODCM

6.13.2

There were no changes to the Vogtle Electric Generating Plant ODCM for the period January 1, 1995 through December 31, 1995.

4.0 of ODCM

The Radiological Environmental Monitoring Program shall be conducted as specified in ODCM 4.1.1 and 4.1.2.

Table Notation (1) states in part:

"It is recognized that, at times, it may not be possible or practicable to continue to obtain samples of the media of choice at the most desired location or time. In these instances, suitable alternative media and locations may be chosen for the particular pathway in question and appropriate substitutions, if available, will be made within 30 days in the Radiological Environmental Monitoring Program given in the ODCM."

Pursuant to specification 6.13, submit in the next Radioactive Effluent Release Report documentation for a change in the ODCM including a revised figure(s) and Table for the ODCM reflecting the new location(s), if any, with supporting information identifying the cause of the unavailability of samples for the pathway and justifying the selection of the new location(s) for obtaining samples, or the unavailability of suitable new locations.

4.1.2 of ODCM states in part:

"A Land Use Census shall be conducted . . . . ."

The Action Statement for this requirement states in part:

a. " With a Land Use Census identifying a location(s) that yields a calculated dose or dose commitment greater than the value currently being calculated in ODCM 4.12.1 pursuant to specification 6.13. Identify the new location(s) in the next Annual Radioactive Effluent Release Report ".

4.1 Changes in the Radiological Environmental Monitoring Program

For this reporting period, there has been no changes to the Radiological Environmental Monitoring Program.

5.0 Doses to Members of the Public Inside the Site Boundary

6.8.1.4 states in part:

"This same report shall also include assessment of the radiation doses from radioactive liquid and gaseous effluents to MEMBERS OF THE PUBLIC due to their activities inside the Site Boundary during the report period. All assumptions used in making these assessments, i.e., specific activity, exposure time, and location shall be included in these reports".

The locations of concern within the site boundary are the Visitors Center and Plant Wilson. The activities at the Visitor Center consist of occasional attendance at meetings and/or short visits for informational purposes. The activity at Plant Wilson in the past has consisted of regular employment. However, during 1995, Plant Wilson was converted to a VEGP facility. In future effluent reports Plant Wilson will not be a location for doses to members to the public, but doses were calculated for the entire year 1995 to be in conformance with the ODCM.

There will be no radiation dose at these locations due to radioactive liquid effluents. Delineated in Table 4-1 for each of these locations are the values of the basic data assumed in the dose assessment due to radioactive gaseous effluents. Listed in this table are distances and directions from a point midway between the center of Unit 1 and the Unit 2 reactors, the dispersion and deposition factors for any releases from the plant vent (mixed mode) and from the turbine building (ground level), and the estimated maximum occupancy factor for an individual and the assumed age group of this individual.

The source term is not listed in Table 4-1 . The source term is listed in Tables 2-3A, 2-3AA, 2-3B, and 2-3BB for the mixed mode releases. Similarly, it is listed in Tables 2-4A, 2-4AA, 2-4B, and 2-4BB for the ground level releases . The tritium releases in units of curies were as follows:

QUARTER	1	2	3	4
Mixed Mode	7.31E+01	7.13E+01	5.50E+01	8.71E+01
Ground Mode	2.06E-01	0.00E+00	6.00E-03	0.00E+00

The maximum doses in units of mrem accumulated by an individual MEMBER OF THE PUBLIC due to their activities inside the site boundary during the reporting period were assessed to be as follows:

VISITOR CENTER

	Quarter 1 and 2	Quarter 3 and 4
Total Body (Direct Radiation from Plume)	3.46E-06	9.87E-08

PLANT WILSON

	Quarter 1 and 2	Quarter 3 and 4
Total Body (Direct Radiation from Plume)	4.24E-04	1.21E-05

VISITOR CENTER

	Quarter 1	Quarter 2	Quarter 3	Quarter 4
Maximum Organ (Thyroid) (Inhalation Ground Plane)	6.26E-06	8.31E-07	6.40E-07	1.02E-06

PLANT WILSON

	Quarter 1	Quarter 2	Quarter 3	Quarter 4
Maximum Organ (Thyroid) (Inhalation Ground Plane)	6.82E-04	1.09E-04	8.42E-05	1.34E-05

TABLE 3-1

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT (YEAR)

SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

JANUARY 1, 1995 THROUGH JUNE 30, 1995

A. SOLID WASTE SHIPPED OFFSITE FOR BURIAL OR DISPOSAL (Not Irradiated Fuel)

1. Type of waste	Unit	6-month Period	Est. Total Error, %
a. Spent resins, filter sludges,	m3	2.349E+01	
evaporator bottoms, etc.	Ci	1.047E+02	1.0E+01
b. Dry waste, contaminated	m3	5.745E+01	
compressible equip, etc.	Ci	1.402E+01	4.0E+01
c. Irradiated components, control	m3		
rods, etc.	Ci	NONE	NONE
d. Other (describe)	m3		
	Ci	NONE	NONE

2. Estimate of major nuclide composition (by type of waste).

a.	Fe-55	%	6.576E+00
	Co-60	%	2.201E+01
	Ni-63	%	5.408E+01
	All others	%	1.733E+01
b.	Fe-55	%	5.347E+01
	Co-58	%	1.427E+01
	Ni-63	%	8.882E+00
	All others	%	2.338E+01
c.	N/A	%	N/A
	N/A	%	N/A
	N/A	%	N/A
d.	N/A	%	N/A
	N/A	%	N/A
	N/A	%	N/A

3. Solid Waste Disposition

Number of Shipments	Mode of Transportation	Destination
4	Tractor/Trailer/Shielded Cask	Chem-Nuclear Systems, Inc. Barnwell, S.C.
13	Tractor/Trailer	Scientific Ecology Group, Oak Ridge TN.
8	Tractor/Trailer	American Ecology Group, Oak Ridge TN.
1	Tractor/Trailer/Shielded Cask	Scientific Ecology Group, Oak Ridge TN.

B. IRRADIATED FUEL SHIPMENTS (Dispostion)

Number of Shipments	Mode of Transportation	Destination
None	None	None

ADDITIONAL INFORMATION REQUIRED BY TECH SPECS:

Shipment No.	Waste Class	Type Container	Shipping Class	Solidification Agent
RWS-95-001	A - Stable	Type A	LSA	NONE
RWS-95-002	A - Stable	Type A	LSA	NONE
RWS-95-003	B - Stable	Type A	LSA	NONE
RWS-95-004	A - Stable	Type A	LSA	NONE
RVRS-95-001	A - Unstable	Strong Tight	LQ	NONE
RVRS-95-002	A - Unstable	Strong Tight	LQ	NONE
RVRS-95-003	A - Unstable	Strong Tight	LSA	NONE
RVRS-95-004	A - Unstable	Strong Tight	LQ	NONE
RVRS-95-005	A - Unstable	Strong Tight	LSA	NONE
RVRS-95-006	A - Unstable	Strong Tight	LQ	NONE
RVRS-95-007	A - Unstable	Strong Tight	LQ	NONE
RVRS-95-008	A - Unstable	Strong Tight	LSA	NONE
RVRS-95-009	A - Unstable	Strong Tight	LSA	NONE
RVRS-95-010	A - Unstable	Strong Tight	LSA	NONE
RVRS-95-011	A - Unstable	Strong Tight	LQ	NONE
RVRS-95-012	A - Unstable	Strong Tight	LSA	NONE
RVRS-95-013	A - Unstable	Strong Tight	LSA	NONE
RVRS-95-014	A - Unstable	Strong Tight	LSA	NONE
RVRS-95-015	A - Unstable	Strong Tight	D.O.T. EXEMPT	NONE
RVRS-95-016	A - Unstable	Strong Tight	D.O.T. EXEMPT	NONE
RVRS-95-017	A - Unstable	Strong Tight	D.O.T. EXEMPT	NONE
RVRS-95-018	A - Unstable	Strong Tight	D.O.T. EXEMPT	NONE
RVRS-95-019	A - Unstable	Strong Tight	D.O.T. EXEMPT	NONE
RVRS-95-020	A - Unstable	Strong Tight	D.O.T. EXEMPT	NONE
RVRS-95-021	A - Unstable	Strong Tight	D.O.T. EXEMPT	NONE
RVRS-95-022	A - Unstable	Strong Tight	D.O.T. EXEMPT	NONE

TABLE 3-1

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT (YEAR)

SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

JULY 1, 1995 THROUGH DECEMBER 31, 1995.

A. SOLID WASTE SHIPPED OFFSITE FOR BURIAL OR DISPOSAL (Not Irradiated Fuel)

1. Type of waste	Unit	6-month Period	Est. Total Error, %
a. Spent resins, filter sludges,	m3	4.936E+00	
evaporator bottoms, etc.	Ci	4.173E+01	1.0E+01
b. Dry compressible waste,	m3	6.626E+00	
contaminated equip, etc.	Ci	1.337E-01	4.0E+01
c. Irradiated components, control	m3		
rods, etc.	Ci	NONE	NONE
d. Other (describe)	m3		
	Ci	NONE	NONE

2. Estimate of major nuclide composition (by type of waste).

a.	Cs-137	%	1.623E+01
	Co-60	%	1.757E+01
	Ni-63	%	4.318E+01
	All others	%	2.302E+01
b.	Fe-55	%	5.327E+01
	Co-58	%	1.405E+01
	Ni-63	%	8.984E+00
	All others	%	2.371E+01
c.	N/A	%	N/A
	N/A	%	N/A
	N/A	%	N/A
d.	N/A	%	N/A
	N/A	%	N/A
	N/A	%	N/A

3. Solid Waste Disposition

Number of Shipments	Mode of Transportation	Destination
1	Tractor/Trailer/Shielded Cask	Chem-Nuclear Systems, Inc. Barnwell, S.C.
3	Tractor/Trailer	Scientific Ecology Group, Oak Ridge TN.
1	Tractor/Trailer	American Ecology, Oak Ridge TN.

B. IRRADIATED FUEL SHIPMENTS (Dispostion)

Number of Shipments	Mode of Transportation	Destination
None	None	None

ADDITIONAL INFORMATION REQUIRED BY TECH SPECS:

Shipment No.	Waste Class	Type Container	Shipping Class	Solidification Agent
RWS-95-005	B - Stable	Type A	LSA	NONE
RVRS-95-023	A - Unstable	Strong Tight	D.O.T. EXEMPT	NONE
RVRS-95-024	A - Unstable	Strong Tight	D.O.T. EXEMPT	NONE
RVRS-95-025	A - Unstable	Strong Tight	LQ	NONE
RVRS-95-026	A - Unstable	Strong Tight	LSA	NONE

Table 4-1
Vogtle Electric Generating Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 1995
DOSE TO A MEMBER OF THE PUBLIC
DUE TO ACTIVITIES INSIDE THE SITE BOUNDARY
Starting: 01-Jan-1995 Ending: 31-Dec-1995

Location Name		Visitor Center	Plant Wilson
Distance (meters)		4.47e+02	1420
Sector		SE	ESE
X/Q(sec/m3)	(1)	5.93E-06	9.45E-07
Depleted X/Q(sec/m3)	(2)	5.58E-06	8.34E-07
D/Q(m2)	(1)	2.28E-08	4.20E-09
X/Q(Sec/m3)	(2)	7.12E-07	1.76E-07
Depleted X/Q(sec/m3)	(2)	6.74E-07	1.59E-07
D/Q(m2)	(2)	5.77E-09	2.07E-09
Occupancy Factor		0.00046(4hr/yr)	0.228(2000hr/yr)
Age Group		Child	Adult

VISITOR CENTER

	UNITS	QTR 1	QTR2	Total Q1 & Q2	QTR3	QTR4	Total Q3 & Q4
Total Body Dose	mrem	3.40E-06	6.40E-08	3.46E-06	3.78E-08	6.08E-08	9.87E-08
Organ							
Bone	mrem	5.25E-06	6.38E-06	5.32E-06	3.76E-08	5.15E-08	8.91E-08
Liver	mrem	6.10E-06	8.26E-07	6.93E-06	6.37E-07	1.02E-06	1.66E-06
Tbody	mrem	6.10E-06	8.26E-07	6.93E-06	6.37E-07	1.02E-06	1.66E-06
Thyroid	mrem	6.25E-06	8.31E-07	7.08E-06	6.40E-07	1.02E-06	1.66E-06
Kidney	mrem	6.10E-06	8.26E-07	6.94E-06	6.37E-07	1.02E-06	1.66E-06
Lung	mrem	6.11E-06	8.26E-07	6.94E-06	6.37E-07	1.02E-06	1.66E-06
GI-LLI	mrem	6.10E-06	8.26E-07	6.93E-06	6.37E-07	1.02E-06	1.66E-06

PLANT WILSON

	UNITS	QTR 1	QTR2	Total Q1 & Q2	QTR3	QTR4	Total Q3 & Q4
Total Body Dose	mrem	4.17E-04	7.84E-06	4.24E-04	4.64E-06	7.45E-06	1.21E-05
Organ							
Bone	mrem	5.57E-04	7.87E-06	5.65E-04	4.64E-06	6.38E-06	1.10E-05
Liver	mrem	6.69E-04	1.09E-04	7.77E-04	8.40E-05	1.34E-04	2.18E-04
Tbody	mrem	6.69E-04	1.09E-04	7.77E-04	8.40E-05	1.34E-04	2.18E-04
Thyroid	mrem	6.81E-04	1.09E-04	7.90E-04	8.42E-05	1.34E-04	2.18E-04
Kidney	mrem	6.69E-04	1.09E-04	7.77E-04	8.40E-05	1.34E-04	2.18E-04
Lung	mrem	6.70E-04	1.09E-04	7.78E-04	8.40E-05	1.34E-04	2.18E-04
GI-LLI	mrem	6.69E-04	1.09E-04	7.77E-04	8.40E-05	1.34E-04	2.18E-04

6.0 Major Changes to Liquid, Gaseous, or Solid Radwaste Treatment Systems

6.8.1.4 states in part:

The Annual Radioactive Effluent Release Report shall include " . . . any major change to liquid, gaseous, or solid radwaste treatment systems pursuant to Specification 6.14 ".

Gaseous Radwaste System

There were no major changes to the gaseous radwaste system in 1995.

Solid Radwaste System

There were no major changes to the solid radwaste system in 1995.

Liquid Radwaste System

There were no major changes to the Liquid Radwaste Treatment System in 1995.

7.0 Meteorological Data

6.8.1.4 states in part:

The Annual Radioactive Effluent Release Report to be submitted by May 1 of each year shall include an annual summary of hourly meteorological data collected over the previous year. This annual summary may be either in the form of an hour-by-hour listing on magnetic tape of wind speed, wind direction, atmosphere stability, and precipitation (if measured), or in the form of joint frequency distributions of wind speed, wind direction and atmospheric stability.

In lieu of submission with Annual Radioactive Effluent Release Report, the licensee has retained this summary of required meteorological data on site in a file that shall be provided to the NRC upon request.

8.0 Inoperable Liquid or Gaseous Effluent Monitoring Instrumentation

6.8.1.4 states in part that:

The Annual Radioactive Effluent Release Report shall also include the following:

"....an explanation as to why the inoperability of liquid or gaseous effluent monitoring instrumentation was not corrected within the specified time requirement...."

All inoperability of liquid and gaseous effluent monitors were corrected within the specified time for this reporting period.

9.0 Tanks Exceeding Curie Content Limits

The Annual Radioactive Effluent Release Reports shall also include the following:

"....and description of the events leading to liquid holdup tanks or gas storage tanks exceeding the limits of Technical Specifications 3.11.1.4 or 3.11.2.6, respectively . . . .".

There were no temporary liquid hold up tanks for radioactive liquids or gas storage tanks during this reporting period.