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C. K. McCoy
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Georgia Power
the southern electric system

February 25, 1992

ELV-03459
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Docket Nos. 50-424
50-425

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

Gentlemen:

VOGTLE ELECTRIC GENERATING PLANT
SEMIANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

In accordance with requirements of the Vogtle Electric Generating Plant Unit 1 and Unit 2 Technical Specifications, Section 6.8.1.4, please find enclosed the Semiannual Radioactive Effluent Release Report for July 1, 1991 through December 31, 1991. Six copies are provided for your use. Two copies of this report are being provided to the NRC Region II office.

Sincerely,

C. K. McCoy

CKM/DMH/JLL/gmb

Enclosure

xc: Georgia Power Company
Mr. W. B. Shipman
Mr. M. Sheibani
Mr. W. R. Woodall, Jr.
NORMS

U. S. Nuclear Regulatory Commission
Mr. S. D. Ebneter, Regional Administrator (w/2 encl.)
Mr. D. S. Hood, Licensing Project Manager, Vogtle
Mr. B. R. Bonser, Senior Resident Inspector, Vogtle

State of Georgia
Mr. J. L. Setser, DNR

American Nuclear Insurers
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IE48

GEORGIA POWER COMPANY

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

SEMIANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

FOR

JULY 1, 1991 TO DECEMBER 31, 1991

VOGTLE ELECTRIC GENERATING PLANT

SEMIANNUAL REPORT

PLANT RADIOACTIVE EFFLUENT RELEASES

VOGTLE ELECTRIC GENERATING PLANT

SEMIANNUAL REPORT

PLANT RADIOACTIVE EFFLUENT RELEASES

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VOGTLE ELECTRIC GENERATING PLANT

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RADIOACTIVE EFFLUENT RELEASE REPORT

TABLE	LIST OF TABLES	PAGE

1.0 Liquid Effluents

1.1 Regulatory Limits

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 2.0E-4 microcuries/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 Maximum Permissible Concentration (MPC)

MPC values used in determing 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.

For dissolved or entrained noble gases in liquid radwaste, the MPC is 2E-04 uCi/ml total activity.

For gross alpha in liquid radwaste, the MPC is obtained from 10 CFR Part 20, Appendix B, Note 2.d as 3.0E-08 uCi/ml.

Further, for all the above radionuclides or categories of radioactivity, the overall MPC fraction is determined in accordance with 10 CFR Part 20, Appendix B, Note 1.

The method whereby the MPC fraction is used to determine release rates and liquid radwaste effluent radiation monitor setpoints is described in Subsection 1.4 of this report.

1.3 Measurements and Approximations of Total Radioactivity

Prior to release of any tank containing liquid radwaste, and following the required recirculations, samples are collected and analyzed in accordance with Technical Specification Table 4.11. A sample from each tank planned for release is analyzed for principal gamma emitters, I-131, and dissolved and entrained noble gases by gamma spectrometry. Monthly and quarterly composites are prepared for analysis by extracting aliquots from each sample taken from 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 spectrometry. This consists of four high purity germanium detectors with resolution of 1.80 keV or lower. The detectors are shielded by four inches of lead. A liquid radwaste sample is poured into a graduated cylinder to measure out one liter of sample which is then poured into a bottle or into a 1 liter marinelli in preparation for a 2000-4000 second count. A peak search of the resulting gamma ray spectrum is performed by the computer system. Energy and net count data of all significant peaks are determined, and a quantative reduction or MDA calculation is

performed. The procedure ensures that the LLD's are met for the nuclides specified in Table Notation 3 of Technical Specification Table 4.11-1: Mn-54, Fe-59, Co-58, Co-60, Zn-65, Mo-99, Cs-134, Cs-137, Ce-141 and Ce-144. The quantative calculations, corrections for counting time, decay time, sample volume, sample geometry, detector efficiency, baseline counts, branching ratio, and MDA calculations, are made based on the counts at the location on 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, performed offsite.

The radionuclide concentrations determined by gamma spectroscopic analysis of a sample taken from a tank planned for release and the most current sample analysis results available for tritium, gross alpha, Sr-89, Sr-90 and Fe-55 are used along with the corresponding MPC values to determine a MPC fraction for the tank planned for release. This MPC fraction is then used, with appropriate safety factors, along with the minimum assured dilution stream flow to calculate maximum permissible release rate and a liquid effluent monitor setpoint. The monitor setpoint is calculated to assure that the limits of Technical Specification 3.11.1.1 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 included on the computer screen. If the release is permissible, it is approved by the Chemistry Foreman on duty and sent to the Operations Department for approval and processing. When the release is completed, the necessary data from the release (ex., release volume) is 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 and 2B are found in this report as Table 1-2a and Table 1-3a for Unit 1, Tables 1-2b and 1-3b for Unit 2.

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.

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

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

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

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

Tank volumes and system flowrates	20%
Sampling and statistical error	10%
Counting Equipment calibration	10%
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 for Unit 1 and 1-4b for Unit 2.

1.6 Abnormal Releases

1.6.1 There was no unplanned release for this reporting period.

1.7 River Flow

The average flow rate of the Savannah River for this Semiannual Effluent Report period was obtained from the Clark Hill Dam Corp of Engineers Office. The average flow rate is 6009 cubic feet/sec.

Table 1-2a

Georgia Power Company

Vogtle Electric Generating Plant U-1

SEMIANNUAL SUMMATION OF ALL RELEASES BY QUARTER
ALL LIQUID EFFLUENTS
Unit: 1
Starting : 1-Jul-1991 Ending : 31-Dec-1991

TYPE OF EFFLUENT	UNITS	QUARTER 3	QUARTER 4	EST. TOT ERROR %
A. FISSION & ACTIVATION PRODUCTS				
1. TOTAL RELEASE (NOT INCLUDING TRITIUM, GASES, ALPHA)	CURIES	2.942E-02	6.850E-02	40
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ML	3.768E-08	5.42E-08	
3. PERCENT OF APPLICABLE LIMIT	%	N/A	N/A	
B. TRITIUM				
1. TOTAL RELEASE	CURIES	2.247E+02	9.583E+01	40
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ML	2.878E-04	7.583E-05	
3. PERCENT OF APPLICABLE LIMIT	%	N/A	N/A	
C. DISSOLVED AND ENTRAINED GASES				
1. TOTAL RELEASE	CURIES	4.515E-03	4.615E-04	50
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ML	5.783E-09	3.652E-10	
3. PERCENT OF APPLICABLE LIMIT	%	N/A	N/A	
D. GROSS ALPHA RADIOACTIVITY				
1. TOTAL RELEASE	CURIES	* 0E0	*0E0	45
E. WASTE VOL RELEASED(PRE-DILUTION)	LIT	1.442E+06	1.482E+06	20
F. VOLUME OF DILUTION WATER USED	LIT	7.793E+08	1.262E+09	20

* Zeroes in thir table indicate that no radioactivity was present above detectable levels. See Table 1-5 for typical LLD for liquid sample analyses.

Table 1-2b

Georgia Power Company

Vogtle Electric Generating Plant U-2

SEMIANNUAL SUMMATION OF ALL RELEASES BY QUARTER
ALL LIQUID EFFLUENTS
Unit: 2
Starting : 1-Jul-1991 Ending : 31-Dec-1991

TYPE OF EFFLUENT	UNITS	QUARTER 3	QUARTER 4	EST. TOT ERROR %
A. FISSION & ACTIVATION PRODUCTS				
1. TOTAL RELEASE (NOT INCLUDING TRITIUM, GASES, ALPHA)	CURIES	5.169E-03	1.311E-02	40
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ML	3.787E-08	2.944E-08	
3. PERCENT OF APPLICABLE LIMIT	%	N/A	N/A	
B. TRITIUM				
1. TOTAL RELEASE	CURIES	6.862E+01	1.055E+02	40
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ML	5.003E-04	2.369E-04	
3. PERCENT OF APPLICABLE LIMIT	%	N/A	N/A	
C. DISSOLVED AND ENTRAINED GASES				
1. TOTAL RELEASE	CURIES	8.993E-05	2.740E-04	50
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ML	6.589E-10	6.153E-10	
3. PERCENT OF APPLICABLE LIMIT	%	N/A	N/A	
D. GROSS ALPHA RADIOACTIVITY				
1. TOTAL RELEASE	CURIES	* 0E0	*0E0	45
E. WASTE VOL RELEASED(PRE-DILUTION)	LIT	2.938E+05	5.693E+05	20
F. VOLUME OF DILUTION WATER USED	LIT	1.362E+08	4.447E+08	20

* Zeroes in this table indicate that no radioactivity was present above detectable levels. See Table 1-5 for typical LLD for liquid sample analyses.

Table 1-2c

Georgia Power Company

Vogtle Electric Generating Plant

SEMIANNUAL SUMMATION OF ALL RELEASES BY QUARTER
ALL LIQUID EFFLUENTS
SITE
Starting : 1-Jul-1991 Ending : 31-Dec-1991

TYPE OF EFFLUENT	UNITS	QUARTER 3	QUARTER 4	EST. TOT ERROR %
A. FISSION & ACTIVATION PRODUCTS				
1. TOTAL RELEASE (NOT INCLUDING TRITIUM, GASES, ALPHA)	CURIES	3.459E-02	8.161E-02	40
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ML	3.771E-08	4.776E-08	
3. PERCENT OF APPLICABLE LIMIT	%	N/A	N/A	
B. TRITIUM				
1. TOTAL RELEASE	CURIES	2.933E+02	2.013E+02	40
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ML	3.197E-04	1.178E-04	
3. PERCENT OF APPLICABLE LIMIT	%	N/A	N/A	
C. DISSOLVED AND ENTRAINED GASES				
1. TOTAL RELEASE	CURIES	4.605E-03	7.355E-04	50
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ML	5.020E-09	4.304E-10	
3. PERCENT OF APPLICABLE LIMIT	%	N/A	N/A	
D. GROSS ALPHA RADIOACTIVITY				
1. TOTAL RELEASE	CURIES	* 0E0	*0E0	45
E. WASTE VOL RELEASED(PRE-DILUTION)	LIT	1.736E+06	2.051E+06	20
F. VOLUME OF DILUTION WATER USED	LIT	9.155E+08	1.707E+09	20

* Zeroes in this table indicate that no radioactivity was present above detectable levels. See Table 1-5 for typical LLD for liquid sample analyses.

Table 1-3a

REPORT CATEGORY : SEMIANNUAL LIQUID CONTINUOUS AND BATCH RELEASES
: TOTALS FOR EACH NUCLIDE RELEASED.
TYPE OF ACTIVITY : ALL RADIONUCLIDES
REPORTING PERIOD : QUARTER # 3 AND QUARTER # 4 YEAR 1991
UNIT 1

		CONTINUOUS RELEASES		BATCH RELEASES	
NUCLIDE	UNIT	QUARTER 3	QUARTER 4	QUARTER 3	QUARTER 4
CE-144	CURIES	0.00E+00	0.00E+00	0.00E+00	1.31E-04
CO-57	CURIES	0.00E+00	0.00E+00	1.43E-04	1.54E-04
CO-58	CURIES	0.00E+00	0.00E+00	3.80E-03	2.68E-02
CO-60	CURIES	0.00E+00	0.00E+00	6.32E-03	4.05E-03
CR-51	CURIES	0.00E+00	0.00E+00	5.23E-04	8.73E-03
CS-134	CURIES	0.00E+00	0.00E+00	2.32E-04	4.60E-04
CS-137	CURIES	0.00E+00	0.00E+00	2.57E-04	4.03E-04
FE-55	CURIES	0.00E+00	0.00E+00	1.40E-02	1.76E-02
FE-59	CURIES	0.00E+00	0.00E+00	2.28E-04	9.07E-04
G-ALPHA	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3	CURIES	0.00E+00	0.00E+00	2.24E+02	9.58E+01
HF-181	CURIES	0.00E+00	0.00E+00	0.00E+00	7.13E-05
I-131	CURIES	0.00E+00	0.00E+00	1.00E-03	1.15E-04
I-132	CURIES	0.00E+00	0.00E+00	1.42E-04	0.00E+00
I-133	CURIES	0.00E+00	0.00E+00	2.92E-05	0.00E+00
LA-140	CURIES	0.00E+00	0.00E+00	9.27E-06	0.00E+00
MN-54	CURIES	0.00E+00	0.00E+00	1.75E-03	1.09E-03
NA-24	CURIES	0.00E+00	0.00E+00	6.57E-06	2.24E-06
NB-95	CURIES	0.00E+00	0.00E+00	6.18E-05	1.43E-03
NB-97	CURIES	0.00E+00	0.00E+00	3.82E-05	0.00E+00
SB-122	CURIES	0.00E+00	0.00E+00	0.00E+00	4.47E-05
SB-124	CURIES	0.00E+00	0.00E+00	0.00E+00	5.51E-04
SB-125	CURIES	0.00E+00	0.00E+00	1.04E-04	4.74E-03
SN-113	CURIES	0.00E+00	0.00E+00	2.40E-05	6.18E-05
SR-89	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SR-90	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TC-99M	CURIES	0.00E+00	0.00E+00	2.22E-05	0.00E+00
TE-125M	CURIES	0.00E+00	0.00E+00	4.41E-04	3.01E-04
TE-132	CURIES	0.00E+00	0.00E+00	1.42E-04	1.57E-05
XE-131M	CURIES	0.00E+00	0.00E+00	0.00E+00	5.25E-05
XE-133	CURIES	0.00E+00	0.00E+00	4.50E-03	3.94E-04
XE-135	CURIES	0.00E+00	0.00E+00	3.86E-06	6.46E-06
ZR-95	CURIES	0.00E+00	0.00E+00	1.46E-05	7.45E-04
TOTAL FOR PERIOD	CURIES	0.00E+00	0.00E+00	2.24E+02	9.59E+01

* Zeroes in this table indicate that no radioactivity was present above detectable levels. See table 1-5 for typical LLD for liquid sample analyses.

Table 1-3b

REPORT CATEGORY : SEMIANNUAL LIQUID CONTINUOUS AND BATCH RELEASES
: TOTALS FOR EACH NUCLIDE RELEASED.
TYPE OF ACTIVITY : ALL RADIONUCLIDES
REPORTING PERIOD : QUARTER # 3 AND QUARTER # 4 YEAR 1991

UNIT 2

		CONTINUOUS RELEASES		BATCH RELEASES	
NUCLIDE	UNIT	QUARTER 3	QUARTER 4	QUARTER 3	QUARTER 4
BE-7	CURIES	0.00E+00	0.00E+00	2.76E-05	0.00E+00
CE-144	CURIES	0.00E+00	0.00E+00	0.00E+00	4.41E-05
CO-57	CURIES	0.00E+00	0.00E+00	2.44E-05	7.63E-06
CO-58	CURIES	0.00E+00	0.00E+00	1.09E-03	3.56E-03
CO-60	CURIES	0.00E+00	0.00E+00	1.24E-03	9.24E-04
CR-51	CURIES	0.00E+00	0.00E+00	0.00E+00	1.29E-03
CS-134	CURIES	0.00E+00	0.00E+00	7.51E-05	3.13E-05
CS-137	CURIES	0.00E+00	0.00E+00	7.61E-05	3.32E-05
FE-55	CURIES	0.00E+00	0.00E+00	2.20E-03	5.69E-03
FE-59	CURIES	0.00E+00	0.00E+00	0.00E+00	9.87E-05
G-ALPHA	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3	CURIES	0.00E+00	0.00E+00	6.86E+01	1.05E+02
I-131	CURIES	0.00E+00	0.00E+00	9.85E-06	3.30E-06
I-133	CURIES	0.00E+00	0.00E+00	1.98E-06	0.00E+00
KR-85M	CURIES	0.00E+00	0.00E+00	7.49E-07	0.00E+00
LA-140	CURIES	0.00E+00	0.00E+00	6.42E-06	0.00E+00
MN-54	CURIES	0.00E+00	0.00E+00	3.47E-04	2.43E-04
NA-24	CURIES	0.00E+00	0.00E+00	0.00E+00	6.95E-05
NB-95	CURIES	0.00E+00	0.00E+00	2.79E-05	2.68E-04
SB-124	CURIES	0.00E+00	0.00E+00	0.00E+00	5.04E-05
SB-125	CURIES	0.00E+00	0.00E+00	2.51E-05	6.23E-04
SN-113	CURIES	0.00E+00	0.00E+00	1.97E-06	0.00E+00
SR-89	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SR-90	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
XE-133	CURIES	0.00E+00	0.00E+00	6.64E-05	2.61E-04
XE-135	CURIES	0.00E+00	0.00E+00	2.27E-05	1.29E-05
ZR-95	CURIES	0.00E+00	0.00E+00	0.00E+00	1.53E-04
TOTAL FOR PERIOD	CURIES	0.00E+00	0.00E+00	6.86E+01	1.05E+02

* Zeroes in this table indicate that no radioactivity was present above detectable levels. See table 1-5 for typical LLD for liquid sample analyses.

Table 1-3c

REPORT CATEGORY : SEMIANNUAL LIQUID CONTINUOUS AND BATCH RELEASES
: TOTALS FOR EACH NUCLIDE RELEASED.
TYPE OF ACTIVITY : ALL RADIONUCLIDES
REPORTING PERIOD : QUARTER # 3 AND QUARTER # 4 YEAR 1991

SITE

		CONTINUOUS RELEASES		BATCH RELEASES	
NUCLIDE	UNIT	QUARTER 3	QUARTER 4	QUARTER 3	QUARTER 4
BE-7	CURIES	0.00E+00	0.00E+00	2.76E-05	0.00E+00
CE-144	CURIES	0.00E+00	0.00E+00	0.00E+00	1.75E-04
CO-57	CURIES	0.00E+00	0.00E+00	1.67E-04	1.62E-04
CO-58	CURIES	0.00E+00	0.00E+00	4.89E-03	3.04E-02
CO-60	CURIES	0.00E+00	0.00E+00	7.56E-03	4.97E-03
CR-51	CURIES	0.00E+00	0.00E+00	5.23E-04	1.00E-02
CS-134	CURIES	0.00E+00	0.00E+00	3.07E-04	4.91E-04
CS-137	CURIES	0.00E+00	0.00E+00	3.33E-04	4.36E-04
FE-55	CURIES	0.00E+00	0.00E+00	1.62E-02	2.33E-02
FE-59	CURIES	0.00E+00	0.00E+00	2.28E-04	1.00E-03
G-ALPHA	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3	CURIES	0.00E+00	0.00E+00	2.93E+02	2.01E+02
HF-181	CURIES	0.00E+00	0.00E+00	0.00E+00	7.13E-05
I-131	CURIES	0.00E+00	0.00E+00	1.00E-03	1.18E-04
I-132	CURIES	0.00E+00	0.00E+00	1.42E-04	0.00E+00
I-133	CURIES	0.00E+00	0.00E+00	3.12E-05	0.00E+00
KR-85M	CURIES	0.00E+00	0.00E+00	7.49E-07	0.00E+00
LA-140	CURIES	0.00E+00	0.00E+00	1.57E-05	0.00E+00
MN-54	CURIES	0.00E+00	0.00E+00	2.09E-03	1.33E-03
NA-24	CURIES	0.00E+00	0.00E+00	6.57E-06	7.17E-05
NB-95	CURIES	0.00E+00	0.00E+00	8.97E-05	1.70E-03
NB-97	CURIES	0.00E+00	0.00E+00	3.82E-05	0.00E+00
SB-122	CURIES	0.00E+00	0.00E+00	0.00E+00	4.47E-05
SB-124	CURIES	0.00E+00	0.00E+00	0.00E+00	6.01E-04
SB-125	CURIES	0.00E+00	0.00E+00	1.29E-04	5.36E-03
SN-113	CURIES	0.00E+00	0.00E+00	2.60E-05	6.18E-05
SR-89	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SR-90	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TC-99M	CURIES	0.00E+00	0.00E+00	2.22E-05	0.00E+00
TE-125M	CURIES	0.00E+00	0.00E+00	4.41E-04	3.01E-04
TE-132	CURIES	0.00E+00	0.00E+00	1.42E-04	1.57E-05
XE-131M	CURIES	0.00E+00	0.00E+00	0.00E+00	5.25E-05
XE-133	CURIES	0.00E+00	0.00E+00	4.57E-03	6.55E-04
XE-135	CURIES	0.00E+00	0.00E+00	6.46E-06	1.94E-05
ZR-95	CURIES	0.00E+00	0.00E+00	1.46E-05	8.98E-04
TOTAL FOR PERIOD	CURIES	0.00E+00	0.00E+00	2.93E+02	2.01E+02

* Zeroes in this table indicate that no radioactivity was present above detectable levels. See Table 1-5 for typical LLD for liquid sample analyses.

TABLE 1-4A
VOGTLE ELECTRIC GENERATING PLANT
SEMIANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
INDIVIDUAL DOSES DUE TO LIQUID RELEASES
July 1, 1991 through December 31, 1991
UNIT 1

Cumulative Dose Per Quarter

Organ	Tech Spec Limit	Units	Quarter 3	% of Tech Limit	Quarter 4	% of Tech Limit
Bone	5.0	mrem	3.06E-03	6.12E-02	6.45E-03	1.29E-02
Liver	5.0	mrem	1.06E-02	2.12E-01	1.52E-02	3.04E-01
T. Body	1.5	mrem	9.10E-03	6.07E-01	1.23E-02	8.20E-01
Thyroid	5.0	mrem	6.44E-03	1.29E-01	3.81E-03	7.62E-02
Kidney	5.0	mrem	6.49E-03	1.39E-01	7.39E-03	1.48E-01
Lung	5.0	mrem	5.86E-03	1.17E-01	1.57E-02	3.14E-01
GI-LLI	5.0	mrem	6.70E-03	1.34E-01	8.17E-03	1.63E-01

Cumulative Dose Per Year

Organ	Tech Spec Limit	Units	Year to Date	% of Tech Spec Limit
Bone	10.0	mrem	2.08E-02	2.08E-01
Liver	10.0	mrem	5.15E-02	5.15E-01
T. Body	3.0	mrem	4.18E-02	1.39E+00
Thyroid	10.0	mrem	1.66E-02	1.66E-01
Kidney	10.0	mrem	2.61E-02	2.61E-01
Lung	10.0	mrem	2.90E-02	2.90E-01
GI-LLI	10.0	mrem	2.29E-02	2.29E-01

TABLE 1-4B
VOGTLE ELECTRIC GENERATING PLANT
SEMIANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
INDIVIDUAL DOSE DUE TO LIQUID RELEASES
July 1, 1991 through December 31, 1991
UNIT 2

Cumulative Dose Per Quarter

Organ	Tech Spec Limit	Units	Quarter 3	% of Tech Limit	Quarter 4	% of Tech Limit
Bone	5.0	mrem	1.48E-03	2.96E-02	5.51E-04	1.10E-02
Liver	5.0	mrem	4.74E-03	9.48E-02	3.62E-03	7.24E-02
T. Body	1.5	mrem	4.06E-03	2.71E-01	3.37E-03	2.25E-01
Thyroid	5.0	mrem	2.08E-03	4.16E-02	2.69E-03	5.38E-02
Kidney	5.0	mrem	2.94E-03	5.88E-02	2.98E-03	5.96E-02
Lung	5.0	mrem	2.41E-03	4.82E-02	3.96E-03	7.92E-02
GI-LLI	5.0	mrem	2.45E-03	4.90E-02	3.26E-03	6.52E-02

Cumulative Dose Per Year

Organ	Tech Spec Limit	Units	Year to Date	% of Tech Spec Limit
Bone	10.0	mrem	4.91E-03	4.91E-02
Liver	10.0	mrem	2.09E-02	2.09E-01
T. Body	3.0	mrem	1.65E-02	5.51E-01
Thyroid	10.0	mrem	1.08E-02	1.08E-01
Kidney	10.0	mrem	1.33E-02	1.33E-01
Lung	10.0	mrem	1.29E-02	1.29E-01
GI-LLI	10.0	mrem	1.45E-02	1.45E-01

TABLE 1-5

LOWER LIMITS OF DETECTION - LIQUID SAMPLE ANALYSES

VOGTLE ELECTRIC GENERATING PLANT
(July 1, 1991 THROUGH December 31, 1991)

The values in this table represent apriori lower limits of detection (LLD) which are typically achieved in laboratory analyses of liquid radwaste samples.

RADIONUCLIDE	LLD	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: JULY 1, 1991 ENDING: DECEMBER 31, 1991

LIQUID RELEASES

Number of Releases:	84
Total Time For All Releases:	15832.00 minutes
Maximum Time For A Release:	632.00 minutes
Average Time For A Release:	188.48 minutes
Minimum Time For A Release:	1.00 minutes
Average Stream Flow	45.79 GPM

GASEOUS RELEASES

Number of Releases:	124.00
Total Time For All Releases:	101724.00 minutes
Maximum Time For A Release:	9958.00 minutes
Average Time For A Release:	820.35 minutes
Minimum Time For A Release:	0.00 minutes

TABLE 1-6B

GEORGIA POWER COMPANY

VOGTLE ELECTRIC GENERATING PLANT U-2

BATCH RELEASE SUMMARY OF ALL RELEASES

STARTING: JULY 1, 1991 ENDING: DECEMEBER 31, 1991

LIQUID RELEASES

Number of Releases:	35
Total Time for All Releases:	5490.00 minutes
Maximum Time For A Release:	659.00 minutes
Average Time For A Release:	156.86 minutes
Minimum Time For A Release:	18.00 minutes
Average Stream Flow:	37.91 GPM

GASEOUS RELEASES

Number of Releases:	27
Total Time For All Releases:	9172.00 minutes
Maximum Time For A Release:	1764.00 minutes
Average Time For A Release:	339.00 minutes
Minimum Time For A Release:	2.00 minutes

2.0 Gaseous Effluents

2.1 Regulatory Limits/Technical Specifications

The Technical 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 and,

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

2.1.4 Total Fuel Cycle Dose Commitment - (10CFR190)

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), and 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 release period, there were no radioactive releases through the condenser air ejector and steam packing exhauster system vents. Unless required more frequently under certain circumstances samples are collected as follows:

1. Noble gas samples are collected by grab sampling monthly.

2. Tritium samples are collected by grab sampling monthly. Since spent fuel was placed in the spent fuel pool during the first Unit 1 refueling, tritium samples are collected weekly on the Unit 1 (Common) Plant Vent.

3. Radioiodine samples are collected from the sample stream through a charcoal cartridge over a 7-day period.

4. Particulates are collected from the sample stream through a particulate filter over a 7-day period.

5. The 7-day particulate filters above are analyzed for gross alpha activity.

6. Quarterly composite samples are prepared from the particulate filters collected over the previous quarter and the quarterly composite sample is analyzed for Sr-89 and Sr-90.

Batch Waste Gas Decay Tank releases are analyzed for iodines, particulate, and noble gases before each release. In addition, the containment atmosphere is analyzed for tritium on at least 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 Technical Specification 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 follow:

2.4.1 Fission and Activitation 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 and due to radioiodines, tritium, and particulates are calculated (with computer assistance). Calculated dose rates are compared to the dose rate limits specified in 3.11.2.1a for noble gases, and 3.11.2.1b of the Technical Specifications for radioiodine, 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 Technical Specification 3.11.2.2. Current percent of the Technical Specification limits are shown on the printout for each release period. Air dose calculation methodology is presented in the ODCM.

2.4.2 Radioiodine, Tritium and Particulate Releases

Released quantities of radioiodines are determined from the weekly samples and release flow rates for the two release points. Radioiodine 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, LLD'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 radioiodine, 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 Technical Specification 3.11.2.1b.

Individual doses due to radioiodine, tritium and particulates are calculated for the critical 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 Technical Specification 3.11.2.3.

Current percent of technical specification 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, 2-2b, 2-3a, 2-3b, 2-4a and 2-4b. Data is presented on a quarterly basis as required by Regulatory Guide 1.21.

To complete table 2-2a and 2-2b, 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 applicable Technical Specification limits are not applicable because we have no curie limits for gaseous releases. Noble gases are limited as specified in Technical Specification 3.11.2.1a. The other three categories (tritium, radioiodines, and particulates) are limited as a group as specified in Technical Specification 3.11.2.1b.

Dose rates due to noble gas releases and due to radioiodine, 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 and 2-2b as curies released in each quarter.

Limits for cumulative beta and gamma air doses due to noble gases are specified in Technical Specification 3.11.2.2. Cumulative air doses are presented in Table 2-6a and 2-6b along with percent of technical specification limits.

Limits for cumulative individual doses due to radioiodine, tritium, and particulates, are specified in Technical Specification 3.11.2.3. Cumulative individual doses are presented in Table 2-7a and 2-7b along with percent of technical specification 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%
Loses from charcoal cartridges	10%
TOTAL ERROR	100%

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

Statistical error at LLD 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%

2.5.2 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 and 1-6b.

2.6 Radiological Impact Due to Gaseous Releases

Dose rates due to noble gas releases were calculated for the site in accordance with Technical Specification 3/4.11.2.1a. Dose rates due to radioiodine, tritium, and particulates in gaseous releases were calculated in accordance with Technical Specification 3/4.11.2.1b.

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 Technical Specification 3/4.11.2.3. These results are presented in Tables 2-7a and 2-7b.

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

Table 2-2a

Georgia Power Company

Vogtle Electric Generating Plant U-1

SEMIANNUAL SUMMATION OF ALL RELEASES BY QUARTER
ALL AIRBORNE EFFLUENTS
Unit: 1
Starting : 1-Jul-1991 Ending : 31-Dec-1991

TYPE OF EFFLUENT	UNITS	QUARTER 3	QUARTER 4	EST. TOT ERROR %
A. FISSION & ACTIVATION PRODUCTS				
1. TOTAL RELEASE	CURIES	1.899E+02	1.126E+01	50
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	2.389E+01	1.527E+01	
3. PERCENT OF APPLICABLE LIMIT	%	N/A	N/A	
B. RADIOIODINES				
1. TOTAL IODINE-131	CURIES	1.090E-03	8.517E-04	100
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	1.371E-04	1.071E-04	
3. PERCENT OF APPLICABLE LIMIT	%	N/A	N/A	
C. PARTICULATES				
1. PARTICULATES(HALF-LIVES>8 DAYS)	CURIES	1.439E-05	5.053E-05	90
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	1.810E-06	6.357E-06	
3. PERCENT OF APPLICABLE LIMIT	%	N/A	N/A	
4. GROSS ALPHA RADIOACTIVITY	CURIES	9.941E-07	1.584E-06	
D. TRITIUM				
1. TOTAL RELEASE	CURIES	3.290E+01	9.151+01	40
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	4.138E+00	1.151E+01	
3. PERCENT OF APPLICABLE LIMIT	%	N/A	N/A	

* Zeroes in this table indicate that no radioactivity was present above detectable levels. See Table 2-8 for typical LLD for gaseous sample analyses

Table 2-2b

Georgia Power Company

Vogtle Electric Generating Plant U-2

SEMIANNUAL SUMMATION OF ALL RELEASES BY QUARTER
ALL AIRBORNE EFFLUENTS
Unit: 2
Starting : 1-Jul-1991 Ending : 31-Dec-1991

TYPE OF EFFLUENT	UNITS	QUARTER 3	QUARTER 4	EST. TOT ERROR %
A. FISSION & ACTIVATION PRODUCTS				
1. TOTAL RELEASE	CURIES	1.760E+01	3.194E+00	50
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	2.214E+00	4.010E-01	
3. PERCENT OF APPLICABLE LIMIT	%	N/A	N/A	
B. RADIOIODINES				
1. TOTAL IODINE-131	CURIES	6.891E-06	1.269E-05	100
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	8.669E-07	1.596E-06	
3. PERCENT OF APPLICABLE LIMIT	%	N/A	N/A	
C. PARTICULATES				
1. PARTICULATES(HALF-LIVES>8 DAYS)	CURIES	0E0	1.216E-05	90
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	N/A	1.529E-06	
3. PERCENT OF APPLICABLE LIMIT	%	N/A	N/A	
4. GROSS ALPHA RADIOACTIVITY	CURIES	2.353E-07	3.445E-07	
D. TRITIUM				
1. TOTAL RELEASE	CURIES	2.480E+01	3.141E+01	40
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	3.123E+00	3.954E+00	
3. PERCENT OF APPLICABLE LIMIT	%	N/A	N/A	

* Zeroes in this table indicate that no radioactivity was present above detectable levels. See Table 2-8 for typical LLD for gaseous sample analyses

Table 2-2C

Georgia Power Company

Vogtle Electric Generating Plant

SEMIANNUAL SUMMATION OF ALL RELEASES BY QUARTER
ALL AIRBORNE EFFLUENTS
SITE
Starting : 1-Jul-1991 Ending : 31-Dec-1991

TYPE OF EFFLUENT	UNITS	QUARTER 3	QUARTER 4	EST. TOT ERROR %
A. FISSION & ACTIVATION PRODUCTS				
1. TOTAL RELEASE	CURIES	2.075E+02	1.450E+01	50
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	2.610E+01	1.824E+01	
3. PERCENT OF APPLICABLE LIMIT	%	N/A	N/A	
B. RADIOIODINES				
1. TOTAL IODINE-131	CURIES	1.090E-03	8.644E-04	100
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	1.371E-04	1.087E-04	
3. PERCENT OF APPLICABLE LIMIT	%	N/A	N/A	
C. PARTICULATES				
1. PARTICULATES(HALF-LIVES>8 DAYS)	CURIES	1.439E-05	6.251E-05	90
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	1.810E-06	7.864E-06	
3. PERCENT OF APPLICABLE LIMIT	%	N/A	N/A	
4. GROSS ALPHA RADIOACTIVITY	CURIES	1.229E-06	1.928E-06	
D. TRITIUM				
1. TOTAL RELEASE	CURIES	5.770E+01	1.229E+02	40
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	7.258E+00	1.546E+01	
3. PERCENT OF APPLICABLE LIMIT	%	N/A	N/A	

* Zeroes in this table indicate that no radioactivity was present above detectable levels. See table 2-8 for typical LLD for gaseous sample analyses

TABLE 2-3A (Page 1 OF 2)
VOGTLE ELECTRIC GENERATING PLANT
SEMIANNUAL RADIOACTIVE EFFLUENT REPORT
GASEOUS EFFLUENTS - MIXED MODE
July 1, 1991 through December 31, 1991
UNIT 1

Nuclides Released	Unit	Continuous Mode Quarter 3	Continuous Mode Quarter 4	Batch Mode Quarter 3	Batch Mode Quarter 4
1. Fission Gases					
Xe-131M	Ci	0.00E+00	0.00E+00	6.54E-01	3.82E-01
Xe-133	Ci	1.26E+02	4.58E+00	5.92E+01	5.99E+00
Xe-133M	Ci	0.00E+00	0.00E+00	9.30E-01	1.03E-01
Xe-135	Ci	1.86E+00	0.00E+00	5.48E-01	8.88E-02
Ar-41	Ci	0.00E+00	0.00E+00	2.26E-02	4.14E-02
Kr-85M	Ci	0.00E+00	0.00E+00	2.66E-02	6.10E-03
Kr-85	Ci	0.00E+00	0.00E+00	1.90E-02	0.00E+00
TOTAL FOR PERIOD	Ci	1.278E+02	4.58E+00	6.14E+01	6.61E+00
2. Iodines	Ci				
I-135	Ci	2.98E-04	0.00E+00	0.00E+00	0.00E+00
I-131	Ci	1.09E-03	3.14E-04	0.00E+00	0.00E+00
I-132	Ci	3.96E-04	0.00E+00	0.00E+00	0.00E+00
I-133	Ci	7.54E-04	2.08E-06	0.00E+00	0.00E+00
TOTAL FOR PERIOD	Ci	2.54E-03	3.16E-04	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 lower limits of detection for gaseous samples analyses.

TABLE 2-3A (Page 2 OF 2)
VOGTLE ELECTRIC GENERATING PLANT
SEMIANNUAL RADIOACTIVE EFFLUENT REPORT
GASEOUS EFFLUENTS - MIXED MODE
July 1, 1991 through December 31, 1991
UNIT 1

Nuclides Released	Unit	Continuous Mode Quarter 3	Continuous Mode Quarter 4	Batch Mode Quarter 3	Batch Mode Quarter 4
3. Particulates**					
Be-7	Ci	2.56E-06	5.16E-06	0.00E+00	0.00E+00
Co-57	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Co-58	Ci	1.89E-06	1.84E-05	0.00E+00	0.00E+00
Co-60	Ci	2.12E-06	8.56E-07	0.00E+00	0.00E+00
Mn-54	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cs-134	Ci	2.92E-06	1.61E-06	0.00E+00	0.00E+00
Cs-137	Ci	2.70E-06	2.34E-06	0.00E+00	0.00E+00
Cr-51	Ci	2.20E-06	5.44E-06	0.00E+00	0.00E+00
Na-24	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
G-Alpha	Ci	9.94E-07	1.58E-06	0.00E+00	0.00E+00
H-3	Ci	3.20E+01	8.94E+01	9.04E-01	1.37E+00
TOTAL FOR PERIOD	Ci	3.20E+01	8.94E+01	9.04E-01	1.37E+00

* Zeroes in this table indicate that no radioactivity was present above detectable levels. See Table 2-8 for typical lower limits of detection for gaseous sample analyses.

** Half lives greater than 8 days.

TABLE 2-3B (Page 1 OF 2)
VOGTLE ELECTRIC GENERATING PLANT
SEMIANNUAL RADIOACTIVE EFFLUENT REPORT
GASEOUS EFFLUENTS - MIXED MODE
July 1, 1991 through December 31, 1991
UNIT 2

Nuclides Released	Unit	Continuous Mode		Batch Mode	
		Quarter 3	Quarter 4	Quarter 3	Quarter 4
1. Fission Gases					
Xe-131M	Ci	0.00E+00	0.00E+00	0.00E+00	5.74E-04
Xe-133	Ci	1.70E+01	3.00E+00	3.48E-01	1.18E-01
Xe-133M	Ci	0.00E+00	0.00E+00	2.40E-04	0.00E+00
Xe-135	Ci	0.00E+00	0.00E+00	3.82E-02	1.18E-03
Ar-41	Ci	0.00E+00	0.00E+00	1.88E-01	7.39E-02
Kr-85M	Ci	0.00E+00	0.00E+00	1.92E-03	0.00E+00
Kr-87	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TOTAL FOR PERIOD	Ci	1.70E+01	3.00E+00	5.76E-01	1.94E-01
2. Iodines					
I-131	Ci	6.89E-06	1.27E-05	0.00E+00	0.00E+00
I-132	Ci	2.14E-05	0.00E+00	0.00E+00	0.00E+00
I-133	Ci	3.24E-05	4.64E-05	0.00E+00	0.00E+00
TOTAL FOR PERIOD	Ci	6.07E-05	5.91E-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 lower limits of detection for gaseous samples analyses.

TABLE 2-3B (Page 2 OF 2)
VOGTLE ELECTRIC GENERATING PLANT
SEMIANNUAL RADIOACTIVE EFFLUENT REPORT
GASEOUS EFFLUENTS - MIXED MODE
July 1, 1991 through December 31, 1991
UNIT 2

Nuclides Released	Unit	Continuous Mode		Batch Mode	
		Quarter 3	Quarter 4	Quarter 3	Quarter 4
3. Particulates**					
Co-58	Ci	0.00E+00	1.97E-06	0.00E+00	0.00E+00
Co-60	Ci	0.00E+00	2.20E-07	0.00E+00	0.00E+00
Mn-54	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cs-134	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cs-137	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cr-51	Ci	0.00E+00	7.68E-07	0.00E+00	0.00E+00
TE-125M	Ci	0.00E+00	9.20E-06	0.00E+00	0.00E+00
G-Alpha	Ci	2.34E-07	3.44E-07	0.00E+00	0.00E+00
H-3	Ci	2.48E+01	3.14E+01	5.40E-04	0.00E+00
TOTAL FOR PERIOD	Ci	2.48E+01	3.14E+01	5.40E-04	0.00E+00

* Zeroes in this table indicate that no radioactivity was present above detectable levels. See Table 2-8 for typical lower limits of detection for gaseous samples analyses.

** Half lives greater than 8 days.

TABLE 2-3C (Page 1 OF 2)
VOGTLE ELECTRIC GENERATING PLANT
SEMIANNUAL RADIOACTIVE EFFLUENT REPORT
GASEOUS EFFLUENTS - MIXED MODE
July 31, 1991 through December 31, 1991
SITE

Nuclides Released	Unit	Continuous Mode Quarter 3	Continuous Mode Quarter 4	Batch Mode Quarter 3	Batch Mode Quarter 4
1. Fission Gases					
Xe-131M	Ci	0.00E+00	0.00E+00	6.54E-01	3.83E-01
Xe-133	Ci	1.43E+02	7.58E+00	5.96E+01	6.11E+00
Xe-133M	Ci	0.00E+00	0.00E+00	9.30E-01	1.03E-01
Xe-135	Ci	1.86E+00	0.00E+00	5.86E-01	8.99E-02
Ar-41	Ci	0.00E+00	0.00E+00	4.14E-01	1.15E-01
Kr-85M	Ci	0.00E+00	0.00E+00	2.85E-02	6.10E-03
Kr-85	Ci	0.00E+00	0.00E+00	0.00E+00	1.45E-01
Kr-88	Ci	0.00E+00	0.00E+00	1.90E-03	0.00E+00
TOTAL FOR PERIOD	Ci	1.45E+02	7.58E+00	6.22E+01	6.80E+00
2. Iodines					
I-131	Ci	1.10E-03	3.27E-04	0.00E+00	0.00E+00
I-132	Ci	4.17E-04	0.00E+00	0.00E+00	0.00E+00
I-133	Ci	7.86E-04	4.85E-05	0.00E+00	0.00E+00
I-135	Ci	2.98E-04	0.00E+00	0.00E+00	0.00E+00
TOTAL FOR PERIOD	Ci	2.60E-03	3.75E-04	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 lower limits of detection for gaseous samples analyses.

TABLE 2-3C (Page 2 OF 2)
VOGTLE ELECTRIC GENERATING PLANT
SEMIANNUAL RADIOACTIVE EFFLUENT REPORT
GASEOUS EFFLUENTS - MIXED MODE
July 1, 1991 through December 31, 1991
SITE

Nuclides Released	Unit	Continuous Mode Quarter 3	Continuous Mode Quarter 4	Batch Mode Quarter 3	Batch Mode Quarter 4
3. Particulates**					
Be-7	Ci	2.56E-06	5.16E-06	0.00E+00	0.00E+00
Co-57	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Co-58	Ci	1.89E-06	2.04E-05	0.00E+00	0.00E+00
Co-60	Ci	2.12E-06	1.08E-06	0.00E+00	0.00E+00
TE-125M	Ci	0.00E+00	9.20E-06	0.00E+00	0.00E+00
Cs-134	Ci	2.92E-06	1.61E-06	0.00E+00	0.00E+00
Cs-137	Ci	2.70E-06	2.34E-06	0.00E+00	0.00E+00
CE-51	Ci	2.20E-06	6.21E-06	0.00E+00	0.00E+00
Na-24	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
G-Alpha	Ci	1.23E-06	1.93E-06	0.00E+00	0.00E+00
H-3	Ci	5.68E+01	1.21E+02	9.04E-01	1.37E+00
TOTAL FOR PERIOD	Ci	5.68E+01	1.21E+02	9.04E-01	1.37E+00

* Zeroes in this table indicate that no radioactivity was present above detectable levels. See Table 2-8 for typical lower limits of detection for gaseous samples analyses.

** Half lives greater than 8 days.

TABLE 2-4A (Page 1 OF 2)
VOGTLE ELECTRIC GENERATING PLANT
SEMIANNUAL RADIOACTIVE EFFLUENT REPORT
GASEOUS EFFLUENTS - GROUND LEVEL
July 1, 1991 through December 31, 1991
UNIT 1

Nuclides Released	Unit	Continuous Mode Quarter* 3	Continuous Mode Quarter* 4	Batch Mode Quarter* 3	Batch Mode Quarter 4
1. Fission Gases					
Xe-131M	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	7.06E-02
Xe-133M	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xe-135	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Ar-41	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
Kr-87	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	7.06E-02
2. Iodines					
I-131	Ci	0.00E+00	0.00E+00	0.00E+00	5.37E-04
I-132	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
I-133	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	5.37E-04

* No Releases during this period.

TABLE 2-4A (Page 2 OF 2)
VOGTLE ELECTRIC GENERATING PLANT
SEMIANNUAL RADIOACTIVE EFFLUENT REPORT
GASEOUS EFFLUENTS - GROUND LEVEL
July 1, 1991 through December 31, 1991
UNIT 1

Nuclides Released	Unit	Continuous Mode Quarter* 3	Continuous Mode Quarter* 4	Batch Mode Quarter* 3	Batch Mode Quarter 4
3. Particulates**					
Co-58	Ci	0.00E+00	0.00E+00	0.00E+00	8.80E-06
Co-60	Ci	0.00E+00	0.00E+00	0.00E+00	7.90E-06
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
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	7.49E-01
Kr-87	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	7.49E-01

* No Releases during this period.

** Half lives greater than 8 days.

TABLE 2-4B (Page 1 OF 2)
VOGTLE ELECTRIC GENERATING PLANT
SEMIANNUAL RADIOACTIVE EFFLUENT REPORT
GASEOUS EFFLUENTS - GROUND LEVEL
July 1, 1991 through December 31, 1991
UNIT 2

Nuclides Released	Unit	Continuous Mode Quarter* 3	Continuous Mode Quarter* 4	Batch Mode Quarter* 3	Batch Mode Quarter* 4
1. Fission Gases					
Xe-131M	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-133M	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xe-135	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Ar-41	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
Kr-87	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-131	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
I-132	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
I-133	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

* No Releases during this period.

TABLE 2-4B (Page 2 OF 2)
VOGTLE ELECTRIC GENERATING PLANT
SEMIANNUAL RADIOACTIVE EFFLUENT REPORT
GASEOUS EFFLUENTS - GROUND LEVEL
July 1, 1991 through December 31, 1991
UNIT 2

Nuclides Released	Unit	Continuous Mode		Batch Mode	
		Quarter* 3	Quarter* 4	Quarter* 3	Quarter* 4
3. Particulates**					
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
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
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
Kr-87	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

* No Releases during this period.

** Half lives greater than 8 days.

TABLE 2-4C (Page 1 OF 2)
VOGTLE ELECTRIC GENERATING PLANT
SEMIANNUAL RADIOACTIVE EFFLUENT REPORT
GASEOUS EFFLUENTS - GROUND LEVEL
July 1, 1991 through December 31, 1991
SITE

Nuclides Released	Unit	Continuous Mode Quarter* 3	Continuous Mode Quarter* 4	Batch Mode Quarter* 3	Batch Mode Quarter 4
1. Fission Gases					
Xe-131M	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	7.06E-02
Xe-133M	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xe 135	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Ar-41	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
Kr-87	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	7.06E-02
2. Iodines					
I-131	Ci	0.00E+00	0.00E+00	0.00E+00	5.37E-04
I-132	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
I-133	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	5.37E-04

* No Releases during this period.

TALLE 2-4C (Page 2 OF 2)
VOGTLE ELECTRIC GENERATING PLANT
SEMIANNUAL RADIOACTIVE EFFLUENT REPORT
GASEOUS EFFLUENTS - GROUND LEVEL
July 1, 1991 through December 31, 1991
SITE

Nuclides Released	Unit	Continuous Mode Quarter* 3	Continuous Mode Quarter* 4	Batch Mode Quarter* 3	Batch Mode Quarter 4
3. Particulates**					
Co-58	Ci	0.00E+00	0.00E+00	0.00E+00	8.80E-06
Co-60	Ci	0.00E+00	0.00E+00	0.00E+00	7.90E-06
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
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	7.49E-01
Kr-87	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	7.49E-01

* No Releases during this period.

** Half lives greater than 8 days.

TABLE 2-6A
VOGTLE ELECTRIC GENERATING PLANT
SEMIANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
AIR DOSE DUE TO NOBLE GAS RELEASES
July 1, 1991 through December 31, 1991
UNIT 1

Type of Radiation	Tech Spec Limit	Units	Quarter 3	% of Tech Limit	Quarter 4	% of Tech Limit
Gamma	5.0	mrad	1.07E-03	2.14E-02	6.59E-05	1.32E-03
Beta	10.0	mrad	2.99E-03	2.99E-02	1.82E-04	1.82E-03

Cumulative Doses Per Year (Year to Date)					
Gamma	10.0	mrad	1.65E-03		1.65E-02
Beta	20.0	mrad	4.57E-03		2.28E-02

TABLE 2-6B
VOGTLE ELECTRIC GENERATING PLANT
SEMIANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
AIR DOSE DUE TO NOBLE GAS RELEASES
July 1, 1991 through December 31, 1991
UNIT 2

Type of Radiation	Tech Spec Limit	Units	Quarter 3	% of Tech Limit	Quarter 4	% of Tech Limit
Gamma	5.0	mrad	4.42E-04	8.84E-03	2.63E-05	5.26E-04
Beta	10.0	mrad	3.93E-04	3.93E-02	5.18E-05	5.18E-04

Cumulative Doses Per Year (Year to Date)				
Gamma	10.0	mrad	1.13E-03	1.13E-02
Beta	20.0	mrad	1.37E-03	6.84E-03

TABLE 2-7A
VOGTLE ELECTRIC GENERATING PLANT
SEMIANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
INDIVIDUAL DOSES DUE TO RADIOIODINE, TRITIUM
AND PARTICULATES IN GASEOUS RELEASES
July 1, 1991 through December 31, 1991
UNIT 1

Cumulative Dose Per Quarter

Organ	Tech Spec Limit	Units	Quarter 3	% of Tech Limit	Quarter 4	% of Tech Limit
Bone	7.5	mrem	6.25E-06	8.33E-05	2.33E-05	3.11E-04
Liver	7.5	mrem	1.55E-04	2.07E-03	3.99E-05	5.32E-04
T. Body	7.5	mrem	1.55E-04	2.07E-03	3.96E-05	5.29E-04
Thyroid	7.5	mrem	2.39E-04	3.19E-03	2.31E-04	3.08E-03
Kidney	7.5	mrem	1.55E-04	2.07E-03	4.02E-05	5.37E-04
Lung	7.5	mrem	1.55E-04	2.07E-03	4.07E-05	5.42E-04
GI-LLI	7.5	mrem	1.55E-04	2.07E-03	3.94E-05	5.25E-04

Cumulative Dose Per Year

Organ	Tech Spec Limit	Units	Year to Date	% of Tech Spec Limit
Bone	15.0	mrem	3.05E-05	2.03E-04
Liver	15.0	mrem	1.96E-04	1.31E-03
T. Body	15.0	mrem	1.96E-04	1.31E-03
Thyroid	15.0	mrem	4.72E-04	3.15E-03
Kidney	15.0	mrem	1.97E-04	1.31E-03
Lung	15.0	mrem	1.97E-04	1.31E-03
GI-LLI	15.0	mrem	1.96E-04	1.31E-03

TABLE 2-7B
VOGTLE ELECTRIC GENERATING PLANT
SEMIANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
INDIVIDUAL DOSES DUE TO RADIOIODINE, TRITIUM
AND PARTICULATES IN GASEOUS RELEASES
July 1, 1991 through December 31, 1991
UNIT 2

Cumulative Dose Per Quarter

Organ	Tech Spec Limit	Units	Quarter 3	% of Tech Limit	Quarter 4	% of Tech Limit
Bone	7.5	mrem	1.07E-08	1.43E-09	2.13E-07	2.84E-06
Liver	7.5	mrem	1.12E-04	1.49E-03	1.42E-04	1.89E-03
T. Body	7.5	mrem	1.12E-04	1.49E-03	1.42E-04	1.89E-03
Thyroid	7.5	mrem	1.13E-04	1.51E-03	1.44E-04	1.92E-03
Kidney	7.5	mrem	1.12E-04	1.49E-03	1.42E-04	1.89E-03
Lung	7.5	mrem	1.12E-04	1.49E-03	1.42E-04	1.89E-03
GI-LLI	7.5	mrem	1.12E-04	1.49E-03	1.42E-04	1.89E-03

Cumulative Dose Per Year

Organ	Tech Spec Limit	Units	Year to Date	% of Tech Spec Limit
Bone	15.0	mrem	1.24E-06	8.29E-06
Liver	15.0	mrem	3.22E-04	2.15E-03
T. Body	15.0	mrem	3.22E-04	2.15E-03
Thyroid	15.0	mrem	3.26E-04	2.17E-03
Kidney	15.0	mrem	3.22E-04	2.15E-03
Lung	15.0	mrem	3.22E-04	2.15E-03
GI-LLI	15.0	mrem	3.22E-04	2.15E-03

TABLE 2-8

LOWER LIMITS OF DETECTION - GASEOUS SAMPLE ANALYSES

VOGTLE ELECTRIC GENERATING PLANT

July 1, 1991 - December 31, 1991

The values in this table represent apriori lower limits of detection (LLD) which are typically achieved in laboratory analyses of gaseous radwaste samples.

RADIONUCLIDE	LLD	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/Technical Specification

The Technical Specifications 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

3.11.3

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

3.1.2 Reporting Requirements

6.8.1.4

The Semiannual Radioactive Effluent Release Reports shall include a summary of the quantities of radioactive liquid and gaseous effluents and solid waste released from the units as outlined in Regulatory Guide 1.21, "Measuring, Evaluating, and Reporting Radioactivity in Solid Wastes and Releases of Radioactive Materials in Liquid and Gaseous Effluents from Light-Water-Cooled Nuclear Power Plants", Revision 1, June 1974, with data summarized on a quarterly basis following the format of Appendix B thereof. For solid wastes, the format for Table 3 in Appendix B shall be supplemented with three additional categories: class of solid wastes (as defined by 10 CFR Part 61), type of container (e.g., LSA, Type A, Type B, Large Quantity) and SOLIDIFICATION agent or absorbent (e.g., cement urea formaldehyde).

3.1.3 Process Control Program (PCP)

6.12.2

Licensee - initiated changes to the PCP

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

For this reporting period, there was no revision to the PCP. The PCP is currently under revision and will be reported in the next Semiannual Effluent Report.

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

Technical Specification 6.13.2 requires, in part, that changes to the Offsite Dose Calculation Manual (ODCM) be reported to the Commission in the next Semiannual Effluent Release Report.

There have been no changes to the Vogtle Electric Generating Plant ODCM for the period of July 1, 1991, through December 31, 1991.

3.12.1

The Radiological Environmental Monitoring Program shall be conducted as specified in Technical Specification 3.12.-1.

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 Semiannual 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.

3.12.2 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 specification 4.11.2.3, pursuant to specification 6.8.1.4, identify the new location (s) in the next Semiannual Radioactive Effluent Release Report.

4.1 Changes in the Radiological Environmental Monitoring Program

For this semiannual period, there has been no change 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 (Figure 5.1-1 of the Technical Specifications) 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 consists of the occasional attendance at meetings and/or short visits for informational purposes. The activity at Plant Wilson consists of regular employment. There will be no radiation dose at these locations due to radioactive liquid effluents. Delineated in Table 5-1 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: The distance 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.

Not listed in Table 5-1 is the source term. Listed in Tables 2-4a and 2-4b for the ground level releases and in Table 2-3a and 2-3b for the mixed mode releases are the noble gases, radioiodines, and particulates with half lives greater than eight days; these are tabulated by radionuclide and by quarter. The tritium releases in units of curies were as follows:

QUARTER	3	4
Mixed Mode	5.77E+01	1.22E+02

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 second half of the year were assessed to be as follows:

	VISITORS CENTER	PLANT WILSON
Total Body (direct radiation from plume)	7.61E-07	9.33E-05
Maximum Organ (Thyroid - Inhalation and ground-plane)	3.11E-06	3.03E-04

TABLE 3-1 (Page 1 of 2)
VOGTLE ELECTRIC GENERATING PLANT
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
SOLID AND IRRADIATED FUEL SHIPMENTS
July 1, 1991 through December 31, 1991

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	m	1.87E+01	
	Evaporator bottom, etc.	Ci	4.50E+02	1.00E+01
b.	Dry compressible waste,	m	2.66E+01	
	Contaminated equipment, etc.	Ci	9.97E+00	4.00E+01
c.	Irradiated components,	m		
	Control rod, etc.	Ci	NONE	N/A
d.	Other (describe) oily trash	m		
	Speedi-dry mix equipment, etc.	Ci	NONE	N/A
	Solidified oil, CRD filters			

2.Estimate of Major Nuclide Composition (By type of waste)

	ISOTOPE	PERCENT	CURIES
a.	Ni-63	3.38E+01	1.52E+02
	Fe-55	3.25E+01	1.46E+02
	All Others	3.37E+01	1.52E+02
b.	Fe-55	3.22E+01	3.21E+00
	Co-58	2.50E+01	2.49E+00
	All Others	4.28E+01	4.27E+00

TABLE 3-1 (Page 2 of 2)
VOGTLE ELECTRIC GENERATING PLANT
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
SOLID AND IRRADIATED FUEL SHIPMENTS
July 1, 1991 through December 31, 1991

	Isotope	Percent	Curies
c.	None shipped this period		
d.	None shipped this period		

3. Solid Waste Disposition

Number of Shipments	Mode of Transportation	Destination
7	Tractor and Shielded cask	Chem Nuclear Barnwell, SC
7	Tractor-Trailer	Scientific Ecology Oak Ridge, TN

4. Irradiated Fuel Shipments (Disposition)

Number of Shipments	Mode of Transportation	Destination
0	N/A	N/A

Additional Information Required by Tech Specs:

Shipment No.	Waste Class	Type Container	Shipping Class	Solidification Agent
RWS-91-005	A stable	Type A	LSA	N/A
RWS-91-006	B stable	Type B	LSA	N/A
RWS-91-007	B stable	Type A	LSA	N/A
RWS-91-008	B stable	Type A	LSA	N/A
RWS-91-009	A Unstable	Type A	LSA	N/A
RWS-91-010	A Unstable	Type A	LSA	N/A
RWS-91-011	A Stable	Type A	LSA	N/A
RVRS-91-003	A unstable	Strong-Tight	LSA	N/A
RVRS-91-004	A unstable	Strong-Tight	LSA	N/A
RVRS-91-005	A Unstable	Strong-Tight	LSA	N/A
RVRS-91-006	A Unstable	Strong-Tight	LSA	N/A
RVRS-91-007	A Unstable	Strong-Tight	LSA	N/A
RVRS-91-008	A Unstable	Strong Tight	LSA	N/A
RVRS-91-009	A Unstable	Strong Tight	LSA	N/A

NOTES: Vogtle Electric Generating Plant performed seven (7) shipments to Chem Nuclear, Barnwell, SC. and seven (7) shipment to Scientific Ecology Group, Inc. in Oak Ridge, TN. During this reporting period, the waste volume and activity on this report reflects only that volume of waste and activity which was processed and disposed of as radioactive waste at Chem Nuclear Systems, Inc., Barnwell Waste Management Facility, or by Scientific Ecology Group, Inc. during this reporting period.

TABLE 5-1
BASIC DATA ASSUMED IN DOSE ASSESSMENTS
TO MEMBER OF THE PUBLIC
July 1, 1991 through December 31, 1991

ITEM		VISITOR CENTER	PLANT WILSON
Distance (meters)		447	1420
Sector		SE	ESE
X/Q (sec/m3)	(1)	5.93E-06	9.45E-07
Depleted X/Q (sec/m3)	(1)	5.58E-06	8.34E-07
D/Q (m-2)	(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 (m-2)	(2)	5.77E-09	2.07E-09
Occupancy Factor		0.00046 (4 hr/yr)	0.228 (2000 hr/yr)
Age Group		CHILD	ADULT

(1) Ground Level Release
(2) Mixed Mode Release

	VISITOR CENTER			PLANT WILSON		
	Quarter 3 mrem	Quarter 4 mrem	TOTAL mrem	Quarter 3 mrem	Quarter 4 mrem	TOTAL mrem
TOTAL BODY	7.068E-07	5.41E-08	7.61E-07	8.66E-05	6.71E-06	9.33E-05
ORGAN DOSE						
Bone	1.67E-08	8.36E-08	1.00E-07	2.03E-06	2.05E-06	4.07E-06
Liver	6.37E-07	1.50E-06	2.14E-06	8.46E-05	1.85E-04	2.70E-04
TBody	6.44E-07	1.50E-06	2.14E-06	8.48E-05	1.85E-04	2.70E-04
Thyroid	8.52E-07	2.26E-06	3.11E-06	1.02E-04	2.01E-04	3.03E-04
Kidney	1.72E-08	1.50E-06	1.52E-06	8.49E-05	1.85E-04	2.70E-04
Lung	6.44E-07	1.51E-06	2.15E-06	8.48E-05	1.85E-04	2.70E-04
GI	6.44E-07	1.50E-06	2.14E-06	8.48E-05	1.85E-04	2.70E-04

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

6.8.1.4 states in part:

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

6.1 Gaseous Radwaste System

There were no major changes to the gaseous radwaste system in the second half of 1991.

Solid Radwaste System

There were no major changes to the solid radwaste system in the second half of 1991.

Liquid Radwaste System

There were no major changes to the Liquid Radwaste Treatment System in the second half of 1991.

7.0 Meteorological Data

6.8.1.4 states in part:

The Semiannual Radioactive Effluent Release Report to be submitted within 60 days after January 1 of each year shall include an annual summary of hourly meterological 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, atmospheric 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 Semiannual Radioactive Effluent Release Report, the licensee has retained this summary of required meterological 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 Semiannual Radioactive Effluent Release Reports shall also include the following: an explanation as to why the inoperability of liquid or gaseous effluent monitoring instrumentation was not corrected within the time specified in Specifications 3.3.3.9 or 3.3.3.10 respectively.

Inoperable Tech Spec monitors are tracked on Limiting Condition of Operation (LCO) Forms. The operators declare equipment operable and inoperable and monitors are considered inoperable if there are oper LCO's for that monitor.

8.1.1 The LCO's initiated do not have to be reported for this report period since the LCO's initiated were closed before 30 day period.

9.0 Tanks Exceeding Curie Content Limits

6.8.1.4 states in part:

The Semiannual Radiaoctive 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 specification 3.11.1.4 or 3.11.2.6, respectively"..

There were no outside temporary liquid tanks for radioactive liquids during this rerorting period. The radioactive material contained in each waste gas decay tank did not exceed 2E5 curies of noble gases (considered as Xe-133 equivalent).