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August 27, 1990

the southern electric system

W. G. Hairston, III
Senior Vice President
Nuclear Operations

ELV-02033
0565

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 January 1, 1990 through June 30, 1990. Six copies are provided for your use. Two copies of this report are being provided to the NRC Region II office.

Sincerely,

W. G. Hairston, III

WGH,III/JLL/gm

Enclosure

xc: Georgia Power Company
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Mr. G. Bockhold, Jr.
Mr. R. M. Odom
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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

JANUARY 1, 1990 TO JUNE 30, 1990

VOGTLE ELECTRIC GENERATING PLANT

SEMIANNUAL REPORT

PLANT RADIOACTIVE EFFLUENT RELEASES

VOGTLE ELECTRIC GENERATING PLANT

SEMIANNUAL REPORT

RADIOACTIVE EFFLUENT RELEASE REPORT

LIST OF TABLES

TABLE	LIST OF TABLES	PAGE

1.0 Liquid Effluents

1.1 Regulatory Limits/Technical Specifications

The Technical Specifications (T/S) presented in this subsection are for the site.

1.1.1 Effluent Radiation Monitoring System

The radioactive liquid effluent monitoring instrumentation channels shown in T/S Table 3.3-9 shall be OPERABLE with their Alarm/Trip Setpoints set to ensure that the limits of Specification 3.11.1.1 are not exceeded. The ALARM/TRIP Setpoints of these channels shall be determined and adjusted in accordance with the methodology and parameters in the OFF-SITE DOSE CALCULATION MANUAL (ODCM). Technical Specification Table 3.3-9 is included in this subsection as Table 1-1.

1.1.2 Concentration Limits

3.11.1.1

The concentration of radioactive material released in liquid effluents to UNRESTRICTED AREAS (See Figure 5.1-1 of Technical Specifications and 5.1-2 of Technical Specifications) 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 microcurie/ml total activity.

1.1.3 Dose Limits

3.11.1.2

The dose or dose commitment to a MEMBER OF THE PUBLIC from radioactive materials in liquid effluents released, from each unit, to UNRESTRICTED AREAS (see Figure 5.1-1 and 5.1-2 of Techical Specifications), 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.

1.1.4 Liquid Processing

3.11.1.3

The Liquid Radwaste Treatment System shall be OPERABLE and appropriate portions of the system shall be used to reduce releases of radioactivity when the projected doses due to the liquid effluent, from each unit, to UNRESTRICTED AREAS (See Figure 5.1-1 and 5.1-2 of the Technical Specifications) would exceed 0.06 mrem to the whole body or 0.2 mrem to any organ in a 31-day period.

1.1.5 Outside Temporary Tanks

3.11.1.4

The quantity of radioactive material contained in each outside temporary tank shall be limited to less than or equal to 10 curies, excluding tritium and dissolved or entrained noble gases.

1.1.6 Reporting of Semiannual Releases (Unplanned)

6.8.1.4 states in part:

The Semiannual Radioactive Effluent Release Reports shall include a list and description of unplanned releases from the site to UNRESTRICTED AREAS of radioactive materials in gaseous and liquid effluents made during the reporting period.

TABLE 1-1

(FROM TECHNICAL SPECIFICATIONS)

(TABLE 3.3-9)

RADIOACTIVE LIQUID EFFLUENT MONITORING INSTRUMENTATION

	INSTRUMENT	MINIMUM CHANNELS OPERABLE	ACTION
1.	Radioactivity Monitors Providing Alarm and Automatic Termination of Release		
	a. Liquid Radwaste Effluent Line (RE-0018)	1	37
	b. Steam Generator Blowdown Effluent Line - (RE-0021)	1	38
	c. Turbine Bldg. (Floor Drains) Sumps Effluent Line (RE-0848)	1	38
2.	Radioactivity Monitors Providing Alarm But Not Providing Automatic Termination of Release		
	a. Nuclear Service Cooling Water System Effluent Line (RE-0020A & B)	1	39
3.	Flow Rate Measurement Devices		
	a. Liquid Radwaste Effluent Line (FT-0018)	1	40
	b. Steam Generator Blowdown Effluent Line (FT-0021)	1	40
	c. Flow to Blowdown Sump (AFQI-7620, FR-7620, pen 1) (common)	1	40

TABLE 1-1 (CONTINUED)

ACTION STATEMENTS

ACTION 37 With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue provided that prior to initiating a release:

a. At least two independent samples are analyzed in accordance with Specification 4.11.1.1.1, and

b. At least two technically qualified members of the facility staff independently verify the release rate calculations and discharge line valving.

Otherwise, suspend release of radioactivity effluents via this pathway.

ACTION 38 With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue provided grab samples are analyzed for radioactivity at a lower limit of detection of no more than 10^{-7} microcurie/ml:

a. At least once per 12 hours when the specific activity of the secondary coolant is greater than 0.01 microcurie/gram DOSE EQUIVALENT I-131, or

b. At least once per 24 hours when the specific activity of the secondary coolant is less than or equal to 0.01 microcurie/gram DOSE EQUIVALENT I-131.

ACTION 39 With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue provided that, at least once per 12 hours, grab samples are collected and analyzed for radioactivity at a lower limit of detection of no more than 10^{-7} microcurie/ml.

ACTION 40 With the number of channels OPERABLE less than required by the Minimum Channel OPERABLE requirement, effluent releases via this pathway may continue provided the flow rate is estimated at least once per 4 hours during actual releases. Pump performance curves generated in place may be used to estimate flow.

1.2 Maximum Permissible Concentration (MPC)

MPC 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.

For dissolved or entrained noble gases in liquid radwaste, the MPC is obtained from Technical Specifications 3.11.1.1 as 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

	MEASUREMENT	FREQUENCY	METHOD
5.	Sr-89 and 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 quantitative 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 quantitative 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 off-site rather than in-house to more efficiently use plant technicians.

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

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.

1.4.1 Methodology

The values for the four categories of Table 1-2a and 1-2b are calculated and are completed as follows:

1.4.1.1 Fission and activation products

The total release values (not including tritium, gases, and alpha) are comprised of the sum of the measured individual radionuclide activities. This sum is for each batch released to the river for the respective quarter.

1.4.1.2 Tritium

The measured tritium concentrations in the monthly composite samples are used to calculate the total release and average diluted concentration during each period.

1.4.1.3 Dissolved and entrained gases

Concentrations of dissolved and entrained gases in liquid effluents are measured by germanium spectroscopy on each one liter sample for each liquid radwaste batch. Radioisotopes of iodine in any form are also determined during the isotopic analysis for each batch, therefore, a separate analysis for possible gaseous forms is not performed because it would not provide additional information.

1.4.1.4 Gross alpha radioactivity

The measured gross alpha concentrations in the monthly composite samples are used to calculate the total release of alpha radioactivity.

1.4.1.5 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.

Estimated errors are based on errors in counting equipment calibration, counting statistics, dilution flow rates, sample and tank flow rates.

1.4.1.5.1 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%

1.4.1.5.2 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%

1.4.1.5.3 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%

1.4.1.5.4 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%

1.4.1.5.5 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%

1.4.1.5.6 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%

1.4.2 Batch Release Data

Other data pertinent to batch releases of radioactive liquid effluent are listed in Table 1-6a for Unit 1, and Table 1-6b for Unit 2.

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 Technical Specification 3/4.11.1.2 using the methodology presented in the Plant Vogtle Offsite Dose Calculation Manual. Results are presented in Table 1-4a for Unit 1 and 1-4b for Unit 2. This is submitted as required by section 6.8.1.4 of Technical Specifications.

1.6 Abnormal Releases

1.6.1 Itemization of the Location/Source of the Unplanned Releases

1.6.1.1 There was no unplanned release for this report period.

1.7 River Flow

1.7.1 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 12262 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-Jan-1990 Ending : 30-Jun-1990

TYPE OF EFFLUENT	UNITS	QUARTER 1	QUARTER 2	EST. TOT ERROR %
A. FISSION & ACTIVATION PRODUCTS				
1. TOTAL RELEASE (NOT INCLUDING TRITIUM, GASES, ALPHA)	CURIES	3.996E-01	1.269E-01	40
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ML	3.568E-07	4.20E-07	
3. PERCENT OF APPLICABLE LIMIT	%	N/A	N/A	
B. TRITIUM				
1. TOTAL RELEASE	CURIES	1.487E+02	3.309E+01	40
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ML	1.328E-04	1.095E-04	
3. PERCENT OF APPLICABLE LIMIT	%	N/A	N/A	
C. DISSOLVED AND ENTRAINED GASES				
1. TOTAL RELEASE	CURIES	9.689E-02	2.055E-03	50
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ML	8.651E-08	6.803E-09	
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	3.067E+06	9.871E+05	20
F. VOLUME OF DILUTION WATER USED	LIT	1.117E+09	3.011E+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_2b
Georgia Power Company

Vogtle Electric Generating Plant U-2

SEMIANNUAL SUMMATION OF ALL RELEASES BY QUARTER
ALL LIQUID EFFLUENTS
Unit: 2
Starting : 1-Jan-1990 Ending : 30-Jun-1990

TYPE OF EFFLUENT	UNITS	QUARTER 1	QUARTER 2	EST. TOT ERROR %
A. FISSION & ACTIVATION PRODUCTS				
1. TOTAL RELEASE (NOT INCLUDING TRITIUM, GASES, ALPHA)	CURIES	6.374E-02	6.365E-02	40
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ML	8.897E-08	7.149E-08	
3. PERCENT OF APPLICABLE LIMIT	%	N/A	N/A	
B. TRITIUM				
1. TOTAL RELEASE	CURIES	1.653E+02	1.783E+02	40
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ML	2.307E-04	2.003E-04	
3. PERCENT OF APPLICABLE LIMIT	%	N/A	N/A	
C. DISSOLVED AND ENTRAINED GASES				
1. TOTAL RELEASE	CURIES	4.781E-02	6.440E-03	50
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ML	6.674E-08	7.233E-09	
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	1.032E+06	1.607E+06	20
F. VOLUME OF DILUTION WATER USED	LIT	7.154E+08	8.887E+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-Jan-1990 Ending : 30-Jun-1990

TYPE OF EFFLUENT	UNITS	QUARTER 1	QUARTER 2	EST. TOT ERROR %
A. FISSION & ACTIVATION PRODUCTS				
1. TOTAL RELEASE (NOT INCLUDING TRITIUM, GASES, ALPHA)	CURIES	4.63E-01	1.906E-01	40
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ML	2.522E-07	1.602E-07	
3. PERCENT OF APPLICABLE LIMIT	%	N/A	N/A	
B. TRITIUM				
1. TOTAL RELEASE	CURIES	3.140E+02	2.114E+02	40
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ML	1.710E-04	1.777E-04	
3. PERCENT OF APPLICABLE LIMIT	%	N/A	N/A	
C. DISSOLVED AND ENTRAINED GASES				
1. TOTAL RELEASE	CURIES	1.447E-01	8.495E-03	50
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ML	7.880E-08	7.139E-09	
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	4.099E+06	2.594E+06	20
F. VOLUME OF DILUTION WATER USED	LIT	1.832E+09	1.189E+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, UNIT 1
TYPE OF ACTIVITY : ALL RADIONUCLIDES
REPORTING PERIOD : QUARTER # 1 AND QUARTER # 2 YEAR 1990

		CONTINUOUS RELEASES		BATCH RELEASES	
NUCLIDE	UNIT	QUARTER 1	QUARTER 2	QUARTER 1	QUARTER 2
AG-110M	CURIES	0.00E+00	0.00E+00	8.72E-05	1.36E-04
BA-140	CURIES	0.00E+00	0.00E+00	0.00E+00	2.20E-05
BE-7	CURIES	0.00E+00	0.00E+00	0.00E+00	3.33E-05
CE-144	CURIES	0.00E+00	0.00E+00	0.00E+00	3.69E-06
CO-57	CURIES	0.00E+00	0.00E+00	4.60E-04	1.56E-04
CO-58	CURIES	0.00E+00	0.00E+00	1.10E-01	4.44E-02
CO-60	CURIES	0.00E+00	0.00E+00	1.02E-02	3.96E-03
CR-51	CURIES	0.00E+00	0.00E+00	3.00E-02	9.88E-03
CS-137	CURIES	0.00E+00	0.00E+00	9.11E-06	2.62E-05
FE-55	CURIES	0.00E+00	0.00E+00	1.19E-01	5.73E-02
FE-59	CURIES	0.00E+00	0.00E+00	9.86E-03	2.10E-03
G-ALPHA	CURIES	0.00E+00	0.00E+00	*0E0	*0E0
H-3	CURIES	0.00E+00	0.00E+00	1.48E+02	3.30E+01
HF-1	CURIES	0.00E+00	0.00E+00	4.37E-05	2.18E-04
I-131	CURIES	0.00E+00	0.00E+00	1.28E-03	8.58E-06
I-132	CURIES	0.00E+00	0.00E+00	4.14E-04	0.00E+00
I-133	CURIES	0.00E+00	0.00E+00	9.89E-05	0.00E+00
MN-54	CURIES	0.00E+00	0.00E+00	3.70E-03	2.13E-03
NA-24	CURIES	0.00E+00	0.00E+00	2.72E-04	1.34E-04
NB-95	CURIES	0.00E+00	0.00E+00	1.32E-03	1.22E-03
NB-97	CURIES	0.00E+00	0.00E+00	2.30E-04	3.38E-05
SB-122	CURIES	0.00E+00	0.00E+00	1.86E-03	0.00E+00
SB-124	CURIES	0.00E+00	0.00E+00	2.51E-02	3.07E-04
SB-125	CURIES	0.00E+00	0.00E+00	7.65E-02	4.20E-03
SR-89	CURIES	0.00E+00	0.00E+00	*0E0	*0E0
SR-90	CURIES	0.00E+00	0.00E+00	*0E0	*0E0
TC-99M	CURIES	0.00E+00	0.00E+00	1.19E-04	0.00E+00
TE-129M	CURIES	0.00E+00	0.00E+00	7.38E-03	0.00E+00
TE-132	CURIES	0.00E+00	0.00E+00	4.67E-04	0.00E+00
W-187	CURIES	0.00E+00	0.00E+00	1.03E-05	0.00E+00
XE-131M	CURIES	0.00E+00	0.00E+00	2.65E-04	0.00E+00
XE-133	CURIES	0.00E+00	0.00E+00	9.40E-02	2.05E-03
XE-133M	CURIES	0.00E+00	0.00E+00	2.83E-04	0.00E+00
XE-135	CURIES	0.00E+00	0.00E+00	1.71E-04	0.00E+00
ZN-65	CURIES	0.00E+00	0.00E+00	8.27E-05	2.65E-06
ZR-95	CURIES	0.00E+00	0.00E+00	2.63E-04	6.26E-04
TOTAL FOR PERIOD	CURIES	0.00E+00	0.00E+00	1.49E+02	3.31E+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, UNIT 2
TYPE OF ACTIVITY : ALL RADIONUCLIDES
REPORTING PERIOD : QUARTER # 1 AND QUARTER # 2 YEAR 1990

		CONTINUOUS RELEASES		BATCH RELEASES	
NUCLIDE	UNIT	QUARTER 1	QUARTER 2	QUARTER 1	QUARTER 2
BE-7	CURIES	0.00E+00	0.00E+00	0.00E+00	5.71E-05
CE-144	CURIES	0.00E+00	0.00E+00	5.14E-06	3.33E-05
CO-57	CURIES	0.00E+00	0.00E+00	6.98E-05	4.76E-05
CO-58	CURIES	0.00E+00	0.00E+00	1.95E-02	2.77E-02
CO-60	CURIES	0.00E+00	0.00E+00	6.80E-03	2.38E-03
CR-51	CURIES	0.00E+00	0.00E+00	5.11E-03	4.31E-03
FE-55	CURIES	0.00E+00	0.00E+00	2.05E-02	1.85E-02
FE-59	CURIES	0.00E+00	0.00E+00	9.09E-04	6.88E-04
G-ALPHA	CURIES	0.00E+00	0.00E+00	*0E0	*0E0
H-3	CURIES	0.00E+00	0.00E+00	1.65E+02	1.78E+02
HF-181	CURIES	0.00E+00	0.00E+00	1.38E-05	1.54E-05
I-131	CURIES	0.00E+00	0.00E+00	1.35E-04	2.24E-04
I-133	CURIES	0.00E+00	0.00E+00	1.67E-05	9.67E-05
KR-85M	CURIES	0.00E+00	0.00E+00	1.34E-06	1.80E-06
LA-140	CURIES	0.00E+00	0.00E+00	2.26E-05	4.42E-05
MN-54	CURIES	0.00E+00	0.00E+00	1.54E-03	1.32E-03
NA-24	CURIES	0.00E+00	0.00E+00	0.00E+00	9.16E-05
NB-95	CURIES	0.00E+00	0.00E+00	9.06E-04	8.23E-04
NB-97	CURIES	0.00E+00	0.00E+00	0.00E+00	6.03E-06
SB-124	CURIES	0.00E+00	0.00E+00	1.97E-03	4.96E-04
SB-125	CURIES	0.00E+00	0.00E+00	5.70E-03	6.24E-03
SR-89	CURIES	0.00E+00	0.00E+00	*0E0	*0E0
SR-90	CURIES	0.00E+00	0.00E+00	*0E0	*0E0
TC-99M	CURIES	0.00E+00	0.00E+00	7.83E-06	1.84E-05
W-187	CURIES	0.00E+00	0.00E+00	0.00E+00	2.02E-05
XE-131M	CURIES	0.00E+00	0.00E+00	8.53E-04	0.00E+00
XE-133	CURIES	0.00E+00	0.00E+00	4.63E-02	5.32E-03
XE-133M	CURIES	0.00E+00	0.00E+00	2.50E-04	0.00E+00
XE-135	CURIES	0.00E+00	0.00E+00	3.97E-04	1.11E-03
ZR-95	CURIES	0.00E+00	0.00E+00	4.57E-04	4.47E-04
TOTAL FOR PERIOD	CURIES	0.00E+00	0.00E+00	1.65E+02	1.78E+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, SITE
TYPE OF ACTIVITY : ALL RADIONUCLIDES
REPORTING PERIOD : QUARTER # 1 AND QUARTER # 2 YEAR 1990

		CONTINUOUS RELEASES		BATCH RELEASES	
NUCLIDE	UNIT	QUARTER 1	QUARTER 2	QUARTER 1	QUARTER 2
AG-110M	CURIES	0.00E+00	0.00E+00	8.72E-05	1.36E-04
BA-140	CURIES	0.00E+00	0.00E+00	0.00E+00	2.20E-05
BE-7	CURIES	0.00E+00	0.00E+00	0.00E+00	9.04E-04
CE-144	CURIES	0.00E+00	0.00E+00	5.14E-06	3.69E-05
CO-57	CURIES	0.00E+00	0.00E+00	5.30E-04	2.04E-04
CO-58	CURIES	0.00E+00	0.00E+00	1.30E-01	7.21E-02
CO-60	CURIES	0.00E+00	0.00E+00	1.70E-02	6.34E-03
CR-51	CURIES	0.00E+00	0.00E+00	3.51E-02	1.42E-02
CS-137	CURIES	0.00E+00	0.00E+00	9.11E-06	2.62E-05
FE-55	CURIES	0.00E+00	0.00E+00	1.40E-01	7.58E-02
FE-59	CURIES	0.00E+00	0.00E+00	1.08E-02	2.79E-03
G-ALPHA	CURIES	0.00E+00	0.00E+00	*0E0	*0E0
H-3	CURIES	0.00E+00	0.00E+00	3.13E+02	2.11E+01
HF-181	CURIES	0.00E+00	0.00E+00	5.75E-05	2.33E-04
I-131	CURIES	0.00E+00	0.00E+00	1.48E-03	2.33E-04
I-132	CURIES	0.00E+00	0.00E+00	4.14E-04	0.00E+00
I-133	CURIES	0.00E+00	0.00E+00	1.16E-04	9.67E-05
KR-85M	CURIES	0.00E+00	0.00E+00	1.34E-06	1.80E-06
LA140	CURIES	0.00E+00	0.00E+00	2.26E-05	4.42E-05
MN-54	CURIES	0.00E+00	0.00E+00	5.24E-03	3.45E-03
NA-24	CURIES	0.00E+00	0.00E+00	2.72E-04	2.26E-04
NB-95	CURIES	0.00E+00	0.00E+00	2.23E-03	2.04E-03
NB-97	CURIES	0.00E+00	0.00E+00	2.30E-04	3.98E-05
SB-122	CURIES	0.00E+00	0.00E+00	1.86E-03	0.00E+00
SB-124	CURIES	0.00E+00	0.00E+00	2.71E-02	8.03E-04
SB-125	CURIES	0.00E+00	0.00E+00	8.22E-02	1.04E-02
SR-89	CURIES	0.00E+00	0.00E+00	*0E0	*0E0
SR-90	CURIES	0.00E+00	0.00E+00	*0E0	*0E0
TC-99M	CURIES	0.00E+00	0.00E+00	1.27E-04	1.84E-05
TE-129M	CURIES	0.00E+00	0.00E+00	7.38E-03	0.00E+00
TE-132	CURIES	0.00E+00	0.00E+00	4.67E-04	0.00E+00
W-187	CURIES	0.00E+00	0.00E+00	1.03E-05	2.02E-05
XE-131M	CURIES	0.00E+00	0.00E+00	1.12E-03	0.00E+00
XE-133	CURIES	0.00E+00	0.00E+00	1.40E-01	7.37E-03
XE-133M	CURIES	0.00E+00	0.00E+00	5.33E-04	0.00E+00
XE-135	CURIES	0.00E+00	0.00E+00	5.68E-04	1.11E-03
ZN-65	CURIES	0.00E+00	0.00E+00	8.27E-05	2.65E-06
ZR-95	CURIES	0.00E+00	0.00E+00	7.20E-04	1.07E-03
TOTAL FOR PERIOD	CURIES	0.00E+00	0.00E+00	3.14E+02	2.11E+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

January 1, 1990 Through June 30, 1990
UNIT 1

Cumulative Dose Per Quarter

Organ	Tech Spec Limit	Units	Quarter 1	% of Tech Limit	Quarter 2	% of Tech Limit
Bone	5.0	mrem	4.38E-03	8.76E-02	7.29E-04	1.46E-02
Liver	5.0	mrem	5.76E-03	1.15E-01	2.27E-03	4.54E-02
T. Body	1.5	mrem	4.94E-03	3.29E-01	1.79E-03	1.19E-01
Thyroid	5.0	mrem	5.35E-03	1.07E-01	1.14E-03	2.28E-02
Kidney	5.0	mrem	8.65E-03	1.73E-01	1.29E-03	2.58E-02
Lung	5.0	mrem	1.23E-01	2.46E+00	1.06E-02	2.12E-02
GI-LLI	5.0	mrem	4.08E-02	8.16E-01	6.66E-03	1.33E-01

Cumulative Dose Per Year

Organ	Tech Spec Limit	Units	Year to Date	% of Tech Spec Limit
Bone	10.0	mrem	5.11E-03	5.11E-02
Liver	10.0	mrem	8.03E-03	8.03E-02
T. Body	3.0	mrem	6.73E-03	2.24E-01
Thyroid	10.0	mrem	6.49E-03	6.49E-02
Kidney	10.0	mrem	9.94E-03	9.94E-02
Lung	10.0	mrem	1.24E-01	1.24E+00
GI-LLI	10.0	mrem	4.75E-02	4.75E-01

TABLE 1-4b

VOGTLE ELECTRIC GENERATING PLANT
SEMIANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
INDIVIDUAL DOSES DUE TO LIQUID RELEASES
January 1, 1990 Through June 30, 1990
UNIT 2

Cumulative Dose Per Quarter

Organ	Tech Spec Limit	Units	Quarter 1	% of Tech Limit	Quarter 2	% of Tech Limit
Bone	5.0	mrem	4.91E-04	9.82E-03	3.72E-04	7.44E-03
Liver	5.0	mrem	6.15E-03	1.23E-01	7.47E-03	1.49E-01
T. Body	1.5	mrem	5.77E-03	3.85E-01	7.35E-03	4.90E-01
Thyroid	5.0	mrem	5.73E-03	1.15E-01	7.47E-03	1.49E-01
Kidney	5.0	mrem	5.53E-03	1.10E-01	7.14E-03	1.43E-01
Lung	5.0	mrem	2.08E-02	4.17E-01	1.96E-02	3.92E-01
GI-LLI	5.0	mrem	1.09E-02	2.18E-01	1.09E-02	2.18E-01

Cumulative Dose Per Year

Organ	Tech Spec Limit	Units	Year to Date	% of Tech Spec Limit
Bone	10.0	mrem	8.63E-04	8.63E-03
Liver	10.0	mrem	1.36E-02	1.36E-01
T. Body	3.0	mrem	1.31E-02	4.37E-01
Thyroid	10.0	mrem	1.32E-02	1.32E-01
Kidney	10.0	mrem	1.27E-02	1.27E-01
Lung	10.0	mrem	2.79E-02	2.79E-01
GI-LLI	10.0	mrem	2.18E-02	2.18E-01

TABLE 1-5 (Page 1 of 2)

LOWER LIMITS OF DETECTION - LIQUID SAMPLE ANALYSES

VOGTLE ELECTRIC GENERATING PLANT
(JANUARY 1, 1990 Through JUNE 30, 1990)

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 1-5 (Page 2 of 2)

LOWER LIMITS OF DETECTION - LIQUID SAMPLE ANALYSES

VOGTLE ELECTRIC GENERATING PLANT
JANUARY 1, 1990 Through JUNE 30, 1990

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
Au-198	3.47E-08	uCi/ml
Ba-140	1.16E-07	uCi/ml
Be-7	3.49E-07	uCi/ml
Co-57	3.35E-08	uCi/ml
Cr-51	4.24E-07	uCi/ml
Cs-138	5.37E-08	uCi/ml
I-133	7.17E-08	uCi/ml
I-135	2.05E-07	uCi/ml
La-140	8.21E-08	uCi/ml
Mn-56	2.39E-07	uCi/ml
Na-24	7.22E-08	uCi/ml
Nb-95	6.67E-08	uCi/ml
Nb-97	7.17E-08	uCi/ml
Np-239	1.62E-07	uCi/ml
Ru-106	5.24E-07	uCi/ml
Sb-122	5.53E-08	uCi/ml
Tc-99m	2.90E-08	uCi/ml
Te-132	3.59E-08	uCi/ml
W-187	2.09E-07	uCi/ml
Xe-131m	2.75E-07	uCi/ml
Xe-133m	3.86E-07	uCi/ml
Zr-95	9.03E-08	uCi/ml
Zr-97	4.13E-08	uCi/ml
Sb-124	9.47E-08	uCi/ml

Table 1-6a

Georgia Power Company

Vogtle Electric Generating Plant U-1

BATCH RELEASE SUMMARY OF ALL RELEASES

Starting : 1-Jan-1990 Ending : 30-Jun-1990

LIQUID RELEASES

NUMBER OF RELEASES	:	121	
TOTAL TIME FOR ALL RELEASES	:	14036.00	MINUTES
MAXIMUM TIME FOR A RELEASE	:	563.00	MINUTES
AVERAGE TIME FOR A RELEASE	:	116.00	MINUTES
MINIMUM TIME FOR A RELEASE	:	0.00	MINUTES
AVERAGE STREAM FLOW	:	76.32	GPM

GASEOUS RELEASES

NUMBER OF RELEASES	:	103	
TOTAL TIME FOR ALL RELEASES	:	81495.00	MINUTES
MAXIMUM TIME FOR A RELEASE	:	20360.00	MINUTES
AVERAGE TIME FOR A RELEASE	:	791.21	MINUTES
MINIMUM TIME FOR A RELEASE	:	5.00	MINUTES

Table 1-6b

Georgia Power Company

Vogtle Electric Generating Plant U-2

BATCH RELEASE SUMMARY OF ALL RELEASES

Starting : 1-Jan-1990 Ending : 30-Jun-1990

LIQUID RELEASES

NUMBER OF RELEASES	92	
TOTAL TIME FOR ALL RELEASES	16813.00	MINUTES
MAXIMUM TIME FOR A RELEASE	591.00	MINUTES
AVERAGE TIME FOR A RELEASE	182.75	MINUTES
MINIMUM TIME FOR A RELEASE	22.00	MINUTES
AVERAGE STREAM FLOW	40.18	GPM

GASEOUS RELEASES

NUMBER OF RELEASES	30	
TOTAL TIME FOR ALL RELEASES	9015.00	MINUTES
MAXIMUM TIME FOR A RELEASE	3056.00	MINUTES
AVERAGE TIME FOR A RELEASE	300.50	MINUTES
MINIMUM TIME FOR A RELEASE	6.00	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. The instrumentation required may be found in Table 2-1 of this report.

2.1.1 Process Effluent Monitoring System

3.3.3.10

The radioactive gaseous effluent monitoring instrumentation channels shown in Table 3.3-10 shall be OPERABLE with their Alarm/Trip Setpoints set to ensure that the limits of Specifications 3.11.2.1a and 3.11.2.5 are not exceeded. The Alarm/Trip Setpoints of these channels meeting Specification 3.11.2.1a shall be determined and adjusted in accordance with the methodology and parameters in the ODCM.

2.1.2 Dose Rate Limit

3.11.2.1

The dose rate due to radioactive materials released in gaseous effluents from the site to areas at and beyond the SITE BOUNDARY (see Figure 5.1-1 and 5.1-2) 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.

2.1.3 Air Dose Due to Noble Gas

3.11.2.2

The air dose due to noble gases released in gaseous effluents, from each unit, to areas at and beyond the SITE BOUNDARY (see Figure 5.1-1and 5.1-2) 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 rrads for beta radiation.

2.1.4 Dose to Any Organ

3.11.2.3

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 (see Figure 5.1-1 and 5.1-2 of the Technical Specifications) 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.

2.1.5 Ventilation Exhaust Treatment System and Gaseous Waste Processing System

3.11.2.4

The VENTILATION EXHAUST TREATMENT SYSTEM and the GASEOUS WASTE PROCESSING SYSTEM shall be OPERABLE and appropriate portions of these systems shall be used to reduce releases of radioactivity when the projected doses in 31 days due to gaseous effluent releases, from each unit, to areas at and beyond the SITE BOUNDARY (See Figure 5.1-1and 5.1-2 of the Technical Specifications) would exceed:

a. 0.2 mrad to air from gamma radiation, or

b. 0.4 mrad to air from beta radiation, or

c. 0.3 mrem to any organ of a MEMBER OF THE PUBLIC.

2.1.6 Explosive Gas Mixture

3.11.2.5

The concentration of oxygen in the GASEOUS WASTE PROCESSING SYSTEM shall be limited to less than or equal to 2% by volume whenever the hydrogen concentration exceeds 4% by volume.

2.1.7 Activity in Gas Decay Tanks

3.11.2.6

The quantity of radioactivity contained in each gas decay tank shall be limited to less than or equal to 2.0E5 curies of noble gases (considered as Xe-133 equivalent).

2.1.8 Total Fuel Cycle Dose Commitment

3.11.4

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 any organ, except the thyroid, which shall be limited to less than or equal to 75 mrems.

APPLICABILITY ACTION:

At all times

a. With the calculated doses from the release of radioactive materials in liquid or gaseous effluents exceeding twice the limits of Specifications 3.11.1.2a, 3.11.1.2b, 3.11.2.2a, 3.11.2.2b, 3.11.2.3a, or 3.11.2.3b calculations shall be made including direct radiation contributions from the units (including outside storage tanks etc.) to determine whether the above limits of specification 3.11.4 have been exceeded.

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 also include an assessment of radiation doses to the likely most exposed MEMBER OF THE PUBLIC from reactor releases and other uranium fuel cycle resources within 8 km, including doses from primary effluent pathways and direct radiation for the previous calendar year to show conformance with 40 CFR part 190, "Environmental Radiation Protection Standards for Nuclear Power Operation." Acceptable methods for calculating the dose contribution from liquid and gaseous effluents are given in Regulatory Guide 1.109, Rev. 1, October 1977.

2.1.9 Reporting of Semiannual Releases (Unplanned)

6.8.1.4 states in part:

The Semiannual Radioactive Effluent Release Reports shall include a list and description of unplanned releases from the site to UNRESTRICTED AREAS of radioactive materials in gaseous and liquid effluents made during the reporting period.

VEGP unplanned releases are described in section 1.6 of this report.

TABLE 2-1 (Sheet 1 of 4)
(From Technical Specifications)
(TABLE 3.3-10)

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

INSTRUMENT	MINIMUM CHANNELS OPERABLE	APPLICABILITY	ACTION
1. GASEOUS WASTE PROCESSING			
a. Noble Gas Activity Monitor-Providing Alarm and Automatic Termination of Release (ARE-0014)	1	***	45
b. Effluent System Flow Rate Measuring Device (AFT-0014)	1	***	46
2. GASEOUS WASTE PROCESSING SYSTEM - Explosive Gas Monitoring System			
a. Hydrogen Monitor	1/recombiner	**	50
b. Oxygen Monitor	2/recombiner	**	49
3. CONDENSER AIR EJECTOR AND STEAM PACKING EXHAUSTER SYSTEM			
a. Noble Gas Activity Monitor (RE-12839C)	1	***	47
b. Iodine Sampler (RE-12839B)	1	***	51
c. Particulate Sampler (RE-12839A)	1	***	51
d. Flow Rate Monitor (FT-12839) (FIS-12862)#	1	***	46
e. Sampler Flow Rate Monitor (FI-13211)	1	***	46

TABLE 2-1 (Sheet 2 of 4)
(From Technical Specifications)
(TABLE 3.3-10)

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

INSTRUMENTS	MINIMUM CHANNELS OPERABLE	APPLICABILITY	ACTION
4. PLANT VENT			
a. Noble Gas Activity Monitor (RE-12442C or RE-12444C)	1	*	47, 48
b. Iodine Sampler/Monitor (RE-12442b or RE-12444B)	1	*	51
c. Particulate Sampler/ Monitor (RE-12442A or RE-12444A)	1	*	51
d. Flow Rate Monitor (FT-12442)	1	*	46
e. Sampler Flow Rate Monitor (FI-12442 or FI-12444)	1	*	46

TABLE NOTATIONS

* At all times.
** During GASEOUS WASTE PROCESSING SYSTEM operation
*** During radioactive releases via this pathway
# During Emergency Filtration

TABLE 2-1 (Sheet 3 of 4)
(FROM TECHNICAL SPECIFICATONS)
TABLE 3.3-10

ACTION STATEMENTS

ACTION 45 With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, the contents of the tank(s) may be released to the environment provided that prior to initiating the release:

a. At least two independent samples of the tank's contents are analyzed, and

b. At least two technically qualified members of the facility staff independently verify the release rate calculations and discharge valve lineup.

Otherwise, suspend release of radioactive effluents via this pathway.

ACTION 46 With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue provided the flow rate is estimated at least once per 4 hours.

ACTION 47 With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue provided grab samples are taken at least once per 12 hours and these samples are analyzed for radioactivity within 24 hours.

ACTION 48 With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, immediately suspend containment PURGING of radioactive effluents via this pathway.

ACTION 49

a. With the outlet oxygen monitor channel inoperable, operation of the system may continue provided grab samples are taken and analyzed at least once per 24 hours and the oxygen concentration remains less than 1 percent.

b. With the inlet oxygen monitor inoperable, operation may continue if the inlet hydrogen monitor is OPERABLE.

TABLE 2-1 (Sheet 4 of 4)
FROM TECHNICAL SPECIFICATIONS
TABLE 3.3-10

TABLE NOTATIONS (Continued)

c. With both oxygen channels or both of the inlet oxygen and inlet hydrogen monitors inoperable, suspend oxygen supply to the recombiner. Addition of waste gas to the system may continue provided grab samples are taken and analyzed at least once per 4 hours during degassing operations or at least once per 24 hours during other operations and the oxygen concentration remains less than 1 percent.

ACTION 50 With the number of channels OPERABLE one less than required by the Minimum Channels OPERABLE requirement, suspend oxygen supply to the recombiner. Addition of waste gas to the system may continue provided grab samples are taken and analyzed at least once per 4 hours during degassing operation or at least once per 24 hours during other operations and the oxygen concentration remains less than 1 percent.

ACTION 51 With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via the affected pathway may continue provided samples are continuously collected with auxiliary sampling equipment as required in Table 4.11-2 of the Technical Specifications.

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. Sample collection is in accordance with Technical Specification Table 4.11-2. 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 specified in Table Notations to the above mentioned tables, 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 and 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, particulates and noble gases before each release. In addition, the containment atmosphere is analyzed for tritium 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.

The noble gas grab sample and analysis (for principal gamma emitters) results are used along with maximum expected release flow rates from each of the vents to calculate monitor setpoints, for the gaseous effluent monitors serving the two release points, to assure that the limits of Technical Specifications 3.11.2.1a are not exceeded. Calculation of monitor setpoints is described in the Vogtle Electric Generating Plant ODCM.

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 (3.11.2.2 and 3.11.2.3), for each release for the current quarter and year.

After each calendar quarter (13 weeks), a summary of waste gas releases from the two vents and batch processes is compiled for preparation of the Semiannual Radioactive Effluent Release Report required by Technical Specifications 6.8.1.4 and NRC Regulatory Guide 1.21.

2.4 Determination Of 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 radionuclide-specific 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 computed each month by counting the particulate filters offsite for each week for gross alpha activity in a proportional counter. 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%
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 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 3/4.11.2.2. These results are presented in Tables 2-6a and 2-6b.

Cumulative doses to an individual due to radioiodine, tritium, and particulates were calculated 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

SEMIANNUAL SUMMATION OF ALL RELEASES BY QUARTER
ALL AIRBORNE EFFLUENTS
UNIT: 1
Starting : 1-Jan-1990 Ending : 30-Jun-1990

TYPE OF EFFLUENT	UNITS	QUARTER 1	QUARTER 2	EST. TOT ERROR %
A. FISSION & ACTIVATION PRODUCTS				
1. TOTAL RELEASE	CURIES	6.318E+01	4.732E+00	50
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	8.115E+00	6.019E-01	
3. PERCENT OF APPLICABLE LIMIT	%	N/A	N/A	
B. RADIOIODINES				
1. TOTAL IODINE-131	CURIES	1.000E-05	1.001E-06	100
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	1.286E-06	1.273E-07	
3. PERCENT OF APPLICABLE LIMIT	%	N/A	N/A	
C. PARTICULATES				
1. PARTICULATES(HALF-LIVES>8 DAYS)	CURIES	2.621E-05	3.160E-06	90
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	3.370E-06	4.019E-07	
3. PERCENT OF APPLICABLE LIMIT	%	N/A	N/A	
4. GROSS ALPHA RADIOACTIVITY	CURIES	2.587E-07	3.797E-07	
D. TRITIUM				
1. TOTAL RELEASE	CURIES	3.790E+01	3.460E+01	40
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	4.874E+00	4.401E+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 2-2b

Georgia Power Company
Vogtle Electric Generating Plant

SEMIANNUAL SUMMATION OF ALL RELEASES BY QUARTER
ALL AIRBORNE EFFLUENTS
UNIT: 2

Starting : 1-Jan-1990 Ending : 30-Jun-1990

TYPE OF EFFLUENT	UNITS	QUARTER 1	QUARTER 2	EST. TOT ERROR %
A. FISSION & ACTIVATION PRODUCTS				
1. TOTAL RELEASE	CURIES	1.270E+01	2.680E+01	50
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	1.633E+00	3.372E+00	
3. PERCENT OF APPLICABLE LIMIT	%	N/A	N/A	
B. RADIOIODINES				
1. TOTAL IODINE-131	CURIES	0.000E+00	7.[illegible]0E-07	100
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	0.000E+00	9.209E-08	
3. PERCENT OF APPLICABLE LIMIT	%	N/A	N/A	
C. PARTICULATES				
1. PARTICULATES(HALF-LIVES>8 DAYS)	CURIES	0.000E+00	2.950E-06	90
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	0.000E+00	3.716E-07	
3. PERCENT OF APPLICABLE LIMIT	%	N/A	N/A	
4. GROSS ALPHA RADIOACTIVITY	CURIES	5.008E-08	3.061E-08	
D. TRITIUM				
1. TOTAL RELEASE	CURIES	1.662E+01	7.700E+00	40
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	2.137E+00	9.687E-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 2-2c

Georgia Power Company
Vogtle Electric Generating Plant

SEMIANNUAL SUMMATION OF ALL RELEASES BY QUARTER
ALL AIRBORNE EFFLUENTS
SITE
Starting : 1-JAN-1990 Ending : 1-JUN-1990

TYPE OF EFFLUENT	UNITS	QUARTER 1	QUARTER 2	EST. TOT ERROR %
A. FISSION & ACTIVATION PRODUCTS				
1. TOTAL RELEASE	CURIES	7.588E+01	3.353E+01	50
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	9.758E+00	4.264E+00	
3. PERCENT OF APPLICABLE LIMIT	%	N/A	N/A	
B. RADIOIODINES				
1. TOTAL IODINE-131	CURIES	1.000E-05	1.733E-06	100
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	1.286E-06	2.204E-07	
3. PERCENT OF APPLICABLE LIMIT	%	N/A	N/A	
C. PARTICULATES				
1. PARTICULATES(HALF-LIVES>8 DAYS)	CURIES	2.621E-05	3.294E-06	90
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	3.371E-06	4.189E-07	
3 PERCENT OF APPLICABLE LIMIT	%	N/A	N/A	
4. GROSS ALPHA RADIOACTIVITY	CURIES	3.088E-07	4.103E-07	
D. TRITIUM				
1. TOTAL RELEASE	CURIES	5.452E+01	4.230E+01	40
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	7.011E+00	5.380E+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 2-3a (Page 1 of 2)
VOGTLE ELECTRIC GENERATING PLANT
SEMIANNUAL RADIOACTIVE EFFLUENT REPORT
GASEOUS EFFLUENTS - MIXED MODE
January 1, 1990 Through June 30, 1990
UNIT 1

Nuclides Released	Unit	Continuous Mode		Batch Mode	
		Quarter 1	Quarter 2	Quarter 1	Quarter 2
1. Fission Gases					
Xe-137	Ci	*0E0	*0E0	*0E0	*0E0
Kr-85	Ci	*0E0	*0E0	*0E0	1.56E-01
Xe-133	Ci	4.16E+01	3.80E+00	1.83E+01	4.46E-01
Xe-135	Ci	4.32E-01	2.94E-02	2.56E-02	1.01E-03
Ar-41	Ci	*0E0	*0E0	1.26E+00	2.92E-01
Xe-131m	Ci	*0E0	*0E0	1.25E+00	1.22E-03
Xe-133m	Ci	*0E0	*0E0	2.38E-01	8.28E-04
Kr-85m	Ci	*0E0	*0E0	1.01E-03	6.20E-07
TOTAL FOR PERIOD	Ci	4.20E+01	3.83E+00	2.11E+01	8.98E-01
2. Iodines					
I-131	Ci	1.00E-05	1.00E-06	*0E0	*0E0
I-133	Ci	4.80E-06	*0E0	*0E0	*0E0
TOTAL FOR PERIOD	Ci	1.48E-05	1.00E-06	*0E0	*0E0

*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.

TABLE 2-3a (Page 2 of 2)
VOGTLE ELECTRIC GENERATING PLANT
SEMIANNUAL RADIOACTIVE EFFLUENT REPORT
GASEOUS EFFLUENTS - MIXED MODE
January 1, 1990 Through June 30, 1990
UNIT 1

Nuclides Released	Unit	Continuous Mode		Batch Mode	
		Quarter 1	Quarter 2	Quarter 1	Quarter 2
3. Particulates**					
Co-57	Ci	2.00E-07	*0E0	*0E0	*0E0
Co-58	Ci	1.27E-05	3.16E-06	*0E0	*0E0
Co-60	Ci	1.67E-06	*0E0	*0E0	*0E0
Mn-54	Ci	8.38E-07	*0E0	*0E0	*0E0
H-3	Ci	3.34E+01	3.32E+01	4.54E+00	1.35E+00
G-Alpha	Ci	2.58E-07	*0E0	*0E0	*0E0
Cr-51	Ci	7.06E-06	*0E0	*0E0	*0E0
Fe-59	Ci	3.74E-06	*0E0	*0E0	*0E0
TOTAL FOR PERIOD	Ci	3.34E+01	3.32E+01	4.54E+00	1.35E+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
January 1, 1990 Through June 30, 1990
UNIT 2

Nuclides Released	Unit	Continuous Mode Quarter 1	Continuous Mode Quarter 2	Batch Mode Quarter 1	Batch Mode Quarter 2
1. Fission Gases					
Kr-85m	Ci	7.80E-02	*0E0	4.94E-05	*0E0
Xe-133	Ci	1.11E+01	1.92E+01	2.38E-02	2.68E+00
Xe-135	Ci	1.49E+00	2.04E+00	1.46E-03	1.70E-01
Ar-41	Ci	*0E0	1.21E+00	1.65E-02	1.49E+00
TOTAL FOR PERIOD	Ci	1.2[illegible]E+01	2.25E+01	4.18E-02	4.34E+00
2. Iodines					
I-131	Ci	*0E0	7.32E-07	*0E0	*0E0
I-133	Ci	*0E0	1.38E-05	*0E0	*0E0
TOTAL FOR PERIOD	Ci	*0E0	1.45E-05	*0E0	*0E0

*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.

TABLE 2-3b (Page 2 of 2)
VOGTLE ELECTRIC GENERATING PLANT
SEMIANNUAL RADIOACTIVE EFFLUENT REPORT
GASEOUS EFFLUENTS - MIXED MODE
January 1, 1990 Through June 30, 1990
UNIT 2

Nuclides Released	Unit	Continuous Mode Quarter 1	Continuous Mode Quarter 2	Batch Mode Quarter 1	Batch Mode Quarter 2
3. Particulates**					
CO-57	Ci	*0E0	3.46E-08	*0E0	*0E0
Co-58	Ci	*0E0	*0E0	*0E0	2.82E-06
Co-60	Ci	*0E0	*0E0	*0E0	*0E0
Mn-54	Ci	*0E0	*0E0	*0E0	*0E0
H-3	Ci	1.23E+01	7.70E+00	4.30E+00	*0E0
G-Alpha	Ci	5.00E-08	3.06E-08	*0E0	*0E0
Sr-90	Ci	*0E0	9.94E-08	*0E0	*0E0
TOTAL FOR PERIOD	Ci	1.23E+01	7.70E+00	4.30E+00	2.82E-06

*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 2-3c (Page 1 of 2)

VOGTLE ELECTRIC GENERATING PLANT
SEMIANNUAL RADIOACTIVE EFFLUENT REPORT
GASEOUS EFFLUENTS - MIXED MODE
January 1, 1990 through June 30, 1990
Site

Nuclides Released	Unit	Continuous Mode		Batch Mode	
		Quarter 1	Quarter 2	Quarter 1	Quarter 2
1. Fission Gases	Ci				
Xe-137	Ci	*0E0	*0E0	*0E0	*0E0
Kr-85m	Ci	7.80E-02	*0E0	1.06E-03	6.20E-07
Kr-85	Ci	*0E0	*0E0	*0E0	1.56E-01
Xe-133	Ci	5.27E+01	2.30E+01	1.83E+01	3.13E+00
Xe-135	Ci	1.92E+00	2.07E+00	2.71E-02	1.71E-01
Ar-41	Ci	*0E0	1.21E+00	1.28E+00	1.78E+00
Xe-131m	Ci	*0E0	*0E0	1.25E+00	1.22E-03
Xe-133m	Ci	*0E0	*0E0	2.38E-01	8.22E-04
TOTAL FOR PERIOD	Ci	5.47E+01	2.63E+01	2.11E+01	5.24E+00
2. Iodines					
I-131	Ci	1.00E-05	1.73E-06	*0E0	*0E0
I-133	Ci	4.80E-06	1.38E-05	*0E0	*0E0
TOTAL FOR PERIOD	Ci	1.48E-05	1.55E-05	*0E0	*0E0

*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.

TABLE 2-3c (Page 2 of 2)
VOGTLE ELECTRIC GENERATING PLANT
SEMIANNUAL RADIOACTIVE EFFLUENT REPORT
GASEOUS EFFLUENTS - MIXED MODE

January 1, 1990 Through June 30, 1990
Site

Nuclides Released	Unit	Continuous Mode		Batch Mode	
		Quarter 1	Quarter 2	Quarter 1	Quarter 2
3. Particulates**					
Co-57	Ci	2.00E-07	3.46E-08	*0E0	*0E0
Co-58	Ci	1.27E-05	3.16E-06	*0E0	2.82E-06
Co-60	Ci	1.67E-06	*0E0	*0E0	*0E0
Mn-54	Ci	8.38E-07	*0E0	*0E0	*0E0
H-3	Ci	4.57E+01	4.09E+01	8.84E+00	1.35E+00
G-Alpha	Ci	3.08E-07	4.09E-07	*0E0	*0E0
Cr-51	Ci	7.06E-06	*0E0	*0E0	*0E0
Fe-59	Ci	3.74E-06	*0E0	*0E0	*0E0
Sr-90	Ci	*0E0	9.94E-08	*0E0	*0E0
TOTAL FOR PERIOD	Ci	4.57E+01	4.09E+01	8.84E+00	1.35E+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 2-4a (Page 1 of 2)

VOGTLE ELECTRIC GENERATING PLANT
SEMIANNUAL RADIOACTIVE EFFLUENT REPORT
GASEOUS EFFLUENTS - GROUND RELEASES
January 1, 1990 Through June 30, 1990
UNIT 1

Nuclides Released	Unit	Continuous Mode Quarter* 1	Continuous Mode Quarter* 2	Batch Mode Quarter* 1	Batch Mode Quarter* 2
1. Fission Gases	Ci				
Kr-85	Ci				
Kr-85m	Ci				
Kr-87	Ci				
Kr-88	Ci				
Xe-133	Ci				
Xe-135	Ci				
Xe-135m	Ci				
Xe-138	Ci				
Xe-133m	Ci				
TOTAL FOR PERIOD	Ci				
2. Iodines					
I-131	Ci				
I-133	Ci				
TOTAL FOR PERIOD	Ci				

*No releases during this period.

TABLE 2-4a (Page 2 of 2)

VOGTLE ELECTRIC GENERATING PLANT
SEMIANNUAL RADIOACTIVE EFFLUENT REPORT
GASEOUS EFFLUENTS - GROUND LEVEL
January 1, 1990 Through June 30, 1990
UNIT 1

Nuclides Released	Unit	Continuous Mode		Batch Mode	
		Quarter* 1	Quarter* 2	Quarter* 1	Quarter* 2
3. Particulates **					
Mn-54	Ci				
Fe-59	Ci				
Co-58	Ci				
Co-60	Ci				
Zn-65	Ci				
Sr-89	Ci				
Sr-90	Ci				
Mo-99	Ci				
Nb-95	Ci				
Cs-134	Ci				
Cs-137	Ci				
Ba-140	Ci				
La-140	Ci				
Ce-144	Ci				
Ce-141	Ci				
TOTAL FOR PERIOD	Ci				

* No releases during this period

** Half lives greater than 8 days

TABLE 2-4b (Page 1 of 2)

VOGTLE ELECTRIC GENERATING PLANT
SEMI-ANNUAL RADIOACTIVE EFFLUENT REPORT
GASEOUS EFFLUENTS - GROUND RELEASES
January 1, 1990 Through June 30, 1990
UNIT 2

Nuclides Released	Unit	Continuous Mode Quarter* 1	Continuous Mode Quarter* 2	Batch Mode Quarter* 1	Batch Mode Quarter* 2
1. Fission Gases	Ci				
Kr-85	Ci				
Kr-85m	Ci				
Kr-87	Ci				
Kr-88	Ci				
Xe-133	Ci				
Xe-135	Ci				
Xe-135m	Ci				
Xe-138	Ci				
Xe-133m	Ci				
TOTAL FOR PERIOD	Ci				
2. Iodines					
I-131	Ci				
I-133	Ci				
I-135	Ci				
TOTAL FOR PERIOD	Ci				

*No releases during this period.

TABLE 2-4b (Page 2 of 2)

VOGTLE ELECTRIC GENERATING PLANT
SEMIANNUAL RADIOACTIVE EFFLUENT REPORT
GASEOUS EFFLUENTS - GROUND LEVEL
January 1, 1990 Through June 30, 1990
UNIT 2

Nuclides Released	Unit	Continuous Mode Quarter* 1	Continuous Mode Quarter* 2	Batch Mode Quarter* 1	Batch Mode Quarter* 2
3. Particulates **					
Mn-54	Ci				
Fe-59	Ci				
Co-58	Ci				
Co-60	Ci				
Zn-65	Ci				
Sr-89	Ci				
Sr-90	Ci				
Mo-99	Ci				
Nb-95	Ci				
Cs-134	Ci				
Cs-137	Ci				
Ba-140	Ci				
La-140	Ci				
Ce-144	Ci				
Ce-141	Ci				
TOTAL FOR PERIOD	Ci				

* 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 RELEASES
January 1, 1990 Through June 30, 1990
Site

Nuclides Released	Unit	Continuous Mode Quarter* 1	Continuous Mode Quarter* 2	Batch Mode Quarter* 1	Batch Mode Quarter* 2
1. Fission Gases	Ci				
Kr-85	Ci				
Kr-85m	Ci				
Kr-87	Ci				
Kr-88	Ci				
Xe-133	Ci				
Xe-135	Ci				
Xe-135m	Ci				
Xe-138	Ci				
Xe-133m	Ci				
TOTAL FOR PERIOD	Ci				
2. Iodines					
I-131	Ci				
I-133	Ci				
TOTAL FOR PERIOD	Ci				

*No releases during this period.

TABLE 2-4c (Page 2 of 2)
VOGTLE ELECTRIC GENERATING PLANT
SEMIANNUAL RADIOACTIVE EFFLUENT REPORT
GASEOUS EFFLUENTS - GROUND LEVEL
January 1, 1990 Through June 30, 1990
Site

Nuclides Released	Unit	Continuous Mode		Batch Mode	
		Quarter* 1	Quarter* 2	Quarter* 1	Quarter* 2
3. Particulates **					
Mn-54	Ci				
Fe-59	Ci				
Co-58	Ci				
Co-60	Ci				
Zn-65	Ci				
Sr-89	Ci				
Sr-90	Ci				
Mo-99	Ci				
Nb-95	Ci				
Cs-134	Ci				
Cs-137	Ci				
Ba-140	Ci				
La-140	Ci				
Ce-144	Ci				
Ce-141	Ci				
TOTAL FOR PERIOD	Ci				

* No releases during this period.

** Half lives greater than 8 days

TABLE 2-5 INTENTIONALLY LEFT BLANK

TABLE 2-6A
VOGTLE ELECTRIC GENERATING PLANT
SEMIANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
AIR DOSES DUE TO NOBLE GAS RELEASES

January 1, 1990 Through June 30, 1990
UNIT 1

Type of Radiation	Tech Spec Limit	Units	Quarter 1	% of Tech Limit	Quarter 2	% of Tech Limit
Gamma	5.0	mrad	5.00E-04	1.00E-02	1.75E-04	3.50E-03
Beta	10.0	mrad	1.03E-03	1.03E-02	4.86E-04	4.86E-03

Cumulative Doses Per Year (Year to Date)				
Gamma	10.0	mrad	6.75E-04	6.75E-03
Beta	20.0	mrad	1.52E-03	7.60E-03

TABLE 2-6b
VOGTLE ELECTRIC GENERATING PLANT
SEMIANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
AIR DOSES DUE TO NOBLE GAS RELEASES

January 1, 1990 Through June 30, 1990
UNIT 2

Type of Radiation	Tech Spec Limit	Units	Quarter 1	% of Tech Limit	Quarter 2	% of Tech Limit
Gamma	5.0	mrad	1.03E-04	2.06E-03	5.74E-04	1.15E-02
Beta	10.0	mrad	2.27E-04	2.27E-03.	6.19E-04	6.19E-03

Cumulative Doses Per Year (Year to Date)				
Gamma	10.0	mrad	6.77E-04	6.77E-03
Peta	20.0	mrad	8.46E-04	4.23E-03

TABLE 2-7A

VOGTLE ELECTRIC GENERATING PLANT
SEMIANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
INDIVIDUAL DOSES DUE TO RADIOIODINE, TRITIUM
AND PARTICULATES IN GASEOUS RELEASES
January 1, 1990 Through June 30, 1990
UNIT 1

Cumulative Dose Per Quarter

Organ	Tech Spec Limit	Units	Quarter 1	% of Tech Limit	Quarter 2	% of Tech Limit
Bone	7.5	mrem	1.40E-06	1.87E-05	8.68E-08	1.16E-06
Liver	7.5	mrem	1.73E-04	2.31E-03	1.56E-04	2.08E-03
T. Body	7.5	mrem	1.73E-04	2.31E-03	1.56E-04	2.08E-03
Thyroid	7.5	mrem	1.73E-04	2.31E-03	1.56E-04	2.08E-03
Kidney	7.5	mrem	1.73E-04	2.31E-03	1.56E-04	2.08E-03
Lung	7.5	mrem	1.74E-04	2.32E-03	1.56E-04	2.08E-03
GI-LLI	7.5	mrem	1.73E-04	2.31E-03	1.56E-04	2.08E-03

Cumulative Dose Per Year

Organ	Tech Spec Limit	Units	Year to Date	% of Tech Spec Limit
Bone	15.0	mrem	1.49E-06	9.93E-06
Liver	15.0	mrem	3.30E-04	2.20E-03
T. Body	15.0	mrem	3.30E-04	2.20E-03
Thyroid	15.0	mrem	3.30E-04	2.20E-03
Kidney	15.0	mrem	3.30E-04	2.20E-03
Lung	15.0	mrem	3.30E-04	2.20E-03
GI-LLI	15.0	mrem	3.29E-04	2.19E-03

TABLE 2-7b

VOGTLE ELECTRIC GENERATING PLANT
SEMIANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
INDIVIDUAL DOSES DUE TO RADIOIODINE, TRITIUM
AND PARTICULATES IN GASEOUS RELEASES
January 1, 1990 Through June 30, 1990
UNIT 2

Cumulative Dose Per Quarter

Organ	Tech Spec Limit	Units	Quarter 1	% of Tech Limit	Quarter 2	% of Tech Limit
Bone	7.5	mrem	0.00E+00	0.00E+00	7.66E-08	1.02E-06
Liver	7.5	mrem	7.52E-05	1.00E-03	3.49E-05	4.65E-04
T. Body	7.5	mrem	7.52E-05	1.00E-03	3.49E-05	4.65E-04
Thyroid	7.5	mrem	7.52E-05	1.00E-03	3.50E-05	4.67E-04
Kidney	7.5	mrem	7.52E-05	1.00E-03	3.49E-05	4.65E-04
Lung	7.5	mrem	7.52E-05	1.00E-03	3.50E-05	4.67E-04
GI-LLI	7.5	mrem	7.52E-05	1.00E-03	3.49E-05	4.65E-04

Cumulative Dose Per Year

Organ	Tech Spec Limit	Units	Year to Date	% of Tech Spec Limit
Bone	15.0	mrem	7.66E-08	5.11E-07
Liver	15.0	mrem	1.10E-04	7.33E-04
T. Body	15.0	mrem	1.10E-04	7.33E-04
Thyroid	15.0	mrem	1.10E-04	7.33E-04
Kidney	15.0	mrem	1.10E-04	7.33E-04
Lung	15.0	mrem	1.10E-04	7.33E-04
GI-LLI	15.0	mrem	1.10E-04	7.33E-04

TABLE 2-8

LOWER LIMITS OF DETECTION - GASEOUS SAMPLE ANALYSES
VOGTLE ELECTRIC GENERATING PLANT
JANUARY 1, 1990 - JUNE 30, 1990

The values in this table represent apriori lower limit of dete[illegible] (LLD) which are typically achieved in laboratory analyses of [illegible] radwaste samples.

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

* 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 unit 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)

6.12.1

The PCP shall be approved by the Commission prior to implementation.

6.12.2

Licensee - initiated changes to the PCP.

a. Shall be submitted to the Commission in the Semiannual Radioactive Effluent Release Report for the period in which the change(s) was made. This submittal shall contain:

   1. Sufficiently detailed information to totally support the rationale for the change without benefit of additional or supplemental information;

2. A determination that the change did not reduce the overall conformance of the solidified waste product to existing criteria for solid wastes, and

3. Documentation of the fact that the change has been reviewed and found acceptable by the PRB.

b. Shall become effective upon approval by the General Manager Nuclear Plant.

For this reporting period there was no revision to the PCP.

3.2 Solid Waste Data

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

TABLE 3-1 (Page 1 of)

VOGTLE ELECTRIC GENERATING PLANT
JANUARY 1, 1990 THROUGH JUNE 30, 1990
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
SOLID AND IRRADIATED FUEL SHIPMENTS

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 evaporator bottom, etc.	m^3	1.322E+01	1.00E+01
		Ci	1.191E+02	
b.	Dry compressible waste, contaminated equipment, etc.	m^3	1.478E+01	
		Ci	7.079E-02	4.00E+01
c.	Irradiated components, control rod, etc.	m^3	*	*
		Ci	*	*
d	Other (describe) oily trash speedi-dry mix equipment, etc., Solidified oil, CRD filters	m^3	*	*
		Ci	*	*

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

	Isotope	Percent	Curies
a.	Co-58	2.617E+01	3.117E+01
	Co-60	3.053E+01	3.636E+01
	All others	4.330E+01	5.157E+01
b.	Co-60	4.336E+01	3.069E-02
	Fe-55	2.398E+01	1.698E-02
	All others	3.268E+01	2.313E-02

* No solid waste during this report period.

TABLE 3-1 (Page 2 of 2)
VOGTLE ELECTRIC GENERATING PLANT
JANUARY 1, 1990 THROUGH JUNE 30, 1990
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
SOLID AND IRRADIATED FUEL SHIPMENTS

	Isotope	Percent	Curies
c.	None shipped this period		
d.	Co-60	*	*
	Zn-65	*	*
	Nb-95	*	*
	Zr-95	*	*
	All others	*	*

* No solid waste shipped during this report period.

3. Solid Waste Disposition

Number of Shipments	Mode of Transportation	Destination
3	Tractor and Shielded cask	Chem Nuclear Barnwell, S.C.
4	Tractor -Trailer	Scientific Ecology, Oakridge, 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-90-001	A stable	High Integrity	LSA	N/A
RWS-90-002	Class B	" "	LSA	N/A
RWS-90-003	A stable	" "	LSA	N/A
RVRS-90-001	A unstable	Strong-Tight	LSA	N/A
RVRS-90-002	A unstable	Strong-Tight	LSA	N/A
RVRS-90-003	A unstable	" "	LSA	N/A
RVRS-90-004	A unstable	" "	LSA	N/A

NOTES: Vogtle Electric Generating Plant performed three (3) shipments to Chem Nuclear, Barnwell, SC and four (4) shipments 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.

4.0 Changes to the Vogtle Electric Generating Plant ODCM

6.8.1.4

Technical Specification 6.8.1.4 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 were no changes to the Vogtle Electric Generating Plant ODCM for the period of January 1, 1990 through June 30, 1990.

6.13.2

Licensee-initiated changes to the ODCM

a. Shall be submitted to the Commission in the Semiannual Radioactive Effluent Release Report for the period in which the change(s) was made effective. The submittal shall contain:

   1. Sufficiently detailed information to totally support the rationale for the change without benefit of supplemental information. Information submitted should consist of a package of those pages of the ODCM to be changed, with each page numbered, dated and containing the revision number together with appropriate analyses or evaluation justifying the change(s);

   2. A determination that the change will not reduce the accuracy or reliability of dose calculations or setpoint determinations; and

   3. Documentation of the fact that the change has been reviewed and found acceptable by the PRB.

b. Shall become effective upon approval by the General Manager - Nuclear Plant.

3.12.1

The Radiological Environmental Monitoring Program shall be conducted as specified in Table 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 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.

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 Tables 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	1	2
Mixed Mode	5.45E+01	4.23E+01

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)	7.69E-07	9.44E-05
Maximum Organ (Thyroid) - Inhalation and ground-plane	1.08E-06	1.42E-04

Table 5-1

JANUARY 1,1990 THROUGH JUNE 30,1990

Basic Data Assumed in Dose assessments
TO MEMBERS OF THE PUBLIC

Item		Visitors 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 (4hr/yr)	0.228 (2000 hr/yr)
Age group		Child	Adult

(1) Ground level release
(2) Mixed mode release

	VISITORS CENTER			PLANT WILSON		
	Quarter 1 mrem	Quarter 2 mrem	Total mrem	Quarter 1 mrem	Quarter 2 mrem	Total mrem
Total Body	3.73e-07	3.96e-07	7.69e-07	4.58e-05	4.86e-05	9.44e-05
ORGAN DOSE						
Bone	4.13E-09	4.27E-10	4.56E-09	7.34E-07	6.93E-08	8.03E-07
Liver	6.06E-07	4.68E-07	1.07E-06	7.99E-05	6.15E-05	1.41E-04
TBody	6.06E-07	4.68E-07	1.07E-06	7.99E-05	6.15E-05	1.41E-04
Thyroid	6.08E-07	4.69E-07	1.08E-06	8.00E-05	6.15E-05	1.42E-04
Kidney	6.06E-07	4.68E-07	1.07E-06	7.99E-05	6.15E-05	1.41E-04
Lung	6.06E-07	4.68E-07	1.07E-06	8.00E-05	6.15E-05	1.42E-04
GI	6.06E-07	4.68E-07	1.07E-06	7.99E-05	6.15E-05	1.41E-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.

6.14.1

Licensee-initiated major changes to the Radwaste Treatment Systems (liquid, gaseous, and solid):

a. Shall be reported to the Commission in the Semiannual Radiactive Effluent Release Report for the period in which the evaluation was reviewed by the PRB. The discussion of each change shall contain:

1. A summary of the evaluation that led to the determination that the change could be made in accordance with 10 CFR 50.59;

2. Sufficient detailed information to totally support the reason for the change without benefit of additional or supplemental information;

3. A detailed description of equipment, components, and processes involved and the interfaces with other plant systems;

4. An evaluation of the change, which shows the predicted releases of radioactive materials in liquid and gaseous effluents and/or quantity of solid waste that differ from those previously predicted in the License Application and amendments thereto;

5. An evaluation of the change, which shows the expected maximum exposures to a MEMBER OF THE PUBLIC in the UNRESTRICTED AREA and to the general population that differ from those previously estimated in the License application and amendments thereto;

6. A comparison of the predicted releases of radioactive materials, in liquid and gaseous effluents and in solid waste, to the actual releases for the period prior to when the change is to be made;

7. An estimate of the exposure to plant operating personnel as a result of the change; and

8. Documentation of the fact that the change was reviewed and found acceptable by the PRB.

b. Shall become effective upon approval by the General Manager Nuclear Plant.

There have been no major changes to the Liquid, Gaseous or Solid Radwaste Treatment Systems during this report period.

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 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, atmospheric stability, and precipitation (if measured), or in the form of joint frequency distributions of wind speed, wind direction, and atmospheric stability.

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.

3.3.3.9 states in part:

The radioactive liquid effluent monitoring instrumentation channels shown in Table 3.3-9 shall be OPERABLE . . .

Action b. states:

With less than the minimum number of radioactive liquid effluent monitoring instrumentation channels OPERABLE, take the ACTION shown in Table 3.3-9. Restore the inoperable instrumentation to OPERABLE status within 30 days and, if unsuccessful, explain in the next Semiannual Radioactive Effluent Release Report pursuant to Specification 6.8.1.4 why this inoperability was not corrected in a timely manner.

3.3.3.10 states in part:

The radioactive gaseous effluent monitoring instrumentation channels shown in Table 3.3-10 shall be OPERABLE . . .

Action b. states:

With less than the minimum number of radioactive gaseous effluent monitoring instrumentation channels OPERABLE, take the ACTION shown in Table 3.3-10. Restore the inoperable instrumentation to OPERABLE status within 30 days and, if unsuccessful, explain in the next Semiannual Radioactive Effluent Release Report pursuant to specification 6.8.1.4 why this inoperability was not corrected in a timely manner.

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 open 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 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 specification 3.11.1.4 or 3.11.2.6, respectively ".

3.11.1.4.

The quantity of radioactive material contained in each outside temporary tank shall be limited to less than or equal to 10 Curies, excluding tritium and dissolved or entrained noble gases.

Action A states:

With the quantity of radioactive material in any of the outside temporary tanks exceeding the above limit, immediately suspend all additions of radioactive material to the tank, within 48 hours, reduce the tank contents to within the limit, and describe the events leading to this condition in the next Semiannual Radioactive Effluent Release Report, pursuant to specification 6.8.1.4.

3.11.2.6

The quantity of radioactivity contained in each gas decay tank shall be limited to less than or equal to 265 curies of noble gases (considered as Xe-133 equivalent).

Action A states:

With the quantity of radioactive material in any gas decay tank exceeding the above limit, immediately suspend all additions of radioactive material to the tank, within 48 hours reduce the tank contents to within the limit, and describe the events leading to this condition in the next Semiannual Radioactive Effluent Release Report, pursuant to specification 6.8.1.4.

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

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