Edwin I. Hatch Nuclear Plant
Joseph M. Farley Nuclear Plant
Vogtle Electric Generating Plant
Annual Radioactive Effluent Release Reports for 2008

Enclosure 1

Hatch Annual Radioactive Effluent Release Report for 2008

SOUTHERN COMPANY

E. I. HATCH NUCLEAR PLANT

UNITS NO. 1 & 2

ANNUAL REPORT

PLANT RADIOACTIVE EFFLUENT RELEASES

JANUARY 1, 2008 THROUGH DECEMBER 31, 2008

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SOUTHERN COMPANY

E. I. HATCH NUCLEAR PLANT

UNITS NO. 1 & 2

ANNUAL REPORT

PLANT RADIOACTIVE EFFLUENT RELEASES

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1.0 Liquid Effluents

1.1 Regulatory Requirements

1.1.1 Concentration Limits

The concentration of radioactive material released in liquid effluents to UNRESTRICTED AREAS shall be limited to ten times the concentrations specified in 10 CFR Part 20, Appendix B, Table 2, Column 2, for radionuclides other than dissolved or entrained noble gases. For dissolved or entrained noble gases, the concentration shall be limited to 1E-04 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 Effluent Concentration Limit

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

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

For gross alpha in liquid radwaste, the ECL is 2E-09 uCi/ml.

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

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

The method utilizing the ECL fraction to determine the dose released from groundwater outfalls is described in Subsection 1.4 of this report.

1.3 Measurements and Approximations of Total Radioactivity for Liquid Radwaste

Prior to the release of any tank containing liquid radwaste, following the required recirculations, samples are collected and analyzed in accordance with the Edwin I. Hatch Nuclear Plant Offsite Dose Calculation Manual (ODCM) Table 2-3. A sample from each tank planned for release is analyzed for principal gamma emitters, I-131, and dissolved and entrained noble gases, by gamma spectroscopy. Monthly and quarterly composites are prepared for analysis by extracting aliquots from each sample taken from the tanks released. Liquid radwaste sample analyses are performed as described in Section 1.3.1.

1.3.1 Total Radioactivity Determination for Liquid Radwaste

MEASUREMENT	FREQUENCY	METHOD
1. Gamma Isotopic	Each Batch	Gamma Spectroscopy with computerized data reduction.
2. Dissolved or entrained noble gas	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 using germanium detectors with a resolution of 2.0 keV or lower. The detectors are shielded by four inches of lead. A liquid radwaste sample is typically counted for 2000 seconds and a peak search of the resulting gamma ray spectrum is performed. Energy and net count data for all significant peaks are determined and a quantitative reduction or MDC calculation is performed to ensure that the MDC's are met for the nuclides specified in the ODCM Chapter 10 (i.e., Mn-54, Fe-59, Co-58, Co-60, Zn-65, Mo-99, Cs-134, Cs-137, Ce-141 and Ce-144). The quantitative calculations, corrections for counting time, decay time, sample volume, sample geometry, detector efficiency, baseline counts, branching ratio and MDC calculations, are made based on the counts at the location in the spectrum where the peak for that radionuclide would be located, if present. Typically achieved liquid effluent sample analyses minimum detectable concentrations are reported in Table 1-4.

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

The radionuclide concentrations determined by gamma spectroscopic analysis of samples taken from tanks planned for release, in addition to the most current sample analysis results available for tritium, gross alpha, Sr-89, Sr-90 and Fe-55, are used along with the corresponding ECL values to determine the ECL fraction for these tanks. This ECL fraction is then used, with the appropriate safety factors, tolerance factors, and the expected 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 the ODCM are not exceeded.

A monitor reading in excess of the calculated setpoint will result 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 the liquid effluent radiation monitor calibration factor, are entered into the computer and a pre-release printout is generated. If the release is not permissible, appropriate warnings will be displayed on the computer screen. If the release is permissible, it is approved by the Chemistry Foreman on duty. The pertinent information is transferred manually from the prerelease printout to a one-page release permit, which is forwarded to Radwaste Operations. When the release is completed, the release permit is returned from Radwaste Operations to Chemistry with the actual release data provided. These data are input into the computer and a post-release printout is generated. The post release printout contains the actual release rates, the actual release concentrations and quantities, the actual dilution flow, and the calculated doses to a Member of the Public.

1.4 Measurements and Approximations of Total Radioactivity for Groundwater Outfalls – Y22N003A/12B and Y22N008A

Samples are collected and analyzed in accordance with the Edwin I. Hatch Nuclear Plant Offsite Dose Calculation Manual (ODCM) Table 2-3. Weekly, monthly and quarterly composites are prepared for analysis by extracting aliquots from each outfall's automatic sampler, which collects a composite sample over a seven-day period. Sample analyses are performed as described in Section 1.4.1.

1.4.1 Total Radioactivity Determination for Groundwater Outfalls

MEASUREMENT	FREQUENCY	METHOD
1. Gamma Isotopic	Weekly Composite	Gamma Spectroscopy with computerized data reduction.
2. Tritium	Weekly Composite	Distillation and liquid scintillation counting
3. Gross Beta *	Quarterly Composite	Chemical separation and gas flow proportional or scintillation counting
4. Sr-89 & Sr-90 **	Quarterly Composite (as required)	Chemical separation and gas flow proportional or scintillation counting

* Gross Beta analysis is used for sample screening.
** If the Gross Beta analysis yields a detectable value above background, a Sr-89/90 analysis will be performed.

Gamma isotopic measurements are performed in-house using germanium detectors with a resolution of 2.0 keV or lower. The detectors are shielded by four inches of lead. A weekly composite sample is typically counted to Environmental MDC's and a peak search of the resulting gamma ray spectrum is performed. Energy and net count data for all significant peaks are determined and a quantitative reduction or MDC calculation is performed to ensure that the MDC's are met for the nuclides specified in the ODCM Chapter 10 (i.e., Mn-54, Fe-59, Co-58, Co-60, Zn-65, Mo-99, Cs-134, Cs-137, Ce-141 and Ce-144). The quantitative calculations, corrections for counting time, decay time, sample volume, sample geometry, detector efficiency, baseline counts, branching ratio and MDC calculations, are made based on the counts at the location in the spectrum where the peak for that radionuclide would be located, if present. Typically achieved liquid effluent sample analyses minimum detectable concentrations are reported in Table 1-4.

Tritium, Gross Beta, Sr-89 and Sr-90 are, in some cases, analyzed offsite.

The radionuclide concentrations determined by gamma spectroscopic analysis of the weekly composite sample, in addition to the most current sample analysis results available for tritium, gross beta, Sr-89 and Sr-90, are used along with the corresponding ECL values to determine the ECL fraction for these composite samples. This ECL fraction is then used, with the appropriate safety factors, tolerance factors, and the expected dilution stream flow to calculate projected dose released.

Radionuclide concentrations, safety factors and dilution stream flow rate are entered into the computer and a pre-release printout is generated for each release period. When the release period is complete, the release permit is updated with the actual release data collected during the release period. These data are input into the computer and a post-release printout is generated. The post release printout contains the actual release rates, the actual release concentrations and quantities, the actual dilution flow, and the calculated doses to a Member of the Public. Cumulative dose results are tabulated along with the percent of the ODCM limit for each release period, for the current quarter and year.

1.5 Total Error Estimation

The maximum error associated with volume and flow measurements, based upon plant calibration practice, is estimated to be + or - 10%. The average error associated with counting is estimated to be less than + or - 15%. Therefore, the total error estimation is + or - 18%.

1.6 Liquid Effluent Release Data

Regulatory Guide 1.21, Tables 2A and 2B are found in this report as Table 1-1A, for Unit 1, Table 1-1B, for Unit 2 and Table 1-1C, for the site; and Table 1-2A, for Unit 1, 1-2B, for Unit 2, and Table 1-2C, for the site. Typical liquid minimum detectable concentrations (MDC's) used for analyses are found in Table 1-4.

The evaluation for the release of radioactive RHR Service Water for 2008 can be found in Appendix A of this report.

The values for the four categories of Tables 1-1A, and 1-1B, and 1-1C, are calculated and the Tables completed as follows:

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.

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.

3. Dissolved and entrained gases - Concentrations of dissolved and entrained gases in liquid effluents are measured by germanium spectroscopy using a one liter sample from each liquid radwaste batch. The measured concentrations are used to calculate the total release and the average diluted concentration during the period. 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.

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

1.7 Radiological Impact Due to Liquid Releases

Doses to a Member of the Public due to radioactivity in liquid effluents were calculated in accordance with the Offsite Dose Calculation Manual. Results are presented in Table 1-3A for Unit 1, and 1-3B for Unit 2, for all four quarters.

1.8 Liquid Effluents - Batch Releases

Batch Release information for Units 1 and 2 is summarized in the following tables:

Unit 1 Liquid Batch Releases:	Table 1-5A
Unit 2 Liquid Batch Releases:	Table 1-5B

1.9 Liquid Effluents - Continuous Releases

Continuous Release information is summarized in the following tables:

Unit 1 Liquid Continuous Releases:	Table 1-2A
Unit 2 Liquid Continuous Releases:	Table 1-2B
Hatch Site Conitinuous Releases:	Table 1-2C

1.10 Liquid Effluents - Abnormal Releases

There were no abnormal liquid releases for this reporting period.

Table 1-1A

Hatch Nuclear Plant

RADIOACTIVE EFFLUENT RELEASE REPORT - 2008

Liquid Effluents - Summation Of All Releases

Unit: 1

Starting: 1-Jan- 2008 Ending: 31-Dec-2008

Type of Effluent	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter
A. Fission And Activation Products					
1. Total Release (not including tritium, gases, alpha)	Curies	2.49E-03	1.72E-02	3.05E-03	1.12E-03
2. Average diluted concentration during period	uCi/mL	6.67E-09	5.83E-08	8.05E-09	2.60E-08
3. Percent of Applicable Limit	%	*	*	*	*
B. Tritium					
1. Total Release	Curies	9.61E+00	1.10E+01	8.61E+00	5.76E-01
2. Average diluted Concentration during period	uCi/mL	2.58E-05	3.72E-05	2.27E-05	1.34E-05
3. Percent of Applicable Limit	%	*	*	*	*
C. Dissolved and Entrained Gases					
1. Total Release	Curies	0.00E+00	4.96E-07	1.17E-06	0.00E+00
2. Average diluted Concentration during period	uCi/mL	0.00E+00	1.68E-12	3.09E-12	0.00E+00
3. Percent of Applicable Limit	%	*	*	*	*
D: Gross Alpha Radioactivity					
1. Total Release	Curies	8.49E-07	4.79E-07	6.89E-07	6.37E-08
E: Waste Vol Release (Pre-Dilution)	Liters	1.26E+07	1.30E+07	2.03E+07	1.89E+07
F. Volume of Dilution Water Used	Liters	3.73E+08	2.94E+08	3.79E+08	4.30E+07

* Applicable limits are expressed in terms of dose. See Tables 1-3A and 1-3B of this report.

Table 1-1B

Hatch Nuclear Plant

RADIOACTIVE EFFLUENT RELEASE REPORT - 2008

Liquid Effluents - Summation Of All Releases

Unit: 2

Starting: 1-Jan- 2008 Ending: 31-Dec-2008

Type of Effluent	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter
A. Fission And Activation Products					
1. Total Release (not including tritium, gases, alpha)	Curies	1.79E-03	4.21E-03	2.27E-03	6.37E-05
2. Average diluted concentration during period	uCi/mL	4.37E-10	7.56E-10	4.25E-10	1.59E-11
3. Percent of Applicable Limit	%	*	*	*	*
B. Tritium					
1. Total Release	Curies	6.64E+00	5.93E+00	1.64E+00	1.50E-01
2. Average diluted Concentration during period	uCi/mL	1.63E-06	1.07E-06	3.06E-07	3.74E-08
3. Percent of Applicable Limit	%	*	*	*	*
C. Dissolved and Entrained Gases					
1. Total Release	Curies	6.87E-06	1.13E-06	0.00E+00	0.00E+00
2. Average diluted Concentration during period	uCi/mL	1.68E-12	2.04E-13	0.00E+00	0.00E+00
3. Percent of Applicable Limit	%	*	*	*	*
D: Gross Alpha Radioactivity					
1. Total Release	Curies	7.60E-08	0.00E+00	9.53E-08	0.00E+00
E: Waste Vol Release (Pre-Dilution)	Liters	4.37E+06	3.66E+06	3.36E+06	2.70E+06
F. Volume of Dilution Water Used	Liters	4.08E+09	5.57E+09	5.35E+09	4.01E+09

* Applicable limits are expressed in terms of dose. See Tables 1-3A and 1-3B of this report.

Table 1-1C

Hatch Nuclear Plant

RADIOACTIVE EFFLUENT RELEASE REPORT - 2008

Liquid Effluents - Summation Of All Releases

Unit: Site

Starting: 1-Jan- 2008 Ending: 31-Dec-2008

Type of Effluent	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter
A. Fission And Activation Products					
1. Total Release (not including tritium, gases, alpha)	Curies	4.27E-03	2.14E-02	5.33E-03	1.18E-03
2. Average diluted concentration during period	uCi/mL	9.59E-10	3.65E-09	9.29E-10	2.92E-10
3. Percent of Applicable Limit	%	*	*	*	*
B. Tritium					
1. Total Release	Curies	1.63E+01	1.69E+01	1.02E+01	7.26E-01
2. Average diluted Concentration during period	uCi/mL	3.65E-06	2.88E-06	1.79E-06	1.79E-07
3. Percent of Applicable Limit	%	*	*	*	*
C. Dissolved and Entrained Gases					
1. Total Release	Curies	6.87E-06	1.63E-06	1.17E-06	0.00E+00
2. Average diluted Concentration during period	uCi/mL	1.54E-12	2.78E-13	2.05E-13	0.00E+00
3. Percent of Applicable Limit	%	*	*	*	*
D: Gross Alpha Radioactivity					
1. Total Release	Curies	9.25E-07	4.79E-07	7.85E-07	6.37E-08
E: Waste Vol Release (Pre-Dilution)	Liters	1.69E+07	1.67E+07	2.37E+07	2.16E+07
F. Volume of Dilution Water Used	Liters	4.46E+09	5.86E+09	5.73E+09	4.05E+09

* Applicable limits are expressed in terms of dose. See Tables 1-3A and 1-3B of this report.

Table 1-2A

Hatch Nuclear Plant

RADIOACTIVE EFFLUENT RELEASE REPORT - 2008

Liquid Effluents

Unit: 1

Starting: 1-Jan-2008 Ending: 31-Dec-2008

Nuclides Released	Unit	Continuous Mode			
		1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter
Fission & Activation Products					
Sr-89	Curies	1.02E-05	4.81E-04	0.00E+00	0.00E+00
Sr-90	Curies	3.28E-05	5.48E-05	0.00E+00	0.00E+00
G-Beta	Curies	0.00E+00	0.00E+00	7.37E-07	8.99E-05
Total For Period	**Curies**	**4.30E-05**	**5.36E-04**	**7.37E-07**	**8.99E-05**
Tritium					
H-3	Curies	1.76E-02	2.47E-02	3.57E-02	1.64E-02
Dissolved And Entrained Gases					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Zeroes in this table indicates that no radioactivity was present at detectable levels.
See Table 1-4 for typical minimum detectable concentrations.

Table 1-2A

Hatch Nuclear Plant

RADIOACTIVE EFFLUENT RELEASE REPORT - 2008

Liquid Effluents

Unit: 1

Starting: 1-Jan-2008 Ending: 31-Dec-2008

Nuclides Released	Unit	Batch Mode			
		1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter
Fission & Activation Products					
Co-58	Curies	4.79E-06	7.50E-06	2.84E-05	0.00E+00
Co-60	Curies	1.14E-03	5.57E-04	6.68E-04	4.10E-05
Cr-51	Curies	1.86E-04	0.00E+00	0.00E+00	0.00E+00
Fe-55	Curies	6.06E-04	1.56E-02	1.43E-03	9.42E-04
Mn-54	Curies	2.37E-04	1.23E-04	1.93E-04	6.40E-06
Na-24	Curies	8.13E-06	4.62E-05	1.52E-04	3.65E-06
Nb-97	Curies	2.82E-06	0.00E+00	0.00E+00	0.00E+00
Sr-89	Curies	3.18E-05	1.56E-05	5.72E-05	0.00E+00
Zn-65	Curies	4.14E-05	5.25E-05	7.66E-05	0.00E+00
Cs-134	Curies	3.80E-06	0.00E+00	0.00E+00	0.00E+00
Cs-137	Curies	1.77E-04	2.07E-04	4.36E-04	3.59E-05
Sb-122	Curies	3.26E-07	0.00E+00	0.00E+00	0.00E+00
Sb-124	Curies	5.46E-06	0.00E+00	0.00E+00	0.00E+00
Zn-69M	Curies	1.17E-06	0.00E+00	1.36E-05	0.00E+00
Ag-110M	Curies	2.54E-06	0.00E+00	0.00E+00	0.00E+00
Total For Period	**Curies**	**2.44E-03**	**1.66E-02**	**3.05E-03**	**1.03E-03**
Tritium					
H-3	Curies	9.60E+00	1.09E+01	8.57E+00	5.60E-01
Dissolved And Entrained Gases					
Xe-135	Curies	0.00E+00	4.96E-07	1.17E-06	0.00E+00
Total For Period	**Curies**	**0.00E+00**	**4.96E-07**	**1.17E-06**	**0.00E+00**

Zeroes in this table indicates that no radioactivity was present at detectable levels.
See Table 1-4 for typical minimum detectable concentrations.

Table 1-2B

Hatch Nuclear Plant
RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Liquid Effluents
Unit: 2
Starting: 1-Jan-2008 Ending: 31-Dec-2008

		Continuous Mode			
Nuclides Released	**Unit**	**1ST Quarter**	**2ND Quarter**	**3RD Quarter**	**4TH Quarter**
Fission & Activation Products					
Sr-90	Curies	4.31E-07	4.87E-06	0.00E+00	0.00E+00
G-Beta	Curies	1.27E-06	1.64E-05	1.69E-05	0.00E+00
Total For Period	**Curies**	**1.70E-06**	**2.13E-05**	**1.69E-05**	**0.00E+00**
Tritium					
H-3	Curies	5.81E-02	1.04E-01	7.56E-02	4.07E-02
Dissolved And Entrained Gases					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Zeroes in this table indicates that no radioactivity was present at detectable levels.
See Table 1-4 for typical minimum detectable concentrations.

Table 1-2B

Hatch Nuclear Plant
RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Liquid Effluents
Unit: 2
Starting: 1-Jan-2008 Ending: 31-Dec-2008

Nuclides Released	Unit	Batch Mode			
		1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter
Fission & Activation Products					
As-76	Curies	1.14E-04	0.00E+00	0.00E+00	0.00E+00
Co-58	Curies	2.62E-05	2.87E-06	5.28E-07	0.00E+00
Co-60	Curies	3.72E-04	1.48E-04	6.67E-05	6.87E-06
Cr-51	Curies	6.32E-05	2.26E-05	0.00E+00	0.00E+00
Fe-55	Curies	5.13E-04	3.81E-03	2.04E-03	5.45E-05
Fe-59	Curies	7.59E-06	0.00E+00	0.00E+00	0.00E+00
I-131	Curies	0.00E+00	0.00E+00	1.02E-06	0.00E+00
Mn-54	Curies	2.20E-04	8.54E-05	3.35E-05	2.28E-06
Mn-56	Curies	1.82E-05	0.00E+00	0.00E+00	0.00E+00
Na-24	Curies	1.85E-04	0.00E+00	8.44E-05	0.00E+00
Nb-97	Curies	7.04E-06	1.77E-05	9.53E-07	0.00E+00
Sr-89	Curies	1.36E-05	1.37E-05	3.55E-06	0.00E+00
Y-91M	Curies	2.41E-05	0.00E+00	0.00E+00	0.00E+00
Zn-65	Curies	5.28E-05	5.18E-05	8.93E-06	0.00E+00
Ce-141	Curies	2.83E-06	0.00E+00	0.00E+00	0.00E+00
Cs-137	Curies	9.11E-05	3.16E-05	1.63E-05	0.00E+00
Ru-103	Curies	4.13E-07	0.00E+00	0.00E+00	0.00E+00
Sb-122	Curies	9.79E-07	0.00E+00	0.00E+00	0.00E+00
Sb-124	Curies	1.64E-05	0.00E+00	0.00E+00	0.00E+00
Tc-99M	Curies	2.08E-06	0.00E+00	0.00E+00	0.00E+00
Zn-69M	Curies	4.25E-05	7.05E-07	0.00E+00	0.00E+00
Ag-110M	Curies	1.09E-05	0.00E+00	7.40E-07	0.00E+00
Total For Period	**Curies**	**1.78E-03**	**4.19E-03**	**2.26E-03**	**6.37E-05**

Zeroes in this table indicates that no radioactivity was present at detectable levels.
See Table 1-4 for typical minimum detectable concentrations.

Table 1-2B

Hatch Nuclear Plant

RADIOACTIVE EFFLUENT RELEASE REPORT - 2008

Liquid Effluents

Unit: 2

Starting: 1-Jan-2008 Ending: 31-Dec-2008

Nuclides Released	Unit	Batch Mode			
		1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter
Tritium					
H-3	Curies	6.58E+00	5.83E+00	1.56E+00	1.09E-01
Dissolved And Entrained Gases					
Xe-135	Curies	6.87E-06	1.13E-06	0.00E+00	0.00E+00
Total For Period	**Curies**	**6.87E-06**	**1.13E-06**	**0.00E+00**	**0.00E+00**

Zeroes in this table indicates that no radioactivity was present at detectable levels.
See Table 1-4 for typical minimum detectable concentrations.

Table 1-2C

Hatch Nuclear Plant
RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Liquid Effluents
Unit: Site
Starting: 1-Jan-2008 Ending: 31-Dec-2008

Nuclides Released	Unit	Continuous Mode			
		1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter
Fission & Activation Products					
Sr-89	Curies	1.02E-05	4.81E-04	0.00E+00	0.00E+00
Sr-90	Curies	3.32E-05	5.97E-05	0.00E+00	0.00E+00
G-Beta	Curies	1.27E-06	1.64E-05	1.76E-05	8.99E-05
Total For Period	**Curies**	**4.47E-05**	**5.57E-04**	**1.76E-05**	**8.99E-05**
Tritium					
H-3	Curies	7.56E-02	1.29E-01	1.11E-01	5.71E-02
Dissolved And Entrained Gases					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Zeroes in this table indicates that no radioactivity was present at detectable levels.
See Table 1-4 for typical minimum detectable concentrations.

Table 1-2C

Hatch Nuclear Plant
RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Liquid Effluents
Unit: Site
Starting: 1-Jan-2008 Ending: 31-Dec-2008

Nuclides Released	Unit	Batch Mode			
		1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter
Fission & Activation Products					
As-76	Curies	1.14E-04	0.00E+00	0.00E+00	0.00E+00
Co-58	Curies	3.10E-05	1.04E-05	2.89E-05	0.00E+00
Co-60	Curies	1.51E-03	7.05E-04	7.35E-04	4.79E-05
Cr-51	Curies	2.49E-04	2.26E-05	0.00E+00	0.00E+00
Fe-55	Curies	1.12E-03	1.94E-02	3.47E-03	9.97E-04
Fe-59	Curies	7.59E-06	0.00E+00	0.00E+00	0.00E+00
I-131	Curies	0.00E+00	0.00E+00	1.02E-06	0.00E+00
Mn-54	Curies	4.57E-04	2.09E-04	2.27E-04	8.67E-06
Mn-56	Curies	1.82E-05	0.00E+00	0.00E+00	0.00E+00
Na-24	Curies	1.93E-04	4.62E-05	2.36E-04	3.65E-06
Nb-97	Curies	9.86E-06	1.77E-05	9.53E-07	0.00E+00
Sr-89	Curies	4.54E-05	2.94E-05	6.07E-05	0.00E+00
Y-91M	Curies	2.41E-05	0.00E+00	0.00E+00	0.00E+00
Zn-65	Curies	9.42E-05	1.04E-04	8.56E-05	0.00E+00
Ce-141	Curies	2.83E-06	0.00E+00	0.00E+00	0.00E+00
Cs-134	Curies	3.80E-06	0.00E+00	0.00E+00	0.00E+00
Cs-137	Curies	2.68E-04	2.39E-04	4.52E-04	3.59E-05
Ru-103	Curies	4.13E-07	0.00E+00	0.00E+00	0.00E+00
Sb-122	Curies	1.31E-06	0.00E+00	0.00E+00	0.00E+00
Sb-124	Curies	2.18E-05	0.00E+00	0.00E+00	0.00E+00
Tc-99M	Curies	2.08E-06	0.00E+00	0.00E+00	0.00E+00
Zn-69M	Curies	4.37E-05	7.05E-07	1.36E-05	0.00E+00
Ag-110M	Curies	1.35E-05	0.00E+00	7.40E-07	0.00E+00
Total For Period	**Curies**	**4.23E-03**	**2.08E-02**	**5.31E-03**	**1.09E-03**

Zeroes in this table indicates that no radioactivity was present at detectable levels.
See Table 1-4 for typical minimum detectable concentrations.

Table 1-2C

Hatch Nuclear Plant

RADIOACTIVE EFFLUENT RELEASE REPORT - 2008

Liquid Effluents

Unit: Site

Starting: 1-Jan-2008 Ending: 31-Dec-2008

		Batch Mode			
Nuclides Released	**Unit**	**1ST Quarter**	**2ND Quarter**	**3RD Quarter**	**4TH Quarter**
Tritium					
H-3	Curies	1.62E+01	1.68E+01	1.01E+01	6.69E-01
Dissolved And Entrained Gases					
Xe-135	Curies	6.87E-06	1.63E-06	1.17E-06	0.00E+00
Total For Period	**Curies**	**6.87E-06**	**1.63E-06**	**1.17E-06**	**0.00E+00**

Zeroes in this table indicates that no radioactivity was present at detectable levels.
See Table 1-4 for typical minimum detectable concentrations.

Table 1-3A

Hatch Nuclear Plant

RADIOACTIVE EFFLUENT RELEASE REPORT - 2008

Doses to a member of the public due to Liquid Releases

Unit: 1

Starting: 1-Jan-2008 Ending: 31-Dec-2008

Cumulative Doses Per Quarter

Organ	ODCM Lmt	Units	1ST Qtr	% ODCM	2ND Qtr	% ODCM	3RD Qtr	% ODCM	4TH Qtr	% ODCM
Bone	5.00E+00	mRem	1.74E-02	3.49E-01	1.71E-02	3.42E-01	2.03E-03	4.05E-02	1.44E-04	2.88E-03
GI-Lli	5.00E+00	mRem	1.20E-03	2.39E-02	3.12E-03	6.24E-02	5.99E-04	1.20E-02	6.71E-05	1.34E-03
Kidney	5.00E+00	mRem	4.28E-04	8.55E-03	4.98E-04	9.96E-03	7.92E-04	1.58E-02	1.04E-04	2.08E-03
Liver	5.00E+00	mRem	1.07E-03	2.13E-02	1.19E-03	2.38E-02	2.13E-03	4.26E-02	2.36E-04	4.71E-03
Lung	5.00E+00	mRem	2.12E-04	4.25E-03	2.69E-04	5.37E-03	3.26E-04	6.53E-03	6.04E-05	1.21E-03
Thyroid	5.00E+00	mRem	1.09E-04	2.19E-03	1.50E-04	2.99E-03	1.03E-04	2.05E-03	3.78E-05	7.57E-04
Total Body	1.50E+00	mRem	4.84E-03	3.23E-01	1.31E-03	8.75E-02	1.47E-03	9.77E-02	1.69E-04	1.13E-02

Cumulative Doses per Year

Organ	ODCM Lmt	Units	Year to Ending Date	% ODCM	Receptor	Limit
Bone	1.00E+01	mRem	3.67E-02	3.67E-01	MAX INDIVIDUAL LIQUID / Adult	Ann Cum Organ Liq Dose
GI-Lli	1.00E+01	mRem	4.99E-03	4.99E-02	MAX INDIVIDUAL LIQUID / Adult	Ann Cum Organ Liq Dose
Kidney	1.00E+01	mRem	1.82E-03	1.82E-02	MAX INDIVIDUAL LIQUID / Adult	Ann Cum Organ Liq Dose
Liver	1.00E+01	mRem	4.62E-03	4.62E-02	MAX INDIVIDUAL LIQUID / Adult	Ann Cum Organ Liq Dose
Lung	1.00E+01	mRem	8.68E-04	8.68E-03	MAX INDIVIDUAL LIQUID / Adult	Ann Cum Organ Liq Dose
Thyroid	1.00E+01	mRem	4.00E-04	4.00E-03	MAX INDIVIDUAL LIQUID / Adult	Ann Cum Organ Liq Dose
Total Body	3.00E+00	mRem	7.79E-03	2.60E-01	MAX INDIVIDUAL LIQUID / Adult	Ann Cum Tot Body Liq Dose

Table 1-3B

Hatch Nuclear Plant

RADIOACTIVE EFFLUENT RELEASE REPORT - 2008

Doses to a member of the public due to Liquid Releases

Unit: 2

Starting: 1-Jan-2008 Ending: 31-Dec-2008

Cumulative Doses Per Quarter

Organ	ODCM Lmt	Units	1ST Qtr	% ODCM	2ND Qtr	% ODCM	3RD Qtr	% ODCM	4TH Qtr	% ODCM
Bone	5.00E+00	mRem	3.35E-04	6.71E-03	1.24E-04	2.48E-03	7.06E-05	1.41E-03	8.44E-08	1.69E-06
GI-Lli	5.00E+00	mRem	2.92E-04	5.85E-03	1.58E-04	3.16E-03	6.37E-05	1.27E-03	6.19E-06	1.24E-04
Kidney	5.00E+00	mRem	2.16E-04	4.33E-03	1.13E-04	2.26E-03	4.73E-05	9.46E-04	1.51E-06	3.03E-05
Liver	5.00E+00	mRem	5.32E-04	1.06E-02	2.30E-04	4.60E-03	1.13E-04	2.26E-03	1.87E-06	3.73E-05
Lung	5.00E+00	mRem	1.03E-04	2.06E-03	6.68E-05	1.34E-03	2.53E-05	5.06E-04	1.52E-06	3.04E-05
Thyroid	5.00E+00	mRem	5.23E-05	1.05E-03	4.76E-05	9.51E-04	2.11E-05	4.22E-04	1.49E-06	2.97E-05
Total Body	1.50E+00	mRem	3.76E-04	2.51E-02	1.67E-04	1.12E-02	7.99E-05	5.33E-03	2.03E-06	1.36E-04

Cumulative Doses per Year

Organ	ODCM Lmt	Units	Year to Ending Date	% ODCM	Receptor	Limit
Bone	1.00E+01	mRem	5.30E-04	5.30E-03	MAX INDIVIDUAL LIQUID / Adult	Ann Cum Organ Liq Dose
GI-Lli	1.00E+01	mRem	5.20E-04	5.20E-03	MAX INDIVIDUAL LIQUID / Adult	Ann Cum Organ Liq Dose
Kidney	1.00E+01	mRem	3.78E-04	3.78E-03	MAX INDIVIDUAL LIQUID / Adult	Ann Cum Organ Liq Dose
Liver	1.00E+01	mRem	8.77E-04	8.77E-03	MAX INDIVIDUAL LIQUID / Adult	Ann Cum Organ Liq Dose
Lung	1.00E+01	mRem	1.97E-04	1.97E-03	MAX INDIVIDUAL LIQUID / Adult	Ann Cum Organ Liq Dose
Thyroid	1.00E+01	mRem	1.22E-04	1.22E-03	MAX INDIVIDUAL LIQUID / Adult	Ann Cum Organ Liq Dose
Total Body	3.00E+00	mRem	6.26E-04	2.09E-02	MAX INDIVIDUAL LIQUID / Adult	Ann Cum Tot Body Liq Dose

Table 1-4
E. I. HATCH NUCLEAR PLANT
RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
MINIMUM DETECTABLE CONCENTRATIONS - LIQUID SAMPLE ANALYSES
STARTING: 1-Jan-2008 ENDING: 31-Dec-2008

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

RADIONUCLIDE	***MDC***	***UNITS***
Mn-54	1.97E-08	uCi/ml
Fe-59	3.94E-08	uCi/ml
Co-58	1.59E-08	uCi/ml
Co-60	1.72E-08	uCi/ml
Zn-65	2.92E-08	uCi/ml
Mo-99	1.20E-07	uCi/ml
Cs-134	1.75E-08	uCi/ml
Cs-137	1.62E-08	uCi/ml
Ce-141	1.92E-08	uCi/ml
Ce-144	8.83E-08	uCi/ml
I-131	1.43E-08	uCi/ml
Xe-135	1.03E-08	uCi/ml
Fe-55	2.34E-08	uCi/ml
Sr-89	1.44E-08	uCi/ml
Sr-90	8.50E-09	uCi/ml
H-3	6.00E-07	uCi/ml

Table 1-5A

Hatch Nuclear Plant

RADIOACTIVE EFFLUENT RELEASE REPORT - 2008

Liquid Effluents - Batch Release Summary

Unit: 1

Starting: 1-Jan-2008 Ending: 31-Dec-2008

Liquid Releases	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Year Totals
1. Number of batch releases		45	41	52	4	142
2. Total time period for Batch releases	(Minutes)	6.17E+03	5.09E+03	5.94E+03	3.89E+02	1.76E+04
3. Maximum time period for a batch release	(Minutes)	1.80E+02	1.75E+02	1.73E+02	1.05E+02	1.80E+02
4. Average time period for a batch release	(Minutes)	1.37E+02	1.24E+02	1.14E+02	9.73E+01	1.24E+02
5. Minimum time period for a batch release	(Minutes)	7.10E+01	8.00E+01	6.70E+01	8.30E+01	6.70E+01
6. Average stream flow during periods of release of liquid effluent into a flowing stream *	(CFS)	1.25E+04	5.13E+03	1.68E+03	1.76E+03	5.24E+03

Replace this text in the Station Parameters

Table 1-5B

Hatch Nuclear Plant

RADIOACTIVE EFFLUENT RELEASE REPORT - 2008

Liquid Effluents - Batch Release Summary

Unit: 2

Starting: 1-Jan-2008 Ending: 31-Dec-2008

Liquid Releases	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Year Totals
1. Number of batch releases		38	44	16	1	99
2. Total time period for Batch releases	(Minutes)	4.01E+03	4.69E+03	1.55E+03	9.60E+01	1.04E+04
3. Maximum time period for a batch release	(Minutes)	1.36E+02	1.38E+02	1.17E+02	9.60E+01	1.38E+02
4. Average time period for a batch release	(Minutes)	1.06E+02	1.07E+02	9.69E+01	9.60E+01	1.05E+02
5. Minimum time period for a batch release	(Minutes)	7.10E+01	8.60E+01	7.50E+01	9.60E+01	7.10E+01
6. Average stream flow during periods of release of liquid effluent into a flowing stream *	(CFS)	1.25E+04	5.13E+03	1.68E+03	1.76E+03	5.24E+03

Replace this text in the Station Parameters

Table 1-6A

Hatch Nuclear Plant

RADIOACTIVE EFFLUENT RELEASE REPORT - 2008

Liquid Effluents - Abnormal Release Summary

Unit: 1

Starting: 1-Jan-2008 Ending: 31-Dec-2008

Liquid Releases	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Year Totals
1. Number of Releases		0	0	0	0	0
2. Total Time For All Releases	(Minutes)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3. Maximum Time For A Release	(Minutes)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4. Average Time For A Release	(Minutes)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
5. Minimum Time For A Release	(Minutes)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
6. Total activity for all releases	(Curies)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Table 1-6B

Hatch Nuclear Plant

RADIOACTIVE EFFLUENT RELEASE REPORT - 2008

Liquid Effluents - Abnormal Release Summary

Unit: 2

Starting: 1-Jan-2008 Ending: 31-Dec-2008

Liquid Releases	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Year Totals
1. Number of Releases		0	0	0	0	0
2. Total Time For All Releases	(Minutes)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3. Maximum Time For A Release	(Minutes)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4. Average Time For A Release	(Minutes)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
5. Minimum Time For A Release	(Minutes)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
6. Total activity for all releases	(Curies)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Table 1-6C

Hatch Nuclear Plant

RADIOACTIVE EFFLUENT RELEASE REPORT - 2008

Liquid Effluents - Abnormal Release Summary

Unit: Site

Starting: 1-Jan-2008 Ending: 31-Dec-2008

Liquid Releases	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Year Totals
1. Number of Releases		0	0	0	0	0
2. Total Time For All Releases	(Minutes)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3. Maximum Time For A Release	(Minutes)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4. Average Time For A Release	(Minutes)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
5. Minimum Time For A Release	(Minutes)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
6. Total activity for all releases	(Curies)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

2.0 *Gaseous Effluents*

2.1 Regulatory Requirements

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

2.1.1 Dose Rate Limits

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, Iodine-133, 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 Doses Due To Noble Gases in Gaseous Effluents

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 Doses To A Member of the Public

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

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

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

2.2 *Measurements and Approximations of Total Radioactivity*

Waste gas release at Plant Hatch is confined to four paths: main stack (also called the offgas vent), Unit 1 reactor building vent; Unit 2 reactor building vent, and the recombiner building vent. Each of these four paths is continuously monitored for gaseous radioactivity.

2.2.1 *Sample Collection and Analysis*

Each of the four gaseous effluent paths is equipped with an integrating-type sample collection device for collecting particulates and iodines. 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.

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

4. Particulates are collected by pulling 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 samples are analyzed for Sr-89 and Sr-90.

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

The noble gas grab sample analysis results are used along with maximum expected release flow rates from each of the four vents to calculate monitor setpoints for the gaseous effluent monitors serving the four release points. Calculation of monitor setpoints is described in the ODCM. Typically achieved minimum detectable concentrations for gaseous effluents sample and analyses are reported in Table 2-6.

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

2.2.2 Total Quantities of Radioactivity, Dose Rates, and Cumulative Doses

The methods for determining release quantities of radioactivity, dose rates, and cumulative doses follow:

2.2.2.1 Fission and Activation Gases

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

Dose rates due to noble gases, radioiodines, tritium, and particulates are calculated (with computer assistance). The calculated dose rates are compared to the dose rate limits specified in ODCM 3.1.2 for noble gases, 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 ODCM 3.1.3. The current percent of the ODCM limits are shown on the printout for each release period. Air dose calculation methodology is presented in the ODCM.

2.2.2.2 Radioiodine, Tritium and Particulate Releases

Released quantities of radioiodines are determined using the weekly samples and release flow rates for the four release points. Radioiodine concentrations are determined by gamma spectroscopy.

Release quantities of particulates are determined using the weekly (filter) samples and release flow rates for the four 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. Since sample flows and vent flows are almost constant over each quarterly period the filters from each vent can be dissolved together. Decay corrections are performed back to the middle of the quarterly collection period. If Sr-89 or Sr-90 is not detected, MDC's are calculated. Strontium concentrations are input into the composite file of the computer and used for release dose rate and dose calculations for a Member of the Public.

Tritium samples are obtained monthly from each vent by passing the sample stream through a cold trap. The grams of water vapor/cubic foot is measured upstream of the cold trap in order to alleviate the difficulties in determining water vapor collection efficiencies. The tritium samples are analyzed by an independent laboratory and the results are furnished in uCi/ml of water. The tritium concentration in water is converted to the tritium concentration in air and this value is input into the composite file of the computer and 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 dose rates from each release point are compared to the dose rate limits as described in ODCM 3.1.2 Doses due to radioiodine, tritium and particulates are calculated for the controlling receptor, which is described in the ODCM. Doses to a Member of the Public are calculated for each release period, and cumulative totals are kept for each unit, for the current calendar quarter and year. Cumulative doses are compared to the dose limits specified in ODCM 3.1.4. The current percent of ODCM limits are shown on the printout for each release period.

2.2.2.3 Gross Alpha Release

The gross alpha release is computed each month by counting the particulate filters, 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. The summed activity is then divided by the total monthly volume to determine the concentration. This concentration is input into the composite file of the computer and used for release calculations.

2.2.3 Total Error Estimation

The total or maximum error associated with the effluent measurement will include the cumulative errors resulting from the total process of sampling and measurement. Due to the difficulty with assigning error terms for each parameter affecting the final measurement, detailed statistical evaluation of error is not suggested. The objective is 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 associated with 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.

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

Statistical error	60%
Counting equipment calibration	10%
Vent flow rates	10%
Non-steady release rates	20%
TOTAL ERROR	65%

I-131 releases were calculated from each weekly sample.

Statistical error	60%
Counting equipment calibration	10%
Vent flow rates	10%
Vent sample flow rates	10%
Non-steady release rates	10%
Losses from charcoal cartridges	10%
TOTAL ERROR	64%

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

Statistical error	60%
Counting equipment calibration	10%
Vent flow rates	10%
Vent sample flow rates	10%
Non-steady release rates	10%
TOTAL ERROR	63%

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

Water vapor in sample stream determination	20%
Vent flow rates	10%
Counting calibration and statistics	10%
Non-steady release rates	50%
TOTAL ERROR	56%

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

Statistical error	60%
Counting equipment calibration	10%
Vent flow rates	10%
Vent sample flow rates	10%
Non-steady release rates	10%
TOTAL ERROR	63%

2.3 Gaseous Effluent Release Data

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

To complete table 2-1A, 2-1B, and 2-1C, total release for each of the four categories (fission and activation gases, iodines, particulates, and tritium) was divided by the number of seconds in the quarter to obtain a release rate in uCi/second for each category for each quarter. However, the percent of the ODCM limits are not applicable because we have no curie limits for gaseous releases. Applicable limits are expressed in terms of dose. Noble gases are limited as specified in ODCM 3.1.2. The other three categories (tritium, radioiodines, and particulates) are limited as a group as specified in ODCM 3.1.2.

Dose rates due to noble gas releases, and due to 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 2-1A, 2-1B, and 2-1C, as curies released in each quarter.

Limits for cumulative beta and gamma air doses due to noble gases are specified in ODCM 3.1.3. Cumulative air doses are presented in Table 2-4A and 2-4B, along with percent of ODCM limits.

Limits for cumulative doses to a Member of the Public due to radioiodine, tritium and particulates, are specified in ODCM 3.1.4. Cumulative doses to a Member of the Public doses are presented in Table 2-5A, and 2-5B, along with percent of ODCM limits.

2.4 *Radiological Impact Due to Gaseous Releases*

Dose rates due to noble gas release were calculated for the site in accordance with ODCM 3.1.2. Dose rates due to radioiodine, tritium, and particulates in gaseous releases were calculated in accordance with ODCM 3.1.2.

These dose rates were calculated as part of the pre-release and post release on individual release permits. No limits were exceeded for this reporting period.

Cumulative air doses due to noble gas releases were calculated for each unit in accordance with ODCM 3.1.3. These results are presented in Tables 2-4A and 2-4B.

Cumulative doses to a Member of the Public due to radioiodine, tritium and particulates in gaseous releases were calculated for each unit in accordance with ODCM 3.1.4. These results are presented in Tables 2-5A and 2-5B.

Dose rates and doses were calculated using the methodology presented in the ODCM.

2.5 *Gaseous Effluents - Batch Releases*

There are no gaseous batch releases from Plant Hatch.

2.6 *Gaseous Effluents - Abnormal Releases*

There were no unplanned or uncontrolled gaseous releases during this reporting period.

Table 2-1A

Hatch Nuclear Plant

RADIOACTIVE EFFLUENT RELEASE REPORT - 2008

Gaseous Effluents - Summation Of All Releases

Unit: 1

Starting: 1-Jan-2008 Ending: 31-Dec-2008

Type of Effluent	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter
A. Fission And Activation Gases					
1. Total Release	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2. Average Release rate for period	uCi/sec	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3. Percent of Applicable Limit	%	*	*	*	*
B. Radioiodines					
1. Total Iodine-131	Curies	1.23E-05	3.33E-05	2.35E-05	1.43E-05
2. Average Release rate for period	uCi/sec	1.56E-06	4.23E-06	2.98E-06	1.81E-06
3. Percent of Applicable Limit	%	*	*	*	*
C. Particulates					
1. Particulates (Half-Lives > 8 Days)	Curies	2.45E-06	4.03E-06	1.79E-05	2.09E-05
2. Average Release rate for period	uCi/sec	3.11E-07	5.11E-07	2.27E-06	2.653E-06
3. Percent of Applicable Limit	%	*	*	*	*
D. Tritium					
1. Total Release	Curies	5.67E+00	8.11E+00	7.99E+00	7.08E+00
2. Average Release rate for period	uCi/sec	7.20E-01	1.03E+00	1.01E+00	8.98E-01
3. Percent of Applicable Limit	%	*	*	*	*
E. Gross Alpha					
1. Total Release	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2. Average Release rate for period	uCi/sec	0.00E+00	0.00E+00	0.00E+00	0.00E+00

* Applicable limits are expressed in terms of dose. See Tables 2-4A, 2-4B, 2-5A, 2-5B of this report.

Table 2-1B

Hatch Nuclear Plant
RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Gaseous Effluents - Summation Of All Releases
Unit: 2
Starting: 1-Jan-2008 Ending: 31-Dec-2008

Type of Effluent	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter
A. Fission And Activation Gases					
1. Total Release	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2. Average Release rate for period	uCi/sec	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3. Percent of Applicable Limit	%	*	*	*	*
B. Radioiodines					
1. Total Iodine-131	Curies	3.57E-05	3.33E-05	2.91E-05	1.67E-05
2. Average Release rate for period	uCi/sec	4.52E-06	4.23E-06	3.69E-06	2.12E-06
3. Percent of Applicable Limit	%	*	*	*	*
C. Particulates					
1. Particulates (Half-Lives > 8 Days)	Curies	5.60E-06	4.97E-06	6.21E-06	4.61E-06
2. Average Release rate for period	uCi/sec	7.10E-07	6.31E-07	7.88E-07	5.847E-07
3. Percent of Applicable Limit	%	*	*	*	*
D. Tritium					
1. Total Release	Curies	8.55E+00	1.08E+01	9.34E+00	7.99E+00
2. Average Release rate for period	uCi/sec	1.08E+00	1.37E+00	1.19E+00	1.01E+00
3. Percent of Applicable Limit	%	*	*	*	*
E. Gross Alpha					
1. Total Release	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2. Average Release rate for period	uCi/sec	0.00E+00	0.00E+00	0.00E+00	0.00E+00

* Applicable limits are expressed in terms of dose. See Tables 2-4A, 2-4B, 2-5A, 2-5B of this report.

Table 2-1C

Hatch Nuclear Plant

RADIOACTIVE EFFLUENT RELEASE REPORT - 2008

Gaseous Effluents - Summation Of All Releases

Unit: Site

Starting: 1-Jan-2008 Ending: 31-Dec-2008

Type of Effluent	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter
A. Fission And Activation Gases					
1. Total Release	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2. Average Release rate for period	uCi/sec	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3. Percent of Applicable Limit	%	*	*	*	*
B. Radioiodines					
1. Total Iodine-131	Curies	4.79E-05	6.67E-05	5.26E-05	3.10E-05
2. Average Release rate for period	uCi/sec	6.08E-06	8.46E-06	6.67E-06	3.94E-06
3. Percent of Applicable Limit	%	*	*	*	*
C. Particulates					
1. Particulates (Half-Lives > 8 Days)	Curies	8.05E-06	9.00E-06	2.41E-05	2.55E-05
2. Average Release rate for period	uCi/sec	1.02E-06	1.14E-06	3.06E-06	3.238E-06
3. Percent of Applicable Limit	%	*	*	*	*
D. Tritium					
1. Total Release	Curies	1.42E+01	1.89E+01	1.73E+01	1.51E+01
2. Average Release rate for period	uCi/sec	1.80E+00	2.40E+00	2.20E+00	1.91E+00
3. Percent of Applicable Limit	%	*	*	*	*
E. Gross Alpha					
1. Total Release	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2. Average Release rate for period	uCi/sec	0.00E+00	0.00E+00	0.00E+00	0.00E+00

* Applicable limits are expressed in terms of dose. See Tables 2-4A, 2-4B, 2-5A, 2-5B of this report.

Table 2-2A

Hatch Nuclear Plant
RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Gaseous Effluents - Elevated Level Releases
Unit: 1
Starting: 1-Jan- 2008 Ending: 31-Dec-2008

		Continuous Mode			
Nuclides Released	**Unit**	**1ST Quarter**	**2ND Quarter**	**3RD Quarter**	**4TH Quarter**
Fission Gases					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Iodines					
I-131	Curies	1.02E-05	3.33E-05	2.35E-05	1.33E-05
I-133	Curies	4.99E-05	7.96E-05	6.55E-05	1.36E-05
Total For Period	**Curies**	**6.01E-05**	**1.13E-04**	**8.90E-05**	**2.69E-05**
Particulates					
Cr-51	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Mn-54	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Co-60	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Sr-89	Curies	9.19E-07	3.37E-06	4.03E-06	2.09E-06
Sr-90	Curies	5.93E-09	2.33E-08	8.75E-09	0.00E+00
Ba-140	Curies	0.00E+00	0.00E+00	1.94E-07	0.00E+00
Total For Period	**Curies**	**9.25E-07**	**3.39E-06**	**4.23E-06**	**2.09E-06**
Tritium					
H-3	Curies	2.78E-01	9.11E-01	1.18E+00	6.63E-01
Gross Alpha					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00

If Not Detected, Nuclide is Not Reported. Zeroes in this table indicates that no radioactivity was present at detectable levels.
See Table 2-6 for typical minimum detectable concentrations.

Table 2-2A

Hatch Nuclear Plant

RADIOACTIVE EFFLUENT RELEASE REPORT - 2008

Gaseous Effluents - Elevated Level Releases

Unit: 1

Starting: 1-Jan- 2008 Ending: 31-Dec-2008

		Batch Mode			
Nuclides Released	**Unit**	**1ST Quarter**	**2ND Quarter**	**3RD Quarter**	**4TH Quarter**
Fission Gases					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Iodines					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Particulates					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Tritium					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Gross Alpha					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00

If Not Detected, Nuclide is Not Reported. Zeroes in this table indicates that no radioactivity was present at detectable levels.
See Table 2-6 for typical minimum detectable concentrations.

Table 2-2B

Hatch Nuclear Plant
RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Gaseous Effluents - Elevated Level Releases
Unit: 2
Starting: 1-Jan- 2008 Ending: 31-Dec-2008

		Continuous Mode			
Nuclides Released	**Unit**	**1ST Quarter**	**2ND Quarter**	**3RD Quarter**	**4TH Quarter**
Fission Gases					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Iodines					
I-131	Curies	3.04E-05	3.33E-05	2.35E-05	1.33E-05
I-133	Curies	9.43E-05	7.96E-05	6.55E-05	1.36E-05
Total For Period	**Curies**	**1.25E-04**	**1.13E-04**	**8.90E-05**	**2.69E-05**
Particulates					
Cr-51	Curies	5.83E-07	0.00E+00	0.00E+00	0.00E+00
Mn-54	Curies	2.92E-07	0.00E+00	0.00E+00	0.00E+00
Co-60	Curies	3.76E-07	0.00E+00	0.00E+00	0.00E+00
Sr-89	Curies	2.92E-06	3.37E-06	4.03E-06	2.09E-06
Sr-90	Curies	1.88E-08	2.33E-08	8.75E-09	0.00E+00
Ba-140	Curies	0.00E+00	0.00E+00	1.94E-07	0.00E+00
Total For Period	**Curies**	**4.19E-06**	**3.39E-06**	**4.23E-06**	**2.09E-06**
Tritium					
H-3	Curies	6.02E-01	9.11E-01	1.18E+00	6.63E-01
Gross Alpha					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00

If Not Detected, Nuclide is Not Reported. Zeroes in this table indicates that no radioactivity was present at detectable levels.
See Table 2-6 for typical minimum detectable concentrations.

Table 2-2B

Hatch Nuclear Plant

RADIOACTIVE EFFLUENT RELEASE REPORT - 2008

Gaseous Effluents - Elevated Level Releases

Unit: 2

Starting: 1-Jan- 2008 Ending: 31-Dec-2008

		Batch Mode			
Nuclides Released	**Unit**	**1ST Quarter**	**2ND Quarter**	**3RD Quarter**	**4TH Quarter**
Fission Gases					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Iodines					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Particulates					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Tritium					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Gross Alpha					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00

If Not Detected, Nuclide is Not Reported. Zeroes in this table indicates that no radioactivity was present at detectable levels.
See Table 2-6 for typical minimum detectable concentrations.

Table 2-2C

Hatch Nuclear Plant
RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Gaseous Effluents - Elevated Level Releases
Unit: Site
Starting: 1-Jan- 2008 Ending: 31-Dec-2008

		Continuous Mode			
Nuclides Released	**Unit**	**1ST Quarter**	**2ND Quarter**	**3RD Quarter**	**4TH Quarter**
Fission Gases					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Iodines					
I-131	Curies	4.06E-05	6.67E-05	4.70E-05	2.66E-05
I-133	Curies	1.44E-04	1.59E-04	1.31E-04	2.72E-05
Total For Period	**Curies**	**1.85E-04**	**2.26E-04**	**1.78E-04**	**5.37E-05**
Particulates					
Cr-51	Curies	5.83E-07	0.00E+00	0.00E+00	0.00E+00
Mn-54	Curies	2.92E-07	0.00E+00	0.00E+00	0.00E+00
Co-60	Curies	3.76E-07	0.00E+00	0.00E+00	0.00E+00
Sr-89	Curies	3.84E-06	6.74E-06	8.06E-06	4.17E-06
Sr-90	Curies	2.48E-08	4.66E-08	1.75E-08	0.00E+00
Ba-140	Curies	0.00E+00	0.00E+00	3.89E-07	0.00E+00
Total For Period	**Curies**	**5.11E-06**	**6.79E-06**	**8.47E-06**	**4.17E-06**
Tritium					
H-3	Curies	8.80E-01	1.82E+00	2.36E+00	1.33E+00
Gross Alpha					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00

If Not Detected, Nuclide is Not Reported. Zeroes in this table indicates that no radioactivity was present at detectable levels.
See Table 2-6 for typical minimum detectable concentrations.

Table 2-2C

Hatch Nuclear Plant

RADIOACTIVE EFFLUENT RELEASE REPORT - 2008

Gaseous Effluents - Elevated Level Releases

Unit: Site

Starting: 1-Jan- 2008 Ending: 31-Dec-2008

		Batch Mode			
Nuclides Released	**Unit**	**1ST Quarter**	**2ND Quarter**	**3RD Quarter**	**4TH Quarter**
Fission Gases					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Iodines					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Particulates					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Tritium					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Gross Alpha					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00

If Not Detected, Nuclide is Not Reported. Zeroes in this table indicates that no radioactivity was present at detectable levels.
See Table 2-6 for typical minimum detectable concentrations.

Table 2-3A

Hatch Nuclear Plant

RADIOACTIVE EFFLUENT RELEASE REPORT - 2008

Gaseous Effluents - Ground Level Releases

Unit: 1

Starting: 1-Jan-2008 Ending: 31-Dec-2008

		Continuous Mode			
Nuclides Released	**Unit**	**1ST Quarter**	**2ND Quarter**	**3RD Quarter**	**4TH Quarter**
Fission Gases					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Iodines					
I-131	Curies	2.03E-06	0.00E+00	0.00E+00	1.01E-06
Total For Period	**Curies**	**2.03E-06**	**0.00E+00**	**0.00E+00**	**1.01E-06**
Particulates					
Mn-54	Curies	0.00E+00	0.00E+00	5.32E-06	6.49E-06
Co-58	Curies	0.00E+00	0.00E+00	1.78E-06	4.16E-06
Co-60	Curies	0.00E+00	0.00E+00	6.55E-06	6.78E-06
Zn-65	Curies	0.00E+00	0.00E+00	0.00E+00	1.40E-06
Sr-89	Curies	1.52E-06	6.36E-07	0.00E+00	0.00E+00
Total For Period	**Curies**	**1.52E-06**	**6.36E-07**	**1.37E-05**	**1.88E-05**
Tritium					
H-3	Curies	5.39E+00	7.20E+00	6.81E+00	6.41E+00
Gross Alpha					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00

If Not Detected, Nuclide is Not Reported. Zeroes in this table indicates that no radioactivity was present at detectable levels.
See Table 2-6 for typical minimum detectable concentrations.

Table 2-3A

Hatch Nuclear Plant

RADIOACTIVE EFFLUENT RELEASE REPORT - 2008

Gaseous Effluents - Ground Level Releases

Unit: 1

Starting: 1-Jan-2008 Ending: 31-Dec-2008

		Batch Mode			
Nuclides Released	**Unit**	**1ST Quarter**	**2ND Quarter**	**3RD Quarter**	**4TH Quarter**
Fission Gases					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Iodines					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Particulates					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Tritium					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Gross Alpha					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00

If Not Detected, Nuclide is Not Reported. Zeroes in this table indicates that no radioactivity was present at detectable levels.
See Table 2-6 for typical minimum detectable concentrations.

Table 2-3B

Hatch Nuclear Plant

RADIOACTIVE EFFLUENT RELEASE REPORT - 2008

Gaseous Effluents - Ground Level Releases

Unit: 2

Starting: 1-Jan-2008 Ending: 31-Dec-2008

		Continuous Mode			
Nuclides Released	**Unit**	**1ST Quarter**	**2ND Quarter**	**3RD Quarter**	**4TH Quarter**
Fission Gases					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Iodines					
I-131	Curies	5.29E-06	0.00E+00	5.57E-06	3.44E-06
I-133	Curies	0.00E+00	0.00E+00	1.47E-05	0.00E+00
Total For Period	**Curies**	**5.29E-06**	**0.00E+00**	**2.03E-05**	**3.44E-06**
Particulates					
Sr-89	Curies	1.31E-06	1.58E-06	1.98E-06	2.52E-06
Sr-90	Curies	1.06E-07	0.00E+00	0.00E+00	0.00E+00
Total For Period	**Curies**	**1.41E-06**	**1.58E-06**	**1.98E-06**	**2.52E-06**
Tritium					
H-3	Curies	7.95E+00	9.87E+00	8.16E+00	7.33E+00
Gross Alpha					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00

If Not Detected, Nuclide is Not Reported. Zeroes in this table indicates that no radioactivity was present at detectable levels.
See Table 2-6 for typical minimum detectable concentrations.

Table 2-3B

Hatch Nuclear Plant

RADIOACTIVE EFFLUENT RELEASE REPORT - 2008

Gaseous Effluents - Ground Level Releases

Unit: 2

Starting: 1-Jan-2008 Ending: 31-Dec-2008

		Batch Mode			
Nuclides Released	**Unit**	**1ST Quarter**	**2ND Quarter**	**3RD Quarter**	**4TH Quarter**
Fission Gases					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Iodines					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Particulates					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Tritium					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Gross Alpha					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00

If Not Detected, Nuclide is Not Reported. Zeroes in this table indicates that no radioactivity was present at detectable levels.
See Table 2-6 for typical minimum detectable concentrations.

Table 2-3C

Hatch Nuclear Plant

RADIOACTIVE EFFLUENT RELEASE REPORT - 2008

Gaseous Effluents - Ground Level Releases

Unit: Site

Starting: 1-Jan-2008 Ending: 31-Dec-2008

		Continuous Mode			
Nuclides Released	**Unit**	**1ST Quarter**	**2ND Quarter**	**3RD Quarter**	**4TH Quarter**
Fission Gases					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Iodines					
I-131	Curies	7.31E-06	0.00E+00	5.57E-06	4.45E-06
I-133	Curies	0.00E+00	0.00E+00	1.47E-05	0.00E+00
Total For Period	**Curies**	**7.31E-06**	**0.00E+00**	**2.03E-05**	**4.45E-06**
Particulates					
Mn-54	Curies	0.00E+00	0.00E+00	5.32E-06	6.49E-06
Co-58	Curies	0.00E+00	0.00E+00	1.78E-06	4.16E-06
Co-60	Curies	0.00E+00	0.00E+00	6.55E-06	6.78E-06
Zn-65	Curies	0.00E+00	0.00E+00	0.00E+00	1.40E-06
Sr-89	Curies	2.83E-06	2.22E-06	1.98E-06	2.52E-06
Sr-90	Curies	1.06E-07	0.00E+00	0.00E+00	0.00E+00
Total For Period	**Curies**	**2.94E-06**	**2.22E-06**	**1.56E-05**	**2.14E-05**
Tritium					
H-3	Curies	1.33E+01	1.71E+01	1.50E+01	1.37E+01
Gross Alpha					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00

If Not Detected, Nuclide is Not Reported. Zeroes in this table indicates that no radioactivity was present at detectable levels.
See Table 2-6 for typical minimum detectable concentrations.

Table 2-3C

Hatch Nuclear Plant

RADIOACTIVE EFFLUENT RELEASE REPORT - 2008

Gaseous Effluents - Ground Level Releases

Unit: Site

Starting: 1-Jan-2008 Ending: 31-Dec-2008

		Batch Mode			
Nuclides Released	**Unit**	**1ST Quarter**	**2ND Quarter**	**3RD Quarter**	**4TH Quarter**
Fission Gases					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Iodines					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Particulates					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Tritium					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Gross Alpha					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00

If Not Detected, Nuclide is Not Reported. Zeroes in this table indicates that no radioactivity was present at detectable levels.
See Table 2-6 for typical minimum detectable concentrations.

Table 2-4A

Hatch Nuclear Plant

RADIOACTIVE EFFLUENT RELEASE REPORT - 2008

Air Doses Due to Gaseous Releases

Unit: 1

Starting: 1-Jan-2008 Ending: 31-Dec-2008

Cumulative Doses Per Quarter

Type of Radiation	ODCM Lmt	Units	1ST Qtr	% ODCM	2ND Qtr	% ODCM	3RD Qtr	% ODCM	4TH Qtr	% ODCM
Gamma Air	5.00E+00	mRad	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Gamma Air	5.00E+00	mRad	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Beta Air	1.00E+01	mRad	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Beta Air	1.00E+01	mRad	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Cumulative Doses Per Year

Type of Radiation	ODCM Lmt	Units	Year to End Date	% ODCM	Receptor	Limit
Gamma Air	1.00E+01	mRad	0.00E+00	0.00E+00	SITE BOUNDARY / Child	U1 Ann Cum Gamma Airdose
Gamma Air	1.00E+01	mRad	0.00E+00	0.00E+00	SITE BOUNDARY / Child	U2 Ann Cum Gamma Airdose
Beta Air	2.00E+01	mRad	0.00E+00	0.00E+00	SITE BOUNDARY / Child	U1 Ann Cum Beta Airdose
Beta Air	2.00E+01	mRad	0.00E+00	0.00E+00	SITE BOUNDARY / Child	U2 Ann Cum Beta Airdose

Table 2-4B

Hatch Nuclear Plant

RADIOACTIVE EFFLUENT RELEASE REPORT - 2008

Air Doses Due to Gaseous Releases

Unit: 2

Starting: 1-Jan-2008 Ending: 31-Dec-2008

Cumulative Doses Per Quarter

Type of Radiation	ODCM Lmt	Units	1ST Qtr	% ODCM	2ND Qtr	% ODCM	3RD Qtr	% ODCM	4TH Qtr	% ODCM
Gamma Air	5.00E+00	mRad	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Gamma Air	5.00E+00	mRad	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Beta Air	1.00E+01	mRad	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Beta Air	1.00E+01	mRad	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Cumulative Doses Per Year

Type of Radiation	ODCM Lmt	Units	Year to End Date	% ODCM	Receptor	Limit
Gamma Air	1.00E+01	mRad	0.00E+00	0.00E+00	SITE BOUNDARY / Child	U1 Ann Cum Gamma Airdose
Gamma Air	1.00E+01	mRad	0.00E+00	0.00E+00	SITE BOUNDARY / Child	U2 Ann Cum Gamma Airdose
Beta Air	2.00E+01	mRad	0.00E+00	0.00E+00	SITE BOUNDARY / Child	U1 Ann Cum Beta Airdose
Beta Air	2.00E+01	mRad	0.00E+00	0.00E+00	SITE BOUNDARY / Child	U2 Ann Cum Beta Airdose

Table 2-5A

Hatch Nuclear Plant

RADIOACTIVE EFFLUENT RELEASE REPORT - 2008

Doses To A Member Of The Public Due To Radioiodines, Tritium, and Particulates in Gaseous Releases

Unit: 1

Starting: 1-Jan-2008 Ending: 31-Dec-2008

Cumulative Doses Per Quarter

Organ	ODCM Lmt	Units	1ST Qtr	% ODCM	2ND Qtr	% ODCM	3RD Qtr	% ODCM	4TH Qtr	% ODCM
Bone	7.50E+00	mRem	1.73E-05	2.31E-04	1.32E-05	1.76E-04	4.86E-05	6.48E-04	4.79E-05	6.39E-04
GI-Lli	7.50E+00	mRem	2.80E-03	3.73E-02	3.74E-03	4.98E-02	3.59E-03	4.78E-02	3.38E-03	4.50E-02
Kidney	7.50E+00	mRem	2.80E-03	3.73E-02	3.74E-03	4.98E-02	3.58E-03	4.78E-02	3.37E-03	4.50E-02
Liver	7.50E+00	mRem	2.80E-03	3.73E-02	3.74E-03	4.98E-02	3.58E-03	4.78E-02	3.37E-03	4.50E-02
Lung	7.50E+00	mRem	2.80E-03	3.73E-02	3.74E-03	4.98E-02	3.59E-03	4.78E-02	3.38E-03	4.50E-02
Thyroid	7.50E+00	mRem	2.85E-03	3.80E-02	3.81E-03	5.08E-02	3.63E-03	4.84E-02	3.42E-03	4.55E-02
Total Body	7.50E+00	mRem	2.80E-03	3.73E-02	3.74E-03	4.98E-02	3.58E-03	4.78E-02	3.38E-03	4.50E-02

Cumulative Doses per Year

Organ	ODCM Lmt	Units	Year to Ending Date	% ODCM	Receptor	Limit
Bone	1.500E+01	mRem	1.271E-04	8.472E-04	MAX IND. AIRBORNE / Child	Ann Cum Iod/Part Airdose
GI-Lli	1.500E+01	mRem	1.350E-02	8.999E-02	MAX IND. AIRBORNE / Child	Ann Cum Iod/Part Airdose
Kidney	1.500E+01	mRem	1.349E-02	8.991E-02	MAX IND. AIRBORNE / Child	Ann Cum Iod/Part Airdose
Liver	1.500E+01	mRem	1.349E-02	8.993E-02	MAX IND. AIRBORNE / Child	Ann Cum Iod/Part Airdose
Lung	1.500E+01	mRem	1.350E-02	8.998E-02	MAX IND. AIRBORNE / Child	Ann Cum Iod/Part Airdose
Thyroid	1.500E+01	mRem	1.371E-02	9.138E-02	MAX IND. AIRBORNE / Child	Ann Cum Iod/Part Airdose
Total Body	1.500E+01	mRem	1.349E-02	8.995E-02	MAX IND. AIRBORNE / Child	Ann Cum Iod/Part Airdose

Table 2-5B

Hatch Nuclear Plant

RADIOACTIVE EFFLUENT RELEASE REPORT - 2008

Doses To A Member Of The Public Due To Radioiodines, Tritium, and Particulates in Gaseous Releases

Unit: 2

Starting: 1-Jan-2008 Ending: 31-Dec-2008

Cumulative Doses Per Quarter

Organ	ODCM Lmt	Units	1ST Qtr	% ODCM	2ND Qtr	% ODCM	3RD Qtr	% ODCM	4TH Qtr	% ODCM
Bone	7.50E+00	mRem	5.75E-05	7.66E-04	2.27E-05	3.03E-04	2.73E-05	3.63E-04	2.90E-05	3.87E-04
GI-Lli	7.50E+00	mRem	4.12E-03	5.50E-02	5.12E-03	6.83E-02	4.24E-03	5.65E-02	3.80E-03	5.07E-02
Kidney	7.50E+00	mRem	4.12E-03	5.50E-02	5.12E-03	6.83E-02	4.24E-03	5.65E-02	3.80E-03	5.07E-02
Liver	7.50E+00	mRem	4.12E-03	5.50E-02	5.12E-03	6.83E-02	4.24E-03	5.65E-02	3.80E-03	5.07E-02
Lung	7.50E+00	mRem	4.12E-03	5.50E-02	5.12E-03	6.83E-02	4.24E-03	5.65E-02	3.80E-03	5.07E-02
Thyroid	7.50E+00	mRem	4.27E-03	5.69E-02	5.20E-03	6.93E-02	4.38E-03	5.84E-02	3.88E-03	5.18E-02
Total Body	7.50E+00	mRem	4.13E-03	5.51E-02	5.12E-03	6.83E-02	4.24E-03	5.65E-02	3.80E-03	5.07E-02

Cumulative Doses per Year

Organ	ODCM Lmt	Units	Year to Ending Date	% ODCM	Receptor	Limit
Bone	1.500E+01	mRem	1.365E-04	9.097E-04	MAX IND. AIRBORNE / Child	Ann Cum Iod/Part Airdose
GI-Lli	1.500E+01	mRem	1.729E-02	1.153E-01	MAX IND. AIRBORNE / Child	Ann Cum Iod/Part Airdose
Kidney	1.500E+01	mRem	1.729E-02	1.152E-01	MAX IND. AIRBORNE / Child	Ann Cum Iod/Part Airdose
Liver	1.500E+01	mRem	1.729E-02	1.152E-01	MAX IND. AIRBORNE / Child	Ann Cum Iod/Part Airdose
Lung	1.500E+01	mRem	1.729E-02	1.152E-01	MAX IND. AIRBORNE / Child	Ann Cum Iod/Part Airdose
Thyroid	1.500E+01	mRem	1.773E-02	1.182E-01	MAX IND. AIRBORNE / Child	Ann Cum Iod/Part Airdose
Total Body	1.500E+01	mRem	1.730E-02	1.153E-01	MAX IND. AIRBORNE / Child	Ann Cum Iod/Part Airdose

TABLE 2-6
E. I. HATCH NUCLEAR PLANT
RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
MINIMUM DETECTABLE CONCENTRATIONS - GASEOUS SAMPLE ANALYSES
STARTING: 1-Jan-2008 ENDING: 31-Dec-2008

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

RADIONUCLIDE	***MDC***	***UNITS***
Kr-87	2.94E-08	uCi/cc
Kr-88	3.22E-08	uCi/cc
Xe-133	2.30E-08	uCi/cc
Xe-133m	7.30E-08	uCi/cc
Xe-135	8.73E-09	uCi/cc
Xe-138	1.99E-07	uCi/cc
I-131	1.34E-13*	uCi/cc
I-133	1.53E-13*	uCi/cc
Mn-54	1.62E-13*	uCi/cc
Fe-59	3.42E-13*	uCi/cc
Co-58	1.30E-13*	uCi/cc
Co-60	1.54E-13*	uCi/cc
Zn-65	2.54E-13*	uCi/cc
Mo-99	9.61E-13*	uCi/cc
Cs-134	1.42E-13*	uCi/cc
Cs-137	1.28E-13*	uCi/cc
Ce-141	1.26E-13*	uCi/cc
Ce-144	5.64E-13*	uCi/cc
Sr-89	1.10E-16	uCi/cc
Sr-90	6.70E-16	uCi/cc
H-3	4.00E-07	uCi/cc

** Based on an estimated sample quantity of 4.078E+07 cc's.*

Table 2-7A

Hatch Nuclear Plant

RADIOACTIVE EFFLUENT RELEASE REPORT - 2008

Gaseous Effluents - Batch Release Summary

Unit: 1

Starting: 1-Jan-2008 Ending: 31-Dec-2008

Gaseous Releases	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Year Totals
1. Number of batch releases		0	0	0	0	0
2. Total time period for batch releases	(Minutes)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3. Maximum time period for a batch release	(Minutes)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4. Average time period for a batch release	(Minutes)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
5. Minimum time period for a batch release	(Minutes)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Table 2-7B

Hatch Nuclear Plant

RADIOACTIVE EFFLUENT RELEASE REPORT - 2008

Gaseous Effluents - Batch Release Summary

Unit: 2

Starting: 1-Jan-2008 Ending: 31-Dec-2008

Gaseous Releases	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Year Totals
1. Number of batch releases		0	0	0	0	0
2. Total time period for batch releases	(Minutes)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3. Maximum time period for a batch release	(Minutes)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4. Average time period for a batch release	(Minutes)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
5. Minimum time period for a batch release	(Minutes)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Table 2-8A

Hatch Nuclear Plant

RADIOACTIVE EFFLUENT RELEASE REPORT - 2008

Gaseous Effluents - Abnormal Release Summary

Unit: 1

Starting: 1-Jan-2008 Ending: 31-Dec-2008

Gaseous Releases	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Year Totals
1. Number of Releases		0	0	0	0	0
2. Total Time For All Releases	(Minutes)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3. Maximum Time For A Release	(Minutes)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4. Average Time For A Release	(Minutes)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
5. Minimum Time For A Release	(Minutes)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
6. Total activity for all releases	(Curies)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Table 2-8B

Hatch Nuclear Plant

RADIOACTIVE EFFLUENT RELEASE REPORT - 2008

Gaseous Effluents - Abnormal Release Summary

Unit: 2

Starting: 1-Jan-2008 Ending: 31-Dec-2008

Gaseous Releases	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Year Totals
1. Number of Releases		0	0	0	0	0
2. Total Time For All Releases	(Minutes)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3. Maximum Time For A Release	(Minutes)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4. Average Time For A Release	(Minutes)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
5. Minimum Time For A Release	(Minutes)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
6. Total activity for all releases	(Curies)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Table 2-8C

Hatch Nuclear Plant

RADIOACTIVE EFFLUENT RELEASE REPORT - 2008

Gaseous Effluents - Abnormal Release Summary

Unit: Site

Starting: 1-Jan-2008 Ending: 31-Dec-2008

Gaseous Releases	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Year Totals
1. Number of Releases		0	0	0	0	0
2. Total Time For All Releases	(Minutes)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3. Maximum Time For A Release	(Minutes)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4. Average Time For A Release	(Minutes)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
5. Minimum Time For A Release	(Minutes)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
6. Total activity for all releases	(Curies)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

3.0 Solid Waste

3.1 Regulatory Requirements

The Process Control Program (PCP) and the ODCM requirements presented in this section are for Unit 1 and Unit 2 and are stated in part.

3.1.1 Solid Radioactive Waste System

PCP Section A.3.1 Solid Radioactive Waste System control states:

The solid radwaste system shall be used in accordance with the PROCESS CONTROL PROGRAM to provide for the SOLIDIFICATION of wet solid wastes and for the SOLIDIFICATION and packaging of other radioactive wastes, as required, to ensure that they meet requirements of 10 CFR Parts 20 and 71, prior to shipment of radioactive wastes from the site.

3.1.2 Reporting Requirements

Technical Specification 5.6.3 requires in part:

The Radioactive Effluent Release Report covering the operation of the unit shall be submitted in accordance with 10 CFR 50.36a. The report shall include a summary of the quantities of radioactive liquid and gaseous effluents and solid waste released from the unit. The material provided shall be consistent with the objectives outlined in the ODCM and the Process Control Program and in conformance with 10 CFR 50.36a and 10 CFR 50, Appendix I, Section IV.B.1.

PCP Section A.4.1 states in part:

The Radioactive Effluent Release Report, submitted in accordance with Technical Specification 5.6.3, shall include a summary of the quantities of solid radwaste 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 6 month basis following the format of Appendix B thereof.

For each type of solid radwaste shipped offsite during the report period, the report shall include the following information:

a. Container volume.

b. Total curie quantity (specify whether determined by measurement or estimate).

c. Principal radionuclides (specify whether determined by measurement or estimate).

d. Type of waste (such as spent resin, compacted dry waste, evaporator bottoms).

e. Type of container (such as LSA, type A, type B, large quantity).

f. Solidification agent (such as cement).

Major changes to the solid radioactive waste treatment system shall be reported to the Nuclear Regulatory Commission in the Radioactive Effluent Release Report for the period in which the evaluation was reviewed and accepted by the PRB.

3.2 Solid Waste Data

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

TABLE 3-1
E. I. HATCH NUCLEAR PLANT
RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
SOLID WASTE AND IRRADIATED FUEL SHIPMENTS
UNIT 1 AND 2

STARTING: 1-Jan-2008 ***ENDING: 30-Jun-2008***

A. SOLID WASTE SHIPPED OFFSITE FOR BURIAL OR DISPOSAL (Not irradiated fuel)

1. Type of waste	UNIT	6 month period	Est. Total ERROR %
a. Spent resins, filter sludges, evaporator bottoms, etc.	m^3	1.241E+01	
	Ci	1.018E+03	1.00 E 01
b. Dry compressible waste, contaminated equip. etc.	m^3	1.410E+02	
	Ci	4.960E-01	2.00 E 01
c. Irradiated components, control rods	m^3		
	Ci		
d. Control Rod Drive Filters	m^3		
	Ci		
e. Other (describe) Equip. etc.	m^3		
	Ci		

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

ISOTOPE	PERCENT	CURIES
a.Fe-55	75.4	7.680E+02
Co-60	13.1	1.329E+02
Zn-65	2.22	2.260E+01
Mn-54	5.97	6.080E+01
Cr-51	0.9	9.020E+00
Other	2.42	2.467E+01
b.Fe-55	22.2	1.100E-01
Co-60	25.6	1.270E-01
Mn-54	5.71	2.830E-02
Zn-65	35.2	1.750E-01
Other	11.3	5.600E-02
c.		
d.		
e.		

3. Solid Waste Disposition

Number of Shipments	Mode of Transportation	Destination
All waste sent to processors	N/A	N/A

B. IRRADIATED FUEL SHIPMENTS (Disposition)

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

TABLE 3-1
E. I. HATCH NUCLEAR PLANT
RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
SOLID WASTE AND IRRADIATED FUEL SHIPMENTS
UNIT 1 AND 2

STARTING: 1-Jul-2008 ***ENDING: 31-Dec-2008***

A. SOLID WASTE SHIPPED OFFSITE FOR BURIAL OR DISPOSAL (Not irradiated fuel)

1. Type of waste	UNIT	6 month period	Est. Total ERROR %
a. Spent resins, filter sludges, evaporator bottoms, etc.	m^3	4.70E+01	
	Ci	3.20E+01	1.00 E 01
b. Dry compressible waste, contaminated equip. etc.	m^3	7.28E+01	
	Ci	2.58E+01	2.00 E 01
c. Irradiated components, control rods,	m^3		
	Ci		
d. Control Rod Drive Filters	m^3		
	Ci		
e. Other (describe) Equip. etc.	m^3		
	Ci		

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

ISOTOPE	PERCENT	CURIES
a.Fe-55	51.8	1.66E+01
Co-60	31.1	9.95E+00
Zn-65	3.4	1.09E+00
Mn-54	6.40	2.05E+00
Other	7.3	2.34E+00
b.Fe-55	22.2	5.73E+00
Co-60	25.6	6.61E+00
Mn-54	5.71	1.47E+00
Zn-65	35.2	9.09E+00
Other	11.3	2.91E+00
c.		
d.		
e.		

3. Solid Waste Disposition

Number of Shipments	Mode of Transportation	Destination
All waste sent to processors	Tractor/Trailer	Energy Solutions

B. IRRADIATED FUEL SHIPMENTS (Disposition)

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

TABLE 3-1
E. I. HATCH NUCLEAR PLANT
RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
SOLID WASTE AND IRRADIATED FUEL SHIPMENTS
UNIT 1 AND 2

STARTING: 1-Jan-2008 ENDING: 30-Jun-2008

TYPE OF WASTE	CURIE QUANTITY/ DETERMINED	PRINCIPAL NUCLIDES/ DETERMINATION	BURIAL CONTAINER DESCRIPTION	NUMBER OF CONTAINERS SHIPPED	VOLUME OF EACH CONTAINER CUBIC FEET (FT 3)	TYPE SHIPMENT/ CONTAINER	SOLIDIFICATION AGENT
Dewatered Resins	1018	Zn-65,Fe-55,Co-60 Mn-54, Cr-51	High Integrity Container	3.64 * See Note	120.3	14-210 DOT 7A TYPE A CASK/ 8-120(B) CASK/ 14-210**STC Cask	N/A
Dry Active Waste	0.496	Fe-55,Co-60,Mn-54 Zn-65	B-25 Boxes/High Integrity Container	55.32 * See Note	90	**STC (B-25)	N/A

* **Note: The actual size and number of the containers may vary from the recorded values due to the use of different containers by waste processors.**

** **STC-Strong Tight Container**

TABLE 3-1
E. I. HATCH NUCLEAR PLANT
RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
SOLID WASTE AND IRRADIATED FUEL SHIPMENTS
UNIT 1 AND 2

STARTING: 1-JUL-2008 ENDING:31-DEC-2008

TYPE OF WASTE	CURIE QUANTITY/ DETERMINED	PRINCIPAL NUCLIDES/ DETERMINATION	BURIAL CONTAINER DESCRIPTION	NUMBER OF CONTAINERS SHIPPED	VOLUME OF EACH CONTAINER CUBIC FEET (FT 3)	TYPE SHIPMENT/ CONTAINER	SOLIDIFICATION AGENT
Dewatered Resins	8.48	Zn-65,Fe-55,Co-60 Mn-54	Carbon Steel Liners	4	195 (External)	14-210 CASK	N/A
Dry Active Waste	72.8	Fe-55,C0-60,Mn-54 Zn-65	B-25 Boxes/High Integrity Container	29 * See Note	96	B-25 Boxes, Sealand Containers	N/A

* **Note: The actual type, size and number of the containers may vary from the recorded values due to the use of different containers by waste processors for final disposal of processed resin and DAW.**

4.0 Doses to Members of the Public Inside the Site Boundary

4.1 Regulatory Requirements

ODCM 7.2.2.3 states in part that the Radioactive Effluent Release Report shall also include an assessment of the radiation doses from radioactive liquid and gaseous effluents to MEMBERS OF THE PUBLIC due to their activities inside the SITE BOUNDARY during the report period; this assessment must be performed in accordance with the ODCM.

4.2 Demonstration of Compliance

The locations of concern within the site boundary are the Roadside Park, the Camping Area, the Recreation Area, and the Visitors Center. Listed in Table 4-1 are: The distance and direction 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 Main Stack (elevated) and from the reactor building (ground level); and the estimated maximum occupancy factor for an individual and the assumed age group of this individual.

The source term is not listed in Table 4-1 . The source term is listed in Tables 2-2A and 2-2B, for the elevated releases. Similarly the source term is listed in Tables 2-3A and 2-3B for the ground level releases.

The maximum doses in units of mrem accumulated by an individual MEMBER OF THE PUBLIC due to their activities inside the site boundary during the reporting period are presented in Table 4-1.

Table 4-1

Hatch Nuclear Plant

RADIOACTIVE EFFLUENT RELEASE REPORT - 2008

Doses to a Member of the Public Due to Activities Inside the Site Boundary

Unit: Site

Starting: 1-Jan-2008 Ending: 31-Dec-2008

Location Name: ROADSIDE PARK
Distance (kilometers): 1.18E+00
Sector: WNW
Occupancy Factor: 2.28E-04
Age Group: Child

Elevated Release	Noble Gas	X/Q (sec/m3): 2.42E-08	
Elevated Release	Particulate and Radioiodine	X/Q (sec/m3): 2.37E-08	D/Q (m-2): 1.29E-09
Ground Level Release	Noble Gas	X/Q (sec/m3): 7.83E-06	
Ground Level Release	Particulate and Radioiodine	X/Q (sec/m3): 7.00E-06	D/Q (m-2): 2.01E-08

	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Year
Bone	mRem	7.55E-12	8.41E-13	2.18E-10	2.31E-10	4.58E-10
Liver	mRem	7.61E-09	9.74E-09	8.76E-09	8.07E-09	3.42E-08
Total Body	mRem	7.61E-09	9.74E-09	8.76E-09	8.07E-09	3.42E-08
Thyroid	mRem	7.67E-09	9.74E-09	8.84E-09	8.11E-09	3.44E-08
Kidney	mRem	7.61E-09	9.74E-09	8.76E-09	8.07E-09	3.42E-08
Lung	mRem	7.61E-09	9.74E-09	8.79E-09	8.10E-09	3.42E-08
GI-Lli	mRem	7.61E-09	9.74E-09	8.76E-09	8.07E-09	3.42E-08
Skin	mRem	1.27E-12	1.74E-13	2.55E-10	2.70E-10	5.27E-10

Table 4-1

Hatch Nuclear Plant

RADIOACTIVE EFFLUENT RELEASE REPORT - 2008

Doses to a Member of the Public Due to Activities Inside the Site Boundary

Unit: Site

Starting: 1-Jan-2008 Ending: 31-Dec-2008

Location Name: CAMPING AREA
Distance (kilometers): 1.27E+00
Sector: WNW
Occupancy Factor: 5.48E-03
Age Group: Child

Elevated Release	Noble Gas	X/Q (sec/m3): 2.38E-08	
Elevated Release	Particulate and Radioiodine	X/Q (sec/m3): 2.33E-08	D/Q (m-2): 2.01E-08
Ground Level Release	Noble Gas	X/Q (sec/m3): 7.03E-06	
Ground Level Release	Particulate and Radioiodine	X/Q (sec/m3): 6.27E-06	D/Q (m-2): 1.80E-08

	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Year
Bone	mRem	4.77E-10	6.88E-11	4.73E-09	4.99E-09	1.03E-08
Liver	mRem	1.64E-07	2.10E-07	1.89E-07	1.74E-07	7.36E-07
Total Body	mRem	1.64E-07	2.10E-07	1.89E-07	1.74E-07	7.36E-07
Thyroid	mRem	1.65E-07	2.10E-07	1.90E-07	1.75E-07	7.40E-07
Kidney	mRem	1.64E-07	2.10E-07	1.89E-07	1.74E-07	7.36E-07
Lung	mRem	1.64E-07	2.10E-07	1.89E-07	1.74E-07	7.38E-07
GI-Lli	mRem	1.64E-07	2.10E-07	1.89E-07	1.74E-07	7.36E-07
Skin	mRem	3.98E-10	6.52E-11	5.54E-09	5.84E-09	1.18E-08

Table 4-1

Hatch Nuclear Plant

RADIOACTIVE EFFLUENT RELEASE REPORT - 2008

Doses to a Member of the Public Due to Activities Inside the Site Boundary

Unit: Site

Starting: 1-Jan-2008 Ending: 31-Dec-2008

Location Name: RECREATION AREA
Distance (kilometers): 1.03E+00
Sector: SSE
Occupancy Factor: 2.37E-02
Age Group: Child

Elevated Release	Noble Gas	X/Q (sec/m3): 3.30E-08	
Elevated Release	Particulate and Radioiodine	X/Q (sec/m3): 3.21E-08	D/Q (m-2): 1.56E-09
Ground Level Release	Noble Gas	X/Q (sec/m3): 6.42E-06	
Ground Level Release	Particulate and Radioiodine	X/Q (sec/m3): 5.73E-06	D/Q (m-2): 2.36E-08

	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Year
Bone	mRem	6.86E-10	7.88E-11	2.66E-08	2.82E-08	5.55E-08
Liver	mRem	6.48E-07	8.29E-07	7.54E-07	6.95E-07	2.92E-06
Total Body	mRem	6.48E-07	8.29E-07	7.54E-07	6.95E-07	2.92E-06
Thyroid	mRem	6.53E-07	8.29E-07	7.60E-07	6.98E-07	2.94E-06
Kidney	mRem	6.48E-07	8.29E-07	7.54E-07	6.95E-07	2.92E-06
Lung	mRem	6.48E-07	8.29E-07	7.56E-07	6.98E-07	2.93E-06
GI-Lli	mRem	6.48E-07	8.29E-07	7.54E-07	6.96E-07	2.93E-06
Skin	mRem	1.59E-10	2.19E-11	3.12E-08	3.30E-08	6.43E-08

Table 4-1

Hatch Nuclear Plant

RADIOACTIVE EFFLUENT RELEASE REPORT - 2008

Doses to a Member of the Public Due to Activities Inside the Site Boundary

Unit: Site

Starting: 1-Jan-2008 Ending: 31-Dec-2008

Location Name: VISITORS CENTER
Distance (kilometers): 6.94E-01
Sector: WSW
Occupancy Factor: 4.57E-04
Age Group: Child

Elevated Release	Noble Gas	X/Q (sec/m3): 5.00E-08	
Elevated Release	Particulate and Radioiodine	X/Q (sec/m3): 4.97E-08	D/Q (m-2): 2.26E-09
Ground Level Release	Noble Gas	X/Q (sec/m3): 1.87E-05	
Ground Level Release	Particulate and Radioiodine	X/Q (sec/m3): 1.72E-05	D/Q (m-2): 5.47E-08

	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Year
Bone	mRem	3.60E-11	3.92E-12	1.19E-09	1.26E-09	2.49E-09
Liver	mRem	3.75E-08	4.79E-08	4.33E-08	3.99E-08	1.69E-07
Total Body	mRem	3.75E-08	4.79E-08	4.33E-08	3.99E-08	1.69E-07
Thyroid	mRem	3.78E-08	4.80E-08	4.36E-08	4.00E-08	1.69E-07
Kidney	mRem	3.75E-08	4.79E-08	4.33E-08	3.99E-08	1.69E-07
Lung	mRem	3.75E-08	4.80E-08	4.34E-08	4.00E-08	1.69E-07
GI-Lli	mRem	3.75E-08	4.79E-08	4.33E-08	3.99E-08	1.69E-07
Skin	mRem	4.90E-12	6.12E-13	1.39E-09	1.47E-09	2.87E-09

5.0 Total Dose from Uranium Fuel Cycle (40 CFR 190)

5.1 Regulatory Requirements

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.

5.2 Demonstration of Compliance

No dose limits stated in ODCM Sections 2.1.3, 3.1.3, and 3.1.4 were exceeded. Therefore, compliance with 40 CFR 190 dose limits was demonstrated in accordance with the requirements of ODCM Section 5.1.3.

6.0 Meteorological Data

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

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

7.0 Program Deviations

7.1 Inoperable Liquid or Gaseous Effluent Monitoring Instrumentation

7.1.1 Regulatory Requirements

ODCM, Chapter 7, Section 7.2.2.6.2 states that the Radioactive Effluent Release Report shall include deviations from the liquid and gaseous effluent monitoring instrumentation operability requirements included in Sections 2.1.1 and 3.1.1, respectively.

7.1.2 Description of Deviations

There were no deviations from the liquid and gaseous effluent monitoring instrumentation operability requirements during this reporting period.

7.2 Tanks Exceeding Curie Content Limits

7.2.1 Regulatory Requirements

ODCM 7.2.2.6 states in part that the report shall include notifications if the contents within any outside temporary tank, for liquids, exceed the limit of Technical Specification 5.5.8.b.

7.2.2 Description of Deviations

There were no outside temporary tanks, for liquids, that exceeded the limit of Technical Specification 5.5.8.b during this reporting period.

7.3 Effluent Sample Analysis Exceeding Minimum Detectable Concentration (MDC)

7.3.1 Regulatory Requirements

ODCM 7.2.2.6 states in part that deviations from MDC(s) required in Table 3-3 shall be included in the Radioactive Effluent Release Report.

7.3.2 Description of Deviation

There were no deviations from MDC(s) required in Table 3-3 during this reporting period.

8.0 Changes to the Plant Hatch Offsite Dose Calculation Manual (ODCM)

8.1 Regulatory Requirements

Pursuant to Technical Specification 5.5.1 and ODCM Section 7.2.2.5, licensee initiated changes shall be submitted to the NRC in the form of a complete, legible copy of the entire ODCM as part of or concurrent with the Radioactive Effluent Release Report for the period of the report in which any change in the ODCM was made. Each change shall be identified by markings in the margin of the affected pages, clearly indicating the area of the page that was changed, and shall indicate the date (i.e., month and year) the change was implemented.

8.2 Description of Changes

There were no changes to the Hatch ODCM in 2008.

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

9.1 Regulatory Requirements

The Radioactive Effluent Release Report shall include. . . . any major change to liquid, gaseous, or solid radwaste treatment systems pursuant to ODCM Chapter 7, Section 7.2.2.7.

9.2 Description of Major Changes

Gaseous Radwaste System

There were no major changes to the gaseous radwaste system during this reporting period.

Solid Radwaste System

There were no major changes to the solid radwaste system during this reporting period.

Liquid Radwaste System

There were no major changes to the Liquid Radwaste Treatment System during this reporting period.

SOUTHERN COMPANY

E. I. HATCH NUCLEAR PLANT

UNITS NO. 1 & 2

ANNUAL REPORT

JANUARY 1, 2008 - DECEMBER 31, 2008

APPENDIX A

Release of Radioactive RHR Service Water for 2008

The following historical information is provided to create a perspective for the release of radioactivity during the year 2008 relative to the RHR Service Water System.

In 1996, the analysis of samples from the Unit 1 RHR "B" Loop service water (RHRSW) system identified several radionuclides at very low concentrations. The first indication of contamination was noted on August 8, 1996 and the second indication was noted on August 23, 1996. The total activity in the RHRSW contained within the heat exchanger, which has a volume of approximately 4000 gallons, was respectively estimated to be about 13.7 μCi and 25.6 μCi. On August 23, 1996 repairs were made to a Δp instrument in an effort to stop the inleakage into the service water side of the heat exchanger. To determine if the leak had been repaired, the service water loop of the heat exchanger was decontaminated by flushing and the service water in the loop was then resampled and analyzed. The circulating water flume has a blowdown line, which diverts a small portion of the total circulating water to the river via the discharge structure. This resulted in a release to an unrestricted area. Though this release was both monitored and controlled, it was not through the normally utilized liquid radwaste system but the release to the unrestricted area did in fact take the same release path to the river. The regulatory discreteness of this release is discussed in the 1996 evaluation of the release, which is documented in the 10CFR50.59 Evaluation titled "Unit 1 RHR Service Water: Release of Contaminated Water."

The requirements of the Radioactive Effluent Controls Program are spelled out in TS 5.5.4. The Offsite Dose Calculation Manual (ODCM) implements this program and it conforms to the requirements of 10CFR50.36a for the control of radioactive effluents and for maintaining the doses as low as reasonable achievable. Compliance with TS 5.5.4 regarding liquid releases can be assured by adhering to the requirements of ODCM sections 2.1.2, 2.1.3 and 2.1.4 which respectively provide limits on the concentration of the radioactive material at the point of release to an unrestricted area, the resultant dose to a member of the public from the release, and the necessity of using the radwaste treatment system.

MWO 1-96-02845 was worked during the Unit 1 outage to repair the leaks in the U1 RHR "B" Heat Exchanger. The RHR side of the Heat Exchanger was pressurized with helium and a helium detector on the RHRSW side was used to look for the presence of leaks. Based on this it was determined that one of the outermost tubes (tube 1-1) was definitely leaking. No other tubes were identified as definite leakers; however, the eight tubes closest to tube 1-1 were identified as possible leakers.

Integrated Technologies, Inc. performed an eddy current inspection of 245 of the tubes, including all of the suspected leakers and surrounding tubes. This inspection also identified tube 1-1 as a leaker. The tube breach is located next to the top support in the outlet leg. The cause is unknown. No other leaking tubes were identified.

The conservative decision was made to plug the leaker as well as the eight surrounding tubes. After plugging the tubes a hydrostatic pressure test was conducted at 300 psi and the Heat Exchanger was inspected for signs of leakage. No leakage was noted at this time. The Heat Exchanger was deconned, closed up and placed back in service. The Chemistry Department has sampled and monitored the activity during the operation of the Heat Exchanger.

The only concentrations of radionuclides found in the RHRSW samples for 2008 were from 3/9/08, when the total concentration released was 3.01E-8 μCi/ml. As shown in the following table, the highest concentrations were found in 1997, when the total concentration released was 1.21E-5 μCi/ml.

Radio-nuclide	1997 (μCi/ml)	1998 (μCi/ml)	1999 (μCi/ml)	2000 (μCi/ml)	2001 (μCi/ml)
Cr-51	1.07E-6				3.16E-7
Mn-54	2.37E-6	4.95E-7		2.49E-7	2.53E-7
Fe-59					1.19E-7
Co-60	4.94E-6	1.12E-6	2.27E-8	2.82E-7	1.99E-7
Zn-65	2.06E-6	7.96E-8			2.24E-7
Co-58	1.06E-6				
Cs-134	2.10E-7				
Cs-137	4.43E-7				

Radio-nuclide	2002 (μCi/ml)	2003 (μCi/ml)	2004 (μCi/ml)	2005 (μCi/ml)	2006 (μCi/ml)	2007 (μCi/ml)	2008 (μCi/ml)
Mn-54	2.78E-8	1.46E-8		8.59E-9		1.23E-8	1.89E-8
Co-60	1.99E-7	2.65E-7	3.78E-8	2.96E-8	1.24E-7	2.43E-7	1.12E-8
Nb-95						5.46E-9	
Cs-137						7.77E-9	

Fe-59 was identified in one sample (7/18/01). Heat exchanger testing and the analysis result indicate no new leaks to the system. The results of the samples analyzed in 2005 indicate we are monitoring residual contamination from the 1996 leaks.

ODCM section 2.1.2 requires that the concentrations of the radioactive materials released be limited to 10 times (10X) the concentrations specified in 10CFR20, Appendix B, Table 2, Column 2, with the exception for dissolved or entrained noble gases whose concentration shall be limited to 1.0E-4 μCi/ml.

The following discussion is based on a release duration of 1 minute, a release volume of 4,000 gallons, a total dilution of <u>only</u> 10,000 gallons, and the radionuclide concentrations from 1997. This is a very conservative estimate, since credit for the additional dilution provided by the circulating water flume was not taken into consideration and the activity from 1997 was higher with more radionuclides. The sum of the ratios of the concentration of each radionuclide in the mixture to its effluent concentration limit (ECL) was 1.15. The sum of the ECL fractions must be less than ten (<10) to ensure that the concentration limit for the mixture is not exceeded. As can be seen, the sum is much less that ten. (10CFR20 Appendix B states that the sum of the fractions of the nuclides divided by their effluent concentration limits (ECLs) must be less than one. Further NRC guidance, Technical Specifications, and the ODCM allow the

ECLs in Appendix B to be increased by a factor of 10. Mathematically this can be achieved by dividing the nuclides by the original 10CFR 20 Appendix B ECLs and insuring that the sum of the fractions is less than 10. The plant software performs the sum of the ECL fractions and comparisons this way to insure compliance with 10CRF20 limits.)

ODCM section 2.1.3 requires that the annual dose to a member of the public, in unrestricted areas, due to liquid releases from each unit be limited to 3 mrem to the total body and 10 mrem to any organ. The dose in any quarter is limited to half of the annual limits. Dose calculations were performed for this release, in accordance with ODCM section 2.4, to evaluate the doses relative to this release. The total body dose was 6.66 E-5 mrem (2.2 E-3 % of its annual limit) and the highest organ dose was 7.39 E-5 mrem to the GI-LLI, gastrointestinal track, (7.4 E-4 % of its annual limit). The resultant doses are quite low and essentially do not contribute to the quarterly and/or the annual dose limits. This provides a high degree of assurance that the release in no way presented a threat to the health and safety of a member of the public, even using the very low dilution rate. With a higher dilution value the ECL fraction and the resultant doses are reduced further and become even less significant.

ODCM section 2.1.4 requires that the radwaste system be employed to reduce the radioactivity in the liquid waste prior to its discharge whenever the projected dose due to the release would exceed 0.06 mrem to the total body and 0.2 mrem to any organ. As shown in the previous paragraph, the total body dose due to the release of the RHRSW was much less than 0.06 mrem and the maximum organ dose was much less than 0.2 mrem.

10CFR20.1302 (b)(I) requires that a licensee show compliance with the annual limit of 100 mrem to any member of the public by demonstrating that certain concentration limits of the effluent at the point of release are not exceeded. This was addressed above in the assessment of ODCM section 2.1.2.

10CFR20.1501 (a)(2)(ii) & (iii) requires the licensee to evaluate the concentration or quantities of radioactive materials and the potential radiological hazard, respectively. The concentrations and quantity of the radioactive materials in the release was evaluated by sampling and analysis as discussed above. The potential radiological hazard was also evaluated by performance of the dose calculations, which would be a result of the release, as discussed above in the assessment of ODCM section 2.1.3.

This release does not constitute a Licensee Event Report (LER) based on the following. 10CFR 50.73 (A)(2)(VIII)(B) requires the licensee to report any liquid effluent release which exceeds 20 times the applicable concentration specified in 10CFR20, Appendix B, Table 2, column 2, at the point of entry into the receiving waters (i.e., unrestricted area). This is justified as discussed above in the assessment of ODCM section 2.1.3; it can be seen that the concentrations are much less that the applicable limits.

Design Criterion 64 in Appendix A to 10CFR50 requires the monitoring of effluent discharge paths. Performance of the sampling and analysis of the RHRSW service water before its release complied with this criterion.

Compliance with Appendix I to 10CFR50 was assured by adherence to the applicable ODCM sections as discussed above. Furthermore, Appendix I is the bases for one of these ODCM sections.

40CFR190 is concerned with the annual dose to any member of the public due to releases of radioactivity and to radiation from the uranium fuel cycle sources. This is addressed by TS 5.5.4.j and implemented by ODCM section 5.1.2, which states that additional calculation and reporting is required when any of the dose limits as specified in the ODCM sections 2.1.3, 3.1.3, or 3.1.4 are exceeded by a factor of two. This requirement is not applicable for the release based on the doses as discussed above in the assessment of ODCM section 2.1.3.

NRC Bulletin 80-10, "Contamination of Nonradioactive Systems and Resulting Potential for Unmonitored, Uncontrolled Releases of Radioactivity to the Environment" lists four actions for the licensee. First: identify the affected systems; the Unit 1 RHR "B" loop was identified. Second: establish a sampling/analysis of monitoring program for the affected systems; this was done. Third: restrict use of the system until the cause of the contamination is identified and corrected, and the system is decontaminated. The release was the result of identifying the leakage, implementation of corrective action and of decontaminating the system. The third action also states, that, if it is considered necessary to continue operation of the system as contaminated, then a 10CFR50.59 evaluation must be performed. This was done in 1996. The fourth action calls attention to the regulations to be complied with and states that releases must be monitored and controlled. The release of the RHR service water was sampled and monitored (evaluated) by the sampling and analysis prior to the flush taking place; the release was controlled in the fact that the flush was a planned evolution.

Administrative controls and sampling have been established to ensure that any future releases would be within 10CFR20 limits, reference Lab Standing Order, SO-HPC-001-0402, and 64CH-SAM-028-0.

Edwin I. Hatch Nuclear Plant
Joseph M. Farley Nuclear Plant
Vogtle Electric Generating Plant
Annual Radioactive Effluent Release Reports for 2008

Enclosure 2

Farley Annual Radioactive Effluent Release Report for 2008

SOUTHERN NUCLEAR OPERATING COMPANY
FARLEY NUCLEAR PLANT UNIT NO. ONE
LICENSE NO. NPF-2
AND
FARLEY NUCLEAR PLANT UNIT NO. TWO
LICENSE NO. NPF-8

ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
CALENDAR YEAR 2008

FARLEY NUCLEAR PLANT
ANNUAL RADIOACTIVE EFFLUENT
RELEASE REPORT

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1.0 LIQUID EFFLUENTS

This section contains applicable ODCM limits for liquid effluents as well as the quantities of radioactive liquid effluents released during 2008. These quantities are summarized on a quarterly basis and include any unplanned releases. A tabulation of the total body and organ doses which were calculated in accordance with ODCM 2.4 are presented to show conformance with the limits of ODCM 2.1.3.

1.1 Regulatory Requirements

1.1.1 Concentration Limits

Technical Specifications 5.5.4.b and 5.5.4.c state that the concentration of radioactive material released in liquid effluents to UNRESTRICTED AREAS (see ODCM Figure 10-1) shall be limited at all times to ten times the concentrations specified in 10CFR20, Appendix B, Table 2, Column 2 for radionuclides other than dissolved or entrained noble gases. For dissolved or entrained noble gases, the concentration shall be limited to 1.0E-04 uCi/ml total activity.

1.1.2 Dose Limits

Technical Specifications 5.5.4.d and 5.5.4.e state that 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 ODCM Figure 10-1) shall be limited:

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

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

1.2 Effluent Concentration Limit (ECL)

ECL values used in determining allowable liquid radwaste release rates and concentrations, for principal gamma emitters, I-131, tritium, Sr-89, Sr-90 and Fe-55, are taken from 10CFR Part 20, Appendix B, Table 2, Column 2. A tolerance factor of up to 10 is utilized to allow flexibility in establishing practical monitor setpoints which can accommodate effluent releases at concentrations higher than the ECL values stated in 10CFR20, Appendix B, Table 2, Column 2.

For dissolved or entrained noble gases in liquid radwaste, the ECL is 1.0E-04 uCi/ml total activity.

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

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

1.3 Measurements and Approximation of Total Radioactivity

The radionuclides listed below are considered when evaluating liquid effluents:

MN-54	CS-134
FE-59	CS-137
CO-58	CE-141
CO-60	CE-144
ZN-65	MO-99
SR-89	FE-55
SR-90	H-3
I-131	

1.3.1 Total Radioactivity Determination

Batch Releases: Representative pre-release grab samples are obtained and analyzed in accordance with ODCM Table 2-3. Isotopic analyses are performed using the computerized pulse height analysis system utilizing high resolution germanium detectors. Isotopic values thus obtained are used for release rate calculations as specified in the ODCM. Only those nuclides that are detected are used in the calculations. All Strontium and Iron-55 samples are sent offsite to the Georgia Power Environmental Laboratory for analysis. Gross beta and gross alpha determinations are made using 2 pi gas flow proportional counters. Tritium determinations are made using liquid scintillation techniques. Dissolved gases are determined employing grab sampling techniques and then counting on the pulse height analyzer.

The sample analyses results are used along with the ECL values to determine the ECL fraction for the planned release. The ECL fraction is then used, with the appropriate safety factors, and the expected dilution stream flow, to calculate the maximum permissible release rate and a liquid effluent monitor setpoint. The monitor setpoint is calculated to assure that the limits of the ODCM are not exceeded. A monitor reading in excess of the calculated setpoint will result in automatic termination of the liquid radwaste discharge.

Radionuclide concentrations, safety factors, dilution stream flow rate, and liquid effluent radiation monitor calibration factors are used by the computer to generate a pre-release printout. If the release is not permissible, appropriate warnings will be displayed on the computer screen and on the printout. If the release is permissible, it is approved by a Chemistry Technician. The release permit is transferred from the Chemistry Department to the Operations Department for release. When the release is completed, the actual release data are provided to the Chemistry Department. These release data, including release rate and release duration, are input into the computer and a post-release printout is generated. This printout contains the actual release rates, radionuclide concentrations and quantities, dilution flow, and calculated doses to an individual.

Continuous Releases: Continuous releases are analogous to batch releases except that they are analyzed on a weekly composite basis in accordance with ODCM Table 2-3.

Typically achieved liquid effluent sample analyses minimum detectable concentrations are reported in Table 1-4.

1.3.2 Total Error Estimation

The maximum error associated with volume and flow measurements, based upon plant calibration practice is estimated to be + or - 10%. The average error associated with counting is estimated to be less than + or - 15%.

1.4 Liquid Effluent Release Data

Summaries of all radioactive liquid effluents released from Units 1 and 2 during 2008 are presented in accordance with Regulatory Guide 1.21 Tables 2A and 2B. Information required by Table 2A is found in this report in Tables 1-1A, 1-1B, and 1-1C; Table 2-B information is presented in Tables 1-2A, 1-2B, and 1-2C. Data is presented on a quarterly basis as required by Regulatory Guide 1.21 for all four quarters.

1.5 Radiological Impact Due to Liquid Releases

The total body and organ doses for Units 1 and 2 are provided in the following tables in order to show conformance with the limits of ODCM 2.1.3:

Unit 1 2008 Doses to a Member of the Public due to Liquid Releases: Table 1-3A

Unit 2 2008 Doses to a Member of the Public due to Liquid Releases: Table 1-3B

1.6 Liquid Effluents - Batch Releases

Batch release information for Units 1 and 2 is summarized in the following tables:

Unit 1 2008 Liquid Effluents - Batch Release Summary: Table 1-5A

Unit 2 2008 Liquid Effluents - Batch Release Summary: Table 1-5B

1.7 Liquid Effluents - Abnormal Releases

There were no abnormal releases during 2008.

Abnormal release information for Units 1 and 2 is summarized in the following tables:

Unit 1 2008 Liquid Effluents - Abnormal Release Summary: Table 1-6A

Unit 2 2008 Liquid Effluents - Abnormal Release Summary: Table 1-6B

Table 1-1A

Joseph M Farley Nuclear Plant
RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Liquid Effluents - Summation Of All Releases
Unit: 1
Starting: 1-Jan- 2008 Ending: 31-Dec-2008

Type of Effluent	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter
A. Fission And Activation Products					
1. Total Release (not including tritium, gases, alpha)	Curies	8.70E-03	3.34E-03	9.80E-04	4.43E-03
2. Average diluted concentration during period	uCi/mL	5.81E-10	2.09E-10	6.49E-11	3.26E-10
3. Percent of Applicable Limit	%	*	*	*	*
B. Tritium					
1. Total Release	Curies	8.79E+01	8.87E+01	2.59E+02	1.26E+02
2. Average diluted Concentration during period	uCi/mL	5.87E-06	5.55E-06	1.72E-05	9.26E-06
3. Percent of Applicable Limit	%	*	*	*	*
C. Dissolved and Entrained Gases					
1. Total Release	Curies	1.68E-05	1.94E-05	2.29E-04	2.32E-03
2. Average diluted Concentration during period	uCi/mL	1.12E-12	1.21E-12	1.51E-11	1.71E-10
3. Percent of Applicable Limit	%	*	*	*	*
D: Gross Alpha Radioactivity					
1. Total Release	Curies	0.00E+00	4.54E-05	1.26E-05	4.72E-06
E: Waste Vol Release (Pre-Dilution)					
	Liters	8.08E+07	7.81E+07	7.59E+07	7.84E+07
F. Volume of Dilution Water Used					
	Liters	1.49E+10	1.59E+10	1.50E+10	1.35E+10

*Applicable limits are expressed in terms of dose.
See Tables 1-3A and 1-3B of this report.

Table 1-1B

Joseph M Farley Nuclear Plant
RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Liquid Effluents - Summation Of All Releases
Unit: 2
Starting: 1-Jan- 2008 Ending: 31-Dec-2008

Type of Effluent	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter
A. Fission And Activation Products					
1. Total Release (not including tritium, gases, alpha)	Curies	1.43E-02	8.77E-03	6.29E-03	4.47E-03
2. Average diluted concentration during period	uCi/mL	8.56E-10	4.95E-10	3.59E-10	2.83E-10
3. Percent of Applicable Limit	%	*	*	*	*
B. Tritium					
1. Total Release	Curies	7.14E+01	1.69E+02	3.10E+02	6.26E+01
2. Average diluted Concentration during period	uCi/mL	4.26E-06	9.53E-06	1.77E-05	3.97E-06
3. Percent of Applicable Limit	%	*	*	*	*
C. Dissolved and Entrained Gases					
1. Total Release	Curies	2.55E-04	5.77E-05	4.33E-04	1.63E-03
2. Average diluted Concentration during period	uCi/mL	1.52E-11	3.26E-12	2.47E-11	1.03E-10
3. Percent of Applicable Limit	%	*	*	*	*
D: Gross Alpha Radioactivity					
1. Total Release	Curies	0.00E+00	4.28E-05	4.62E-05	1.54E-05
E: Waste Vol Release (Pre-Dilution)					
	Liters	7.30E+07	6.92E+07	6.42E+07	4.53E+07
F. Volume of Dilution Water Used					
	Liters	1.67E+10	1.76E+10	1.75E+10	1.57E+10

*Applicable limits are expressed in terms of dose.
See Tables 1-3A and 1-3B of this report.

Table 1-1C

Joseph M Farley Nuclear Plant
RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Liquid Effluents - Summation Of All Releases
Unit: Site
Starting: 1-Jan- 2008 Ending: 31-Dec-2008

Type of Effluent	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter
A. Fission And Activation Products					
1. Total Release (not including tritium, gases, alpha)	Curies	2.30E-02	1.21E-02	7.27E-03	8.89E-03
2. Average diluted concentration during period	uCi/mL	7.26E-10	3.60E-10	2.23E-10	3.03E-10
3. Percent of Applicable Limit	%	*	*	*	*
B. Tritium					
1. Total Release	Curies	1.59E+02	2.57E+02	5.70E+02	1.88E+02
2. Average diluted Concentration during period	uCi/mL	5.02E-06	7.64E-06	1.74E-05	6.42E-06
3. Percent of Applicable Limit	%	*	*	*	*
C. Dissolved and Entrained Gases					
1. Total Release	Curies	2.72E-04	7.71E-05	6.62E-04	3.95E-03
2. Average diluted Concentration during period	uCi/mL	8.56E-12	2.29E-12	2.03E-11	1.35E-10
3. Percent of Applicable Limit	%	*	*	*	*
D: Gross Alpha Radioactivity					
1. Total Release	Curies	0.00E+00	8.82E-05	5.88E-05	2.01E-05
E: Waste Vol Release (Pre-Dilution)					
	Liters	1.54E+08	1.47E+08	1.40E+08	1.24E+08
F. Volume of Dilution Water Used					
	Liters	3.16E+10	3.35E+10	3.25E+10	2.92E+10

*Applicable limits are expressed in terms of dose.
See Tables 1-3A and 1-3B of this report.

Table 1-2A

Joseph M Farley Nuclear Plant
RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Liquid Effluents
Unit: 1
Starting: 1-Jan-2008 Ending: 31-Dec-2008

Nuclides Released	Unit	Continuous Mode			
		1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter
Fission & Activation Products					
No Nuclides Found		0.00E+00	0.00E+00	0.00E+00	0.00E+00
Tritium					
No Nuclides Found		0.00E+00	0.00E+00	0.00E+00	0.00E+00
Dissolved And Entrained Gases					
No Nuclides Found		0.00E+00	0.00E+00	0.00E+00	0.00E+00

Zeroes in this table indicates that no radioactivity was present at detectable levels.

Table 1-2A

Joseph M Farley Nuclear Plant
RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Liquid Effluents
Unit: 1
Starting: 1-Jan-2008 Ending: 31-Dec-2008

Nuclides Released	Unit	Batch Mode			
		1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter
Fission & Activation Products					
Y-88	Curies	0.00E+00	0.00E+00	0.00E+00	4.24E-07
Y-94	Curies	0.00E+00	0.00E+00	0.00E+00	1.93E-06
As-76	Curies	0.00E+00	0.00E+00	0.00E+00	7.30E-07
Co-57	Curies	1.26E-06	0.00E+00	0.00E+00	6.78E-07
Co-58	Curies	9.57E-04	1.93E-04	9.69E-05	7.16E-04
Co-60	Curies	1.14E-03	1.41E-03	4.19E-04	1.24E-03
Cr-51	Curies	0.00E+00	0.00E+00	0.00E+00	6.38E-04
Fe-55	Curies	0.00E+00	6.52E-04	1.81E-04	6.42E-04
Mn-54	Curies	1.04E-05	2.00E-05	0.00E+00	2.12E-05
Na-24	Curies	0.00E+00	4.38E-06	0.00E+00	0.00E+00
Nb-95	Curies	6.51E-05	3.38E-05	8.67E-07	1.21E-04
Nb-97	Curies	0.00E+00	0.00E+00	0.00E+00	1.63E-05
Sr-89	Curies	0.00E+00	8.15E-06	3.98E-05	0.00E+00
Sr-90	Curies	0.00E+00	0.00E+00	4.30E-06	0.00E+00
Y-90M	Curies	0.00E+00	0.00E+00	2.87E-07	0.00E+00
Y-91M	Curies	0.00E+00	0.00E+00	8.96E-07	0.00E+00
Zn-65	Curies	4.62E-04	7.70E-04	1.61E-04	5.30E-04
Zn-69	Curies	0.00E+00	0.00E+00	2.89E-06	0.00E+00
Zr-95	Curies	2.94E-05	1.15E-05	0.00E+00	6.48E-05
Cd-115	Curies	0.00E+00	0.00E+00	0.00E+00	1.04E-06
Cs-134	Curies	0.00E+00	1.62E-06	0.00E+00	0.00E+00
Cs-137	Curies	9.66E-06	6.62E-05	4.62E-05	2.74E-05
Cs-138	Curies	0.00E+00	0.00E+00	1.85E-06	0.00E+00
Hf-181	Curies	0.00E+00	5.64E-07	0.00E+00	0.00E+00
Nb-95M	Curies	0.00E+00	0.00E+00	0.00E+00	7.59E-07

Zeroes in this table indicates that no radioactivity was present at detectable levels.
See Table 1-4 for typical minimum detectable concentrations.

Table 1-2A

Joseph M Farley Nuclear Plant
RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Liquid Effluents
Unit: 1
Starting: 1-Jan-2008 Ending: 31-Dec-2008

		Batch Mode			
Nuclides Released	**Unit**	**1ST Quarter**	**2ND Quarter**	**3RD Quarter**	**4TH Quarter**
Rh-105	Curies	0.00E+00	0.00E+00	0.00E+00	3.25E-04
Sb-124	Curies	0.00E+00	0.00E+00	0.00E+00	3.08E-06
Sb-125	Curies	1.12E-04	1.45E-04	2.44E-05	6.99E-05
Sn-113	Curies	0.00E+00	2.93E-06	0.00E+00	2.41E-07
Te-131	Curies	0.00E+00	0.00E+00	4.21E-07	0.00E+00
Ag-108M	Curies	0.00E+00	1.06E-05	0.00E+00	1.76E-06
Ag-110M	Curies	0.00E+00	1.13E-05	0.00E+00	8.87E-07
In-115M	Curies	0.00E+00	0.00E+00	0.00E+00	1.14E-06
Sn-117M	Curies	8.79E-07	0.00E+00	0.00E+00	0.00E+00
Te-125M	Curies	5.91E-03	0.00E+00	0.00E+00	0.00E+00
Total For Period	**Curies**	**8.70E-03**	**3.34E-03**	**9.80E-04**	**4.43E-03**
Tritium					
H-3	Curies	8.79E+01	8.87E+01	2.59E+02	1.26E+02
Dissolved And Entrained Gases					
Ar-41	Curies	0.00E+00	1.03E-05	0.00E+00	1.90E-05
Xe-133	Curies	1.68E-05	6.00E-06	2.29E-04	6.61E-04
Xe-135	Curies	0.00E+00	7.87E-07	0.00E+00	0.00E+00
Xe-137	Curies	0.00E+00	0.00E+00	0.00E+00	1.64E-03
Xe-138	Curies	0.00E+00	2.32E-06	0.00E+00	0.00E+00
Total For Period	**Curies**	**1.68E-05**	**1.94E-05**	**2.29E-04**	**2.32E-03**

Zeroes in this table indicates that no radioactivity was present at detectable levels.
See Table 1-4 for typical minimum detectable concentrations.

Table 1-2B

Joseph M Farley Nuclear Plant
RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Liquid Effluents
Unit: 2
Starting: 1-Jan-2008 Ending: 31-Dec-2008

Nuclides Released	Unit	Continuous Mode			
		1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter
Fission & Activation Products					
Sr-90	Curies	3.90E-04	0.00E+00	0.00E+00	0.00E+00
Total For Period	**Curies**	**3.90E-04**	**0.00E+00**	**0.00E+00**	**0.00E+00**
Tritium					
H-3	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Dissolved And Entrained Gases					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Zeroes in this table indicates that no radioactivity was present at detectable levels.
See Table 1-4 for typical minimum detectable concentrations.

Table 1-2B

Joseph M Farley Nuclear Plant
RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Liquid Effluents
Unit: 2
Starting: 1-Jan-2008 Ending: 31-Dec-2008

Nuclides Released	Unit	Batch Mode			
		1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter
Fission & Activation Products					
Be-7	Curies	0.00E+00	0.00E+00	2.78E-05	0.00E+00
Co-57	Curies	9.05E-07	0.00E+00	0.00E+00	0.00E+00
Co-58	Curies	8.29E-04	2.73E-04	3.52E-04	1.12E-03
Co-60	Curies	3.55E-03	3.11E-03	2.54E-03	9.73E-04
Cr-51	Curies	1.39E-05	0.00E+00	5.00E-05	4.32E-04
Fe-55	Curies	9.22E-04	1.91E-03	6.23E-04	3.85E-04
Fe-59	Curies	0.00E+00	0.00E+00	0.00E+00	9.06E-07
Mn-54	Curies	8.73E-05	4.54E-05	3.28E-05	1.76E-05
Na-24	Curies	2.39E-06	0.00E+00	4.19E-06	2.30E-06
Nb-95	Curies	1.65E-04	5.08E-05	5.39E-05	4.09E-05
Nb-97	Curies	0.00E+00	2.89E-06	2.87E-04	2.29E-05
Se-75	Curies	7.19E-07	0.00E+00	0.00E+00	0.00E+00
Sr-85	Curies	1.04E-06	0.00E+00	0.00E+00	0.00E+00
Sr-89	Curies	1.26E-05	0.00E+00	0.00E+00	0.00E+00
Sr-91	Curies	0.00E+00	3.45E-06	0.00E+00	0.00E+00
Sr-92	Curies	1.49E-06	0.00E+00	0.00E+00	0.00E+00
Y-91M	Curies	0.00E+00	0.00E+00	0.00E+00	1.67E-06
Zn-65	Curies	1.58E-03	1.95E-03	8.52E-04	5.06E-04
Zn-69	Curies	0.00E+00	3.91E-05	0.00E+00	0.00E+00
Zr-95	Curies	3.06E-05	8.62E-06	1.94E-05	1.11E-05
Ce-146	Curies	0.00E+00	1.76E-06	0.00E+00	0.00E+00
Cs-137	Curies	8.81E-05	1.58E-04	2.22E-04	1.40E-04
Cs-138	Curies	9.61E-06	1.88E-05	8.87E-06	0.00E+00
Eu-152	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
La-142	Curies	0.00E+00	0.00E+00	0.00E+00	6.70E-07

Zeroes in this table indicates that no radioactivity was present at detectable levels.
See Table 1-4 for typical minimum detectable concentrations.

Table 1-2B

Joseph M Farley Nuclear Plant
RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Liquid Effluents
Unit: 2
Starting: 1-Jan-2008 Ending: 31-Dec-2008

		Batch Mode			
Nuclides Released	**Unit**	**1ST Quarter**	**2ND Quarter**	**3RD Quarter**	**4TH Quarter**
Nd-147	Curies	1.54E-06	0.00E+00	0.00E+00	0.00E+00
Rh-105	Curies	0.00E+00	0.00E+00	3.21E-06	2.10E-04
Sb-124	Curies	5.84E-06	6.47E-06	0.00E+00	3.76E-05
Sb-125	Curies	6.41E-04	1.08E-03	9.91E-04	5.60E-04
Sn-113	Curies	0.00E+00	2.57E-05	0.00E+00	0.00E+00
Tc-99M	Curies	0.00E+00	0.00E+00	3.28E-06	0.00E+00
Te-134	Curies	0.00E+00	2.89E-05	0.00E+00	0.00E+00
Zn-69M	Curies	9.16E-07	0.00E+00	0.00E+00	0.00E+00
Ag-108M	Curies	0.00E+00	1.66E-05	4.80E-06	1.40E-06
Ag-110M	Curies	8.47E-06	3.98E-05	1.48E-05	0.00E+00
Sn-117M	Curies	1.28E-06	0.00E+00	0.00E+00	0.00E+00
Te-125M	Curies	6.00E-03	0.00E+00	1.98E-04	0.00E+00
Total For Period	**Curies**	**1.40E-02**	**8.77E-03**	**6.29E-03**	**4.47E-03**
Tritium					
H-3	Curies	7.14E+01	1.69E+02	3.10E+02	6.26E+01

Zeroes in this table indicates that no radioactivity was present at detectable levels.
See Table 1-4 for typical minimum detectable concentrations.

Table 1-2B

Joseph M Farley Nuclear Plant
RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Liquid Effluents
Unit: 2
Starting: 1-Jan-2008 Ending: 31-Dec-2008

Nuclides Released	Unit	Batch Mode			
		1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter
Dissolved And Entrained Gases					
Kr-85	Curies	2.31E-04	0.00E+00	0.00E+00	0.00E+00
Kr-88	Curies	1.55E-06	0.00E+00	0.00E+00	1.21E-06
Kr-85M	Curies	0.00E+00	0.00E+00	3.05E-07	0.00E+00
Xe-133	Curies	2.29E-05	2.43E-05	4.33E-04	1.62E-03
Xe-135	Curies	0.00E+00	0.00E+00	0.00E+00	2.27E-06
Xe-131M	Curies	0.00E+00	3.34E-05	0.00E+00	0.00E+00
Xe-133M	Curies	0.00E+00	0.00E+00	0.00E+00	4.33E-06
Xe-135M	Curies	0.00E+00	0.00E+00	0.00E+00	1.95E-06
Total For Period	**Curies**	**2.55E-04**	**5.77E-05**	**4.33E-04**	**1.63E-03**

Zeroes in this table indicates that no radioactivity was present at detectable levels.
See Table 1-4 for typical minimum detectable concentrations.

Table 1-2C

Joseph M Farley Nuclear Plant
RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Liquid Effluents
Unit: Site
Starting: 1-Jan-2008 Ending: 31-Dec-2008

Nuclides Released	Unit	Continuous Mode			
		1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter
Fission & Activation Products					
Sr-90	Curies	3.90E-04	0.00E+00	0.00E+00	0.00E+00
Total For Period	**Curies**	**3.90E-04**	**0.00E+00**	**0.00E+00**	**0.00E+00**
Tritium					
H-3	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Dissolved And Entrained Gases					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Zeroes in this table indicates that no radioactivity was present at detectable levels. See Table 1-4 for typical minimum detectable concentrations.

Table 1-2C

Joseph M Farley Nuclear Plant
RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Liquid Effluents
Unit: Site
Starting: 1-Jan-2008 Ending: 31-Dec-2008

Nuclides Released	Unit	Batch Mode			
		1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter
Fission & Activation Products					
Be-7	Curies	0.00E+00	0.00E+00	2.78E-05	0.00E+00
Y-88	Curies	0.00E+00	0.00E+00	0.00E+00	4.24E-07
Y-94	Curies	0.00E+00	0.00E+00	0.00E+00	1.93E-06
As-76	Curies	0.00E+00	0.00E+00	0.00E+00	7.30E-07
Co-57	Curies	2.16E-06	0.00E+00	0.00E+00	6.78E-07
Co-58	Curies	1.79E-03	4.66E-04	4.49E-04	1.84E-03
Co-60	Curies	4.70E-03	4.52E-03	2.96E-03	2.21E-03
Cr-51	Curies	1.39E-05	0.00E+00	5.00E-05	1.07E-03
Fe-55	Curies	9.22E-04	2.56E-03	8.04E-04	1.03E-03
Fe-59	Curies	0.00E+00	0.00E+00	0.00E+00	9.06E-07
Mn-54	Curies	9.77E-05	6.54E-05	3.28E-05	3.88E-05
Na-24	Curies	2.39E-06	4.38E-06	4.19E-06	2.30E-06
Nb-95	Curies	2.30E-04	8.47E-05	5.47E-05	1.62E-04
Nb-97	Curies	0.00E+00	2.89E-06	2.87E-04	3.92E-05
Se-75	Curies	7.19E-07	0.00E+00	0.00E+00	0.00E+00
Sr-85	Curies	1.04E-06	0.00E+00	0.00E+00	0.00E+00
Sr-89	Curies	1.26E-05	8.15E-06	3.98E-05	0.00E+00
Sr-90	Curies	0.00E+00	0.00E+00	4.30E-06	0.00E+00
Sr-91	Curies	0.00E+00	3.45E-06	0.00E+00	0.00E+00
Sr-92	Curies	1.49E-06	0.00E+00	0.00E+00	0.00E+00
Y-90M	Curies	0.00E+00	0.00E+00	2.87E-07	0.00E+00
Y-91M	Curies	0.00E+00	0.00E+00	8.96E-07	1.67E-06
Zn-65	Curies	2.04E-03	2.72E-03	1.01E-03	1.04E-03
Zn-69	Curies	0.00E+00	3.91E-05	2.89E-06	0.00E+00
Zr-95	Curies	6.00E-05	2.01E-05	1.94E-05	7.60E-05

Zeroes in this table indicates that no radioactivity was present at detectable levels. See Table 1-4 for typical minimum detectable concentrations.

Table 1-2C

Joseph M Farley Nuclear Plant
RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Liquid Effluents
Unit: Site
Starting: 1-Jan-2008 Ending: 31-Dec-2008

		Batch Mode			
Nuclides Released	**Unit**	**1ST Quarter**	**2ND Quarter**	**3RD Quarter**	**4TH Quarter**
Cd-115	Curies	0.00E+00	0.00E+00	0.00E+00	1.04E-06
Ce-146	Curies	0.00E+00	1.76E-06	0.00E+00	0.00E+00
Cs-134	Curies	0.00E+00	1.62E-06	0.00E+00	0.00E+00
Cs-137	Curies	9.78E-05	2.24E-04	2.68E-04	1.67E-04
Cs-138	Curies	9.61E-06	1.88E-05	1.07E-05	0.00E+00
Eu-152	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Hf-181	Curies	0.00E+00	5.64E-07	0.00E+00	0.00E+00
La-142	Curies	0.00E+00	0.00E+00	0.00E+00	6.70E-07
Nb-95M	Curies	0.00E+00	0.00E+00	0.00E+00	7.59E-07
Nd-147	Curies	1.54E-06	0.00E+00	0.00E+00	0.00E+00
Rh-105	Curies	0.00E+00	0.00E+00	3.21E-06	5.36E-04
Sb-124	Curies	5.84E-06	6.47E-06	0.00E+00	4.07E-05
Sb-125	Curies	7.53E-04	1.22E-03	1.01E-03	6.30E-04
Sn-113	Curies	0.00E+00	2.86E-05	0.00E+00	2.41E-07
Tc-99M	Curies	0.00E+00	0.00E+00	3.28E-06	0.00E+00
Te-131	Curies	0.00E+00	0.00E+00	4.21E-07	0.00E+00
Te-134	Curies	0.00E+00	2.89E-05	0.00E+00	0.00E+00
Zn-69M	Curies	9.16E-07	0.00E+00	0.00E+00	0.00E+00
Ag-108M	Curies	0.00E+00	2.72E-05	4.80E-06	3.16E-06
Ag-110M	Curies	8.47E-06	5.11E-05	1.48E-05	8.87E-07
In-115M	Curies	0.00E+00	0.00E+00	0.00E+00	1.14E-06
Sn-117M	Curies	2.16E-06	0.00E+00	0.00E+00	0.00E+00
Te-125M	Curies	1.19E-02	0.00E+00	1.98E-04	0.00E+00
Total For Period	**Curies**	**2.27E-02**	**1.21E-02**	**7.27E-03**	**8.89E-03**

Zeroes in this table indicates that no radioactivity was present at detectable levels.
See Table 1-4 for typical minimum detectable concentrations.

Table 1-2C

Joseph M Farley Nuclear Plant
RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Liquid Effluents
Unit: Site
Starting: 1-Jan-2008 Ending: 31-Dec-2008

Nuclides Released	Unit	Batch Mode			
		1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter
Tritium					
H-3	Curies	1.59E+02	2.57E+02	5.70E+02	1.88E+02
Dissolved And Entrained Gases					
Ar-41	Curies	0.00E+00	1.03E-05	0.00E+00	1.90E-05
Kr-85	Curies	2.31E-04	0.00E+00	0.00E+00	0.00E+00
Kr-88	Curies	1.55E-06	0.00E+00	0.00E+00	1.21E-06
Kr-85M	Curies	0.00E+00	0.00E+00	3.05E-07	0.00E+00
Xe-133	Curies	3.97E-05	3.03E-05	6.61E-04	2.28E-03
Xe-135	Curies	0.00E+00	7.87E-07	0.00E+00	2.27E-06
Xe-137	Curies	0.00E+00	0.00E+00	0.00E+00	1.64E-03
Xe-138	Curies	0.00E+00	2.32E-06	0.00E+00	0.00E+00
Xe-131M	Curies	0.00E+00	3.34E-05	0.00E+00	0.00E+00
Xe-133M	Curies	0.00E+00	0.00E+00	0.00E+00	4.33E-06
Xe-135M	Curies	0.00E+00	0.00E+00	0.00E+00	1.95E-06
Total For Period	**Curies**	**2.72E-04**	**7.71E-05**	**6.62E-04**	**3.95E-03**

Zeroes in this table indicates that no radioactivity was present at detectable levels. See Table 1-4 for typical minimum detectable concentrations.

Table 1-3A

Joseph M Farley Nuclear Plant
RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Doses to a member of the public due to Liquid Releases
Unit: 1
Starting: 1-Jan-2008 Ending: 31-Dec-2008

Cumulative Doses Per Quarter

Organ	ODCM Lmt	Units	1ST Qtr	% ODCM	2ND Qtr	% ODCM	3RD Qtr	% ODCM	4TH Qtr	% ODCM
Bone	5.00E+00	mRem	2.00E-03	4.00E-02	2.76E-04	5.53E-03	2.38E-04	4.75E-03	2.59E-04	5.18E-03
GI-Lli	5.00E+00	mRem	9.16E-03	1.83E-01	1.46E-03	2.92E-02	2.83E-03	5.65E-02	2.27E-03	4.55E-02
Kidney	5.00E+00	mRem	8.88E-03	1.78E-01	9.82E-04	1.96E-02	2.68E-03	5.37E-02	1.55E-03	3.10E-02
Liver	5.00E+00	mRem	1.63E-03	3.27E-02	1.21E-03	2.42E-02	2.78E-03	5.55E-02	1.77E-03	3.54E-02
Lung	5.00E+00	mRem	1.34E-03	2.68E-02	1.60E-03	3.20E-02	2.79E-03	5.58E-02	2.03E-03	4.06E-02
Thyroid	5.00E+00	mRem	1.43E-03	2.87E-02	8.99E-04	1.80E-02	2.65E-03	5.30E-02	1.49E-03	2.97E-02
Total Body	5.00E+00	mRem	1.18E-03	2.36E-02	1.07E-03	2.14E-02	2.75E-03	5.50E-02	1.65E-03	3.29E-02
Total Body	1.50E+00	mRem	1.18E-03	7.86E-02	1.07E-03	7.13E-02	2.75E-03	1.83E-01	1.65E-03	1.10E-01

Cumulative Doses per Year

Organ	ODCM Lmt	Units	Year to Ending Date	% ODCM	Receptor	Limit
Bone	1.00E+01	mRem	2.77E-03	2.77E-02	Maximum Individual Liquid	Liquid Effluent Organ Annual
GI-Lli	1.00E+01	mRem	1.57E-02	1.57E-01	Maximum Individual Liquid	Liquid Effluent Organ Annual
Kidney	1.00E+01	mRem	1.41E-02	1.41E-01	Maximum Individual Liquid	Liquid Effluent Organ Annual
Liver	1.00E+01	mRem	7.39E-03	7.39E-02	Maximum Individual Liquid	Liquid Effluent Organ Annual
Lung	1.00E+01	mRem	7.77E-03	7.77E-02	Maximum Individual Liquid	Liquid Effluent Organ Annual
Thyroid	1.00E+01	mRem	6.47E-03	6.47E-02	Maximum Individual Liquid	Liquid Effluent Organ Annual
Total Body	1.00E+01	mRem	6.64E-03	6.64E-02	Maximum Individual Liquid	Liquid Effluent Organ Annual
Total Body	3.00E+00	mRem	6.64E-03	2.21E-01	Maximum Individual Liquid	Liquid Effluent TB Annual

Table 1Table 1-3B
Joseph M Farley Nuclear Plant
RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Doses to a member of the public due to Liquid Releases
Unit: 2
Starting: 1-Jan- 2008 Ending: 31-Dec-2008

Cumulative Doses Per Quarter

Organ	ODCM Lmt	Units	1ST Qtr	% ODCM	2ND Qtr	% ODCM	3RD Qtr	% ODCM	4TH Qtr	% ODCM
Bone	5.00E+00	mRem	3.03E-02	6.07E-01	7.07E-04	1.41E-02	4.79E-04	9.59E-03	3.20E-04	6.39E-03
GI-Lli	5.00E+00	mRem	1.09E-02	2.18E-01	3.01E-03	6.02E-02	4.22E-03	8.44E-02	1.47E-03	2.95E-02
Kidney	5.00E+00	mRem	9.06E-03	1.81E-01	1.74E-03	3.48E-02	3.27E-03	6.54E-02	7.96E-04	1.59E-02
Liver	5.00E+00	mRem	1.90E-03	3.80E-02	2.29E-03	4.59E-02	3.37E-03	6.75E-02	1.06E-03	2.12E-02
Lung	5.00E+00	mRem	3.47E-03	6.93E-02	6.31E-03	1.26E-01	7.03E-03	1.41E-01	3.57E-03	7.13E-02
Thyroid	5.00E+00	mRem	1.30E-03	2.60E-02	1.55E-03	3.10E-02	2.88E-03	5.76E-02	6.82E-04	1.36E-02
Total Body	5.00E+00	mRem	8.11E-03	1.62E-01	1.94E-03	3.88E-02	3.19E-03	6.38E-02	9.23E-04	1.85E-02
Total Body	1.50E+00	mRem	8.11E-03	5.41E-01	1.94E-03	1.29E-01	3.19E-03	2.13E-01	9.23E-04	6.15E-02

Cumulative Doses per Year

Organ	ODCM Lmt	Units	Year to Ending Date	% ODCM	Receptor	Limit
Bone	1.00E+01	mRem	2.77E-03	2.77E-02	Maximum Individual Liquid	Liquid Effluent Organ Annual
GI-Lli	1.00E+01	mRem	1.57E-02	1.57E-01	Maximum Individual Liquid	Liquid Effluent Organ Annual
Kidney	1.00E+01	mRem	1.41E-02	1.41E-01	Maximum Individual Liquid	Liquid Effluent Organ Annual
Liver	1.00E+01	mRem	7.39E-03	7.39E-02	Maximum Individual Liquid	Liquid Effluent Organ Annual
Lung	1.00E+01	mRem	7.77E-03	7.77E-02	Maximum Individual Liquid	Liquid Effluent Organ Annual
Thyroid	1.00E+01	mRem	6.47E-03	6.47E-02	Maximum Individual Liquid	Liquid Effluent Organ Annual
Total Body	1.00E+01	mRem	6.64E-03	6.64E-02	Maximum Individual Liquid	Liquid Effluent Organ Annual
Total Body	3.00E+00	mRem	6.64E-03	2.21E-01	Maximum Individual Liquid	Liquid Effluent TB Annual

TABLE 1-4
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
MINIMUM DETECTABLE CONCENTRATION - LIQUID SAMPLE ANALYSES

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

Nuclide	MDC(uCi/ML)
MN-54	4.01E-08
CO-58	3.12E-08
FE-59	9.04E-08
CO-60	1.76E-08
ZN-65	1.19E-07
MO-99	2.98E-07
I-131	3.05E-08
CS-134	4.01E-08
CS-137	3.84E-08
CE-141	4.21E-08
CE-144	1.51E-07

Table 1-5A

Joseph M Farley Nuclear Plant
RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Liquid Effluents - Batch Release Summary
Unit: 1
Starting: 1-Jan-2008 Ending: 31-Dec-2008

Liquid Releases	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Year Totals
1. Number of batch releases	:	46	45	65	66	222
2. Total time period for Batch releases	(Minutes):	5.14E+03	5.05E+03	7.39E+03	7.24E+03	2.48E+04
3. Maximum time period for a batch release	(Minutes):	1.23E+02	1.40E+02	1.35E+02	1.49E+02	1.49E+02
4. Average time period for a batch release	(Minutes):	1.12E+02	1.12E+02	1.14E+02	1.10E+02	1.12E+02
5. Minimum time period for a batch release	(Minutes):	9.00E+01	9.00E+01	9.30E+01	9.20E+01	9.00E+01
6. Average stream flow during periods of release of liquid Effluent into a flowing stream*	(CFS) :	7.38E+03	3.71E+03	2.88E+03	6.03E+03	5.00E+03

* Average River Flow Rate, taken at Walter F. George Lock and Dam, located 30.7 miles above Farley Nuclear Plant.

Table 1-5B

Joseph M Farley Nuclear Plant
RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Liquid Effluents - Batch Release Summary
Unit: 2
Starting: 1-Jan-2008 Ending: 31-Dec-2008

Liquid Releases	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Year Totals
1. Number of batch releases	:	69	90	122	99	380
2. Total time period for Batch releases	(Minutes):	6.71E+03	9.39E+03	1.22E+04	1.03E+04	3.86E+04
3. Maximum time period for a batch release	(Minutes):	1.25E+02	1.46E+02	1.23E+02	1.60E+02	1.60E+02
4. Average time period for a batch release	(Minutes):	9.73E+01	1.04E+02	1.00E+02	1.04E+02	1.02E+02
5. Minimum time period for a batch release	(Minutes):	6.00E+01	8.70E+01	8.50E+01	8.10E+01	6.00E+01
6. Average stream flow during periods of release of liquid Effluent into a flowing stream*	(CFS) :	7.38E+03	3.71E+03	2.88E+03	6.03E+03	5.00E+03

* Average River Flow Rate, taken at Walter F. George Lock and Dam, located 30.7 miles above Farley Nuclear Plant.

Table 1-6A

Joseph M Farley Nuclear Plant
RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Liquid Effluents - Abnormal Release Summary
Unit: 1
Starting: 1-Jan-2008 Ending: 31-Dec-2008

Liquid Releases	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Year Totals
1. Number of Releases	:	0	0	0	0	0
2. Total Time For All Releases	(Minutes):	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3. Maximum Time For A Release	(Minutes):	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4. Average Time For A Release	(Minutes):	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
5. Minimum Time For A Release	(Minutes):	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
6. Total activity for all releases	(Curies) :	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Table 1-6B

Joseph M Farley Nuclear Plant
RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Liquid Effluents - Abnormal Release Summary
Unit: 2
Starting: 1-Jan-2008 Ending: 31-Dec-2008

Liquid Releases	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Year Totals
1. Number of Releases	:	0	0	0	0	0
2. Total Time For All Releases	(Minutes):	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3. Maximum Time For A Release	(Minutes):	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4. Average Time For A Release	(Minutes):	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
5. Minimum Time For A Release	(Minutes):	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
6. Total activity for all releases	(Curies) :	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

2.0 GASEOUS EFFLUENTS

This section contains applicable ODCM limits for gaseous effluents as well as the quantities of radioactive gaseous effluents released during 2008. These quantities are summarized on a quarterly basis and include any unplanned releases. Tabulations are provided of the offsite air doses calculated in accordance with ODCM 3.4.2 to show conformance with the limits of ODCM 3.1.3, and the offsite organ doses to a member of the public calculated in accordance with ODCM 3.4.3 to show conformance with ODCM 3.1.4.

2.1 Regulatory Requirements

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

2.1.1 Dose Rate Limits

The dose rates 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 mrem/yr. to the whole body and less than or equal to 3000 mrem/yr. to the skin, and

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

2.1.2 Air Doses Due to Noble Gases in Gaseous Releases

Technical Specifications 5.5.4.e and 5.5.4.h state that the air dose due to noble gases released in gaseous effluents, from each reactor unit, to areas at and beyond the SITE BOUNDARY (see ODCM Figure 10-1) shall be limited to the following:

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

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

2.1.3 Doses to a Member of the Public

Technical Specifications 5.5.4.e and 5.5.4.i state that the dose to a MEMBER OF THE PUBLIC from I-131, I-133, tritium, and all radionuclides in particulate form with half-lives greater than 8 days in gaseous effluents released, from each reactor unit, to areas at and beyond the SITE BOUNDARY (see ODCM Figure 10-1) shall be limited to the following:

a. During any calendar quarter: Less than or equal to 7.5 mrem to any organ, and

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

2.2 Measurements and Approximation of Total Radioactivity

The following noble gases are considered in evaluating gaseous effluents:

KR-87	XE-133
KR-88	XE-135
XE-133M	XE-138

The following radioiodines and radioactive materials in particulate form are specifically considered in evaluating gaseous effluents:

MN-54	MO-99
FE-59	I-131
CO-58	CS-134
CO-60	CS-137
ZN-65	CE-141
SR-89	CE-144
SR-90	H-3

2.2.1 Sample collection and Analysis

Periodic grab samples from plant effluent streams are analyzed by a computerized pulse height analyzer system utilizing high resolution germanium detectors. Samples are obtained and analyzed in accordance with ODCM Table 3-3. Isotopic values thus obtained are used for release rate calculations as specified in ODCM 3.4.2 and ODCM 3.4.3. Only those nuclides which are detected are used in calculations. For radioiodines and particulates, in addition to the nuclides listed above other nuclides with half-lives greater than 8 days which are identified are also considered.

Continuous Releases: Continuous sampling is performed on the continuous release points (i.e. the Plant Vent Stack, Containment Purge when in continuous mode, and the Turbine Building Vent). Particulate material is collected by filtration. Periodically these filters are removed and analyzed on the pulse height analyzer to identify and quantify radioactive materials collected on the filters. Particulate filters are then analyzed for gross alpha and strontium as required. All gross alpha, Sr-89 and SR-90 samples are sent offsite to the Georgia Power Environmental Laboratory for analysis.

Batch Releases: The processing of batch type releases (from Containment when in batch mode, or Waste Gas Decay Tanks) is analogous to continuous releases, except that the release is not commenced until samples have been obtained and analyzed. Containment Purge batch releases were commenced at FNP in 2006 in order to take advantage of additional decay time for short lived radionuclides.

Typically achieved minimum detectable concentrations for gaseous effluent sample analyses are reported in Table 2-6.

2.2.2 Total Quantities of Radioactivity, Dose Rates, and Cumulative Doses

The methods for determining release quantities of radioactivity, dose rates, and cumulative doses follow:

2.2.2.1 Fission and Activation Gases

The released radioactivity is determined using sample analyses results collected as described in section 2.2.1 and the average release flow rates over the period represented by the collected sample.

Dose rates due to noble gases, radioiodines, tritium, and particulates are calculated (with computer assistance). The calculated dose rates are compared to the dose rate limits specified in ODCM 3.1.2 for noble gases, 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 ODCM 3.1.3. The current percent of the ODCM limits are shown on the printout for each release period. Air dose calculation methodology is presented in the ODCM.

2.2.2.2 Radioiodine, Tritium, and Particulate Releases

Released quantities of radioiodines are determined using the weekly samples and release flow rates for the applicable release points. Radioiodine concentrations are determined by gamma spectroscopy.

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

After each quarter, the particulate filters from each applicable vent (plant vent stack and containment purge) are combined, fused, and a strontium separation is performed. Since sample flows and vent flows are almost constant over each quarterly period the filters from each vent can be dissolved together. Decay corrections are performed back to the middle of the quarterly collection period. If Sr-89 or Sr-90 is not detected, MDC's are calculated. Strontium concentrations are input into the composite file of the computer and used for release dose rate and individual dose calculations.

Tritium samples are obtained monthly from the Plant Vent Stack, the Containment Purge when in batch mode, and the Turbine Building Vent (and weekly for Containment Purge when in continuous mode) by passing the sample stream through a cold trap or by using the bubble method. The grams of water vapor/cubic meter is measured upstream of the cold trap in order to alleviate the difficulties in determining water vapor collection efficiencies. The tritium samples are analyzed onsite and the results furnished in uCi/ml of water. The tritium concentration in water is converted to the tritium concentration in air and this value is input into the composite file of the computer and 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 dose rates from each release point is compared to the dose rate limits specified in ODCM 3.1.2, allocated for each release point as described in ODCM 3.3.2.

Doses to a Member of the Public (individual doses) due to radioiodine, tritium and particulates are calculated for the controlling receptor, which is described in the ODCM. Individual doses are calculated for each release period, and cumulative totals are kept for each unit, for the current calendar quarter and year. Cumulative individual doses are compared to the dose limits specified in ODCM 3.1.4. The current percent of ODCM limits are shown on the printout for each release period.

2.2.2.3 Gross Alpha Release

The gross alpha release is computed each month by counting the particulate filters, for each week for gross alpha activity in a proportional counter. The highest concentration calculated for any of these weeks is used for the monthly value. This value is input into the composite file of the computer and used for release calculations.

2.2.3 Total Error Estimation

The maximum errors associated with monitor readings, sample flow, vent flow, sample collection, monitor calibration and laboratory procedure are collectively estimated to be:

Fission and Activation Gases	Iodine	Particulates	Tritium
75%	60%	50%	45%

The average error associated with counting is estimated to be:

Fission and Activation Gases	Iodine	Particulates	Tritium
19%	28%	20%	8%

2.3 Gaseous Effluent Release Data

Regulatory Guide 1.21 Tables 1A, 1B and 1C are found in this report as Tables 2-1A, 2-1B, 2-1C, 2-2A, 2-2B, 2-2C, 2-3A, 2-3B, and 2-3C. Data are presented on a quarterly basis as required by Regulatory Guide 1.21.

To complete Tables 2-1A and 2-1B, the total release for each of the four categories (fission and activation gases, radioiodines, particulates and tritium) was divided by the number of seconds in the quarter to obtain a release rate in uCi/second for each category. However, the percent of the ODCM limits are not applicable because FNP has no curie limit for gaseous releases. Applicable limits are expressed in terms of dose. Noble gases
are limited as specified in ODCM 3.1.2. The other three categories (tritium, radioiodines, and particulates) are limited as a group as specified in ODCM 3.1.2.

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

Gross alpha radioactivity is reported in Tables 2-1A, 2-1B and 2-1C as curies released in each quarter.

Limits for cumulative beta and gamma air doses due to noble gases are presented in Tables 2-4A and 2-4B along with the percent of ODCM limits.

Limits for cumulative doses to an individual due to radioiodines, tritium and particulates are specified in ODCM 3.1.4. Cumulative individual doses are presented in Tables 2-5A and 2-5B along with percent of ODCM limits.

2.4 Radiological Impact Due to Gaseous Releases

The air doses due to noble gases and doses to a Member of the Public due to radioiodines, tritium and particulates in gaseous effluents for Units 1 and 2 are provided in the following tables in order to show conformance with the limits of ODCM 3.1.3 and ODCM 3.1.4:

Unit 1 2008 Air Doses Due to Noble Gases in Gaseous Releases: Table 2-4A

Unit 2 2008 Air Doses Due to Noble Gases in Gaseous Releases: Table 2-4B

Unit 1 2008 Doses to a Member of the Public Due to Radioiodines, Tritium, and Particulates in Gaseous Releases: Table 2-5A

Unit 2 2008 Doses to a Member of the Public Due to Radioiodines, Tritium, and Particulates in Gaseous Releases: Table 2-5B

2.5 Gaseous Effluents - Batch Releases

Batch release information for Units 1 and 2 is summarized in the following tables:

Unit 1 2008 Gaseous Effluents - Batch Release Summary: Table 2-7A

Unit 2 2008 Gaseous Effluents - Batch Release Summary: Table 2-7B

2.6 Gaseous Effluents - Abnormal Releases

There were no abnormal releases on Unit 1 or Unit 2 during 2008.

Abnormal release information for Units 1 and 2 is summarized in the following tables:

Unit 1 2008 Gaseous Effluents - Abnormal Release Summary: Table 2-8A
Unit 2 2008 Gaseous Effluents - Abnormal Release Summary: Table 2-8B

Table 2-1A

Joseph M Farley Nuclear Plant
RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Gaseous Effluents - Summation Of All Releases
Unit: 1
Starting: 1-Jan-2008 Ending: 31-Dec-2008

Type of Effluent	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter
A. Fission And Activation Gases					
1. Total Release	Curies	6.09E+00	6.55E+00	7.94E+00	6.61E+00
2. Average Release rate for period	uCi/sec	7.72E-01	8.31E-01	1.01E+00	8.39E-01
3. Percent of Applicable Limit	%	*	*	*	*
B. Radioiodines					
1. Total Iodine-131	Curies	5.83E-06	8.72E-06	0.00E+00	9.43E-07
2. Average Release rate for period	uCi/sec	7.39E-07	1.11E-06	0.00E+00	1.20E-07
3. Percent of Applicable Limit	%	*	*	*	*
C. Particulates					
1. Particulates (Half-Lives > 8 Days)	Curies	0.00E+00	2.10E-07	9.89E-07	7.12E-08
2. Average Release rate for period	uCi/sec	0.00E+00	2.67E-08	1.26E-07	9.034E-09
3. Percent of Applicable Limit	%	*	*	*	*
D. Tritium					
1. Total Release	Curies	2.18E+00	3.17E+00	3.04E+00	2.26E+00
2. Average Release rate for period	uCi/sec	2.77E-01	4.02E-01	3.86E-01	2.87E-01
3. Percent of Applicable Limit	%	*	*	*	*
E. Gross Alpha					
1. Total Release	Curies	0.00E+00	1.28E-05	0.00E+00	0.00E+00
2. Average Release rate for period	uCi/sec	0.00E+00	1.62E-06	0.00E+00	0.00E+00

* Applicable limits are expressed in terms of dose. See Tables 2-4A, 2-4B, 2-5A, 2-5B of this report.

Table 2-1B
Joseph M Farley Nuclear Plant
RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Gaseous Effluents - Summation Of All Releases
Unit: 2
Starting: 1-Jan- 2008 Ending: 31-Dec-2008

Type of Effluent	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter
A. Fission And Activation Gases					
1. Total Release	Curies	2.54E-01	2.72E-01	8.55E-01	4.52E+00
2. Average Release rate for period	uCi/sec	3.23E-02	3.44E-02	1.08E-01	5.73E-01
3. Percent of Applicable Limit	%	*	*	*	*
B. Radioiodines					
1. Total Iodine-131	Curies	0.00E+00	0.00E+00	0.00E+00	3.10E-08
2. Average Release rate for period	uCi/sec	0.00E+00	0.00E+00	0.00E+00	3.93E-09
3. Percent of Applicable Limit	%	*	*	*	*
C. Particulates					
1. Particulates (Half-Lives > 8 Days)	Curies	3.33E-08	7.94E-08	7.41E-08	2.08E-07
2. Average Release rate for period	uCi/sec	4.22E-09	1.01E-08	9.40E-09	2.639E-08
3. Percent of Applicable Limit	%	*	*	*	*
D. Tritium					
1. Total Release	Curies	3.06E+00	1.66E+01	3.00E+00	6.10E+00
2. Average Release rate for period	uCi/sec	3.88E-01	2.10E+00	3.81E-01	7.73E-01
3. Percent of Applicable Limit	%	*	*	*	*
E. Gross Alpha					
1. Total Release	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2. Average Release rate for period	uCi/sec	0.00E+00	0.00E+00	0.00E+00	0.00E+00

*Applicable limits are expressed in terms of dose. See Tables 2-4A, 2-4B, 2-5A, 2-5B of this report.

Table 2-1C

Joseph M Farley Nuclear Plant
RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Gaseous Effluents - Summation Of All Releases
Unit: Site

Starting: 1-Jan-2008 Ending: 31-Dec-2008

Type of Effluent	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter
A. Fission And Activation Gases					
1. Total Release	Curies	6.34E+00	6.82E+00	8.80E+00	1.11E+01
2. Average Release rate for period	uCi/sec	8.05E-01	8.65E-01	1.12E+00	1.41E+00
3. Percent of Applicable Limit	%	*	*	*	*
B. Radioiodines					
1. Total Iodine-131	Curies	5.83E-06	8.72E-06	0.00E+00	9.74E-07
2. Average Release rate for period	uCi/sec	7.39E-07	1.11E-06	0.00E+00	1.24E-07
3. Percent of Applicable Limit	%	*	*	*	*
C. Particulates					
1. Particulates (Half-Lives > 8 Days)	Curies	3.33E-08	2.90E-07	1.06E-06	2.79E-07
2. Average Release rate for period	uCi/sec	4.22E-09	3.67E-08	1.35E-07	3.543E-08
3. Percent of Applicable Limit	%	*	*	*	*
D. Tritium					
1. Total Release	Curies	5.24E+00	1.97E+01	6.04E+00	8.36E+00
2. Average Release rate for period	uCi/sec	6.65E-01	2.50E+00	7.66E-01	1.06E+00
3. Percent of Applicable Limit	%	*	*	*	*
E. Gross Alpha					
1. Total Release	Curies	0.00E+00	1.28E-05	0.00E+00	0.00E+00
2. Average Release rate for period	uCi/sec	0.00E+00	1.62E-06	0.00E+00	0.00E+00

* Applicable limits are expressed in terms of dose. See Tables 2-4A, 2-4B, 2-5A, 2-5B of this report.

Table 2-2A

Joseph M Farley Nuclear Plant
RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Gaseous Effluents - Mixed Mode Level Releases
Unit: 1
Starting: 1-Jan- 2008 Ending: 31-Dec-2008

		Continuous Mode			
Nuclides Released	**Unit**	**1ST Quarter**	**2ND Quarter**	**3RD Quarter**	**4TH Quarter**
Fission Gases					
Ar-41	Curies	6.09E+00	6.55E+00	7.91E+00	6.61E+00
Total For Period	**Curies**	**6.09E+00**	**6.55E+00**	**7.91E+00**	**6.61E+00**
Iodines					
I-131	Curies	5.83E-06	8.72E-06	0.00E+00	9.43E-07
I-133	Curies	1.04E-04	1.85E-04	0.00E+00	9.00E-06
Total For Period	**Curies**	**1.10E-04**	**1.93E-04**	**0.00E+00**	**9.94E-06**
Particulates					
Sr-89	Curies	0.00E+00	2.10E-07	9.89E-07	7.12E-08
Total For Period	**Curies**	**0.00E+00**	**2.10E-07**	**9.89E-07**	**7.12E-08**
Tritium					
H-3	Curies	2.18E+00	3.17E+00	3.04E+00	2.26E+00
Gross Alpha					
G-Alpha	Curies	0.00E+00	1.28E-05	0.00E+00	0.00E+00
Total For Period	**Curies**	**0.00E+00**	**1.28E-05**	**0.00E+00**	**0.00E+00**

If Not Detected, Nuclide is Not Reported. Zeroes in this table indicates that no radioactivity was present at detectable levels. See Table 2-6 for typical minimum detectable concentrations.

Table 2-2A

Joseph M Farley Nuclear Plant
RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Gaseous Effluents - Mixed Mode Level Releases
Unit: 1
Starting: 1-Jan- 2008 Ending: 31-Dec-2008

		Batch Mode			
Nuclides Released	**Unit**	**1ST Quarter**	**2ND Quarter**	**3RD Quarter**	**4TH Quarter**
Fission Gases					
Xe-133	Curies	0.00E+00	0.00E+00	2.68E-02	0.00E+00
Total For Period	**Curies**	**0.00E+00**	**0.00E+00**	**2.68E-02**	**0.00E+00**
Iodines					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Particulates					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Tritium					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Gross Alpha					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00

If Not Detected, Nuclide is Not Reported. Zeroes in this table indicates that no radioactivity was present at detectable levels. See Table 2-6 for typical minimum detectable concentrations.

Table 2-2B

Joseph M Farley Nuclear Plant
RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Gaseous Effluents - Mixed Mode Level Releases
Unit: 2
Starting: 1-Jan- 2008 Ending: 31-Dec-2008

		Continuous Mode			
Nuclides Released	**Unit**	**1ST Quarter**	**2ND Quarter**	**3RD Quarter**	**4TH Quarter**
Fission Gases					
Ar-41	Curies	0.00E+00	0.00E+00	5.32E-01	4.37E+00
Total For Period	**Curies**	**0.00E+00**	**0.00E+00**	**5.32E-01**	**4.37E+00**
Iodines					
I-131	Curies	0.00E+00	0.00E+00	0.00E+00	2.68E-08
Total For Period	**Curies**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**2.68E-08**
Particulates					
Co-60	Curies	0.00E+00	0.00E+00	0.00E+00	2.47E-08
Sr-89	Curies	0.00E+00	7.94E-08	2.69E-08	1.83E-07
Sr-90	Curies	3.33E-08	0.00E+00	4.72E-08	0.00E+00
Total For Period	**Curies**	**3.33E-08**	**7.94E-08**	**7.41E-08**	**2.08E-07**
Tritium					
H-3	Curies	3.03E+00	1.65E+01	2.96E+00	6.10E+00
Gross Alpha					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00

If Not Detected, Nuclide is Not Reported. Zeroes in this table indicates that no radioactivity was present at detectable levels.
See Table 2-6 for typical minimum detectable concentrations.

Table 2-2B

Joseph M Farley Nuclear Plant
RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Gaseous Effluents - Mixed Mode Level Releases
Unit: 2
Starting: 1-Jan- 2008 Ending: 31-Dec-2008

		Batch Mode			
Nuclides Released	**Unit**	**1ST Quarter**	**2ND Quarter**	**3RD Quarter**	**4TH Quarter**
Fission Gases					
Ar-41	Curies	2.54E-01	2.71E-01	3.22E-01	1.48E-01
Xe-133M	Curies	0.00E+00	0.00E+00	7.59E-05	0.00E+00
Xe-133	Curies	2.20E-04	6.12E-04	9.21E-04	7.07E-03
Total For Period	**Curies**	**2.54E-01**	**2.72E-01**	**3.23E-01**	**1.55E-01**
Iodines					
I-131	Curies	0.00E+00	0.00E+00	0.00E+00	4.25E-09
Total For Period	**Curies**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**4.25E-09**
Particulates					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Tritium					
H-3	Curies	3.58E-02	6.01E-02	3.61E-02	1.66E-03
Gross Alpha					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00

If Not Detected, Nuclide is Not Reported. Zeroes in this table indicates that no radioactivity was present at detectable levels.
See Table 2-6 for typical minimum detectable concentrations.

Table 2-2C

Joseph M Farley Nuclear Plant
RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Gaseous Effluents - Mixed Mode Level Releases
Unit: Site
Starting: 1-Jan- 2008 Ending: 31-Dec-2008

		Continuous Mode			
Nuclides Released	**Unit**	**1ST Quarter**	**2ND Quarter**	**3RD Quarter**	**4TH Quarter**
Fission Gases					
Ar-41	Curies	6.09E+00	6.55E+00	8.45E+00	1.10E+01
Total For Period	**Curies**	**6.09E+00**	**6.55E+00**	**8.45E+00**	**1.10E+01**
Iodines					
I-131	Curies	5.83E-06	8.72E-06	0.00E+00	9.70E-07
I-133	Curies	1.04E-04	1.85E-04	0.00E+00	9.00E-06
Total For Period	**Curies**	**1.10E-04**	**1.93E-04**	**0.00E+00**	**9.97E-06**
Particulates					
Co-60	Curies	0.00E+00	0.00E+00	0.00E+00	2.47E-08
Sr-89	Curies	0.00E+00	2.90E-07	1.02E-06	2.55E-07
Sr-90	Curies	3.33E-08	0.00E+00	4.72E-08	0.00E+00
Total For Period	**Curies**	**3.33E-08**	**2.90E-07**	**1.06E-06**	**2.79E-07**
Tritium					
H-3	Curies	5.21E+00	1.97E+01	6.00E+00	8.36E+00
Gross Alpha					
G-Alpha	Curies	0.00E+00	1.28E-05	0.00E+00	0.00E+00
Total For Period	**Curies**	**0.00E+00**	**1.28E-05**	**0.00E+00**	**0.00E+00**

If Not Detected, Nuclide is Not Reported. Zeroes in this table indicates that no radioactivity was present at detectable levels.
See Table 2-6 for typical minimum detectable concentrations.

Table 2-2C

Joseph M Farley Nuclear Plant
RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Gaseous Effluents - Mixed Mode Level Releases
Unit: Site
Starting: 1-Jan- 2008 Ending: 31-Dec-2008

		Batch Mode			
Nuclides Released	**Unit**	**1ST Quarter**	**2ND Quarter**	**3RD Quarter**	**4TH Quarter**
Fission Gases					
Ar-41	Curies	2.54E-01	2.71E-01	3.22E-01	1.48E-01
Xe-133M	Curies	0.00E+00	0.00E+00	7.59E-05	0.00E+00
Xe-133	Curies	2.20E-04	6.12E-04	2.77E-02	7.07E-03
Total For Period	**Curies**	**2.54E-01**	**2.72E-01**	**3.50E-01**	**1.55E-01**
Iodines					
I-131	Curies	0.00E+00	0.00E+00	0.00E+00	4.25E-09
Total For Period	**Curies**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**4.25E-09**
Particulates					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Tritium					
H-3	Curies	3.58E-02	6.01E-02	3.61E-02	1.66E-03
Gross Alpha					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00

If Not Detected, Nuclide is Not Reported. Zeroes in this table indicates that no radioactivity was present at detectable levels.
See Table 2-6 for typical minimum detectable concentrations.

Table 2-3A
Joseph M Farley Nuclear Plant
RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Gaseous Effluents - Ground Level Releases
Unit: 1
Starting: 1-Jan- 2008 Ending: 31-Dec-2008

		Continuous Mode			
Nuclides Released	**Units**	**1ST Quarter**	**2ND Quarter**	**3RD Quarter**	**4TH Quarter**
Fission Gases					
Ar-41	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Kr-90	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xe-127	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total For Period	**Curies**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**
Iodines					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Particulates					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Tritium					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Gross Alpha					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00

If Not Detected, Nuclide is Not Reported. Zeroes in this table indicates that no radioactivity was present at detectable levels. See Table 2-6 for typical minimum detectable concentrations.

Table 2-3A
Joseph M Farley Nuclear Plant
RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Gaseous Effluents - Ground Level Releases
Unit: 1
Starting: 1-Jan- 2008 Ending: 31-Dec-2008

		Batch Mode			
Nuclides Released	**Units**	**1ST Quarter**	**2ND Quarter**	**3RD Quarter**	**4TH Quarter**
Fission Gases					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Iodines					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Particulates					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Tritium					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Gross Alpha					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00

If Not Detected, Nuclide is Not Reported. Zeroes in this table indicates that no radioactivity was present at detectable levels.
See Table 2-6 for typical minimum detectable concentrations.

Table 2-3B
Joseph M Farley Nuclear Plant
RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Gaseous Effluents - Ground Level Releases
Unit: 2
Starting: 1-Jan- 2008 Ending: 31-Dec-2008

		Continuous Mode			
Nuclides Released	**Units**	**1ST Quarter**	**2ND Quarter**	**3RD Quarter**	**4TH Quarter**
Fission Gases					
Ar-41	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Kr-90	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total For Period	**Curies**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**
Iodines					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Particulates					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Tritium					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Gross Alpha					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00

If Not Detected, Nuclide is Not Reported. Zeroes in this table indicates that no radioactivity was present at detectable levels.
See Table 2-6 for typical minimum detectable concentrations.

Table 2-3B
Joseph M Farley Nuclear Plant
RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Gaseous Effluents - Ground Level Releases
Unit: 2
Starting: 1-Jan- 2008 Ending: 31-Dec-2008

		Batch Mode			
Nuclides Released	**Units**	**1ST Quarter**	**2ND Quarter**	**3RD Quarter**	**4TH Quarter**
Fission Gases					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Iodines					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Particulates					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Tritium					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Gross Alpha					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00

If Not Detected, Nuclide is Not Reported. Zeroes in this table indicates that no radioactivity was present at detectable levels.
See Table 2-6 for typical minimum detectable concentrations.

Table 2-3C
Joseph M Farley Nuclear Plant
RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Gaseous Effluents - Ground Level Releases
Unit: Site
Starting: 1-Jan- 2008 Ending: 31-Dec-2008

		Continuous Mode			
Nuclides Released	**Units**	**1ST Quarter**	**2ND Quarter**	**3RD Quarter**	**4TH Quarter**
Fission Gases					
Ar-41	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Kr-90	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xe-127	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total For Period	**Curies**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**
Iodines					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Particulates					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Tritium					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Gross Alpha					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00

If Not Detected, Nuclide is Not Reported. Zeroes in this table indicates that no radioactivity was present at detectable levels. See Table 2-6 for typical minimum detectable concentrations.

Table 2-3C

Joseph M Farley Nuclear Plant
RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Gaseous Effluents - Ground Level Releases
Unit: Site
Starting: 1-Jan-2008 Ending: 31-Dec-2008

		Batch Mode			
Nuclides Released	**Unit**	**1ST Quarter**	**2ND Quarter**	**3RD Quarter**	**4TH Quarter**
Fission Gases					
No Nuclides Found		0.00E+00	0.00E+00	0.00E+00	0.00E+00
Iodines					
No Nuclides Found		0.00E+00	0.00E+00	0.00E+00	0.00E+00
Particulates					
No Nuclides Found		0.00E+00	0.00E+00	0.00E+00	0.00E+00
Tritium					
No Nuclides Found		0.00E+00	0.00E+00	0.00E+00	0.00E+00
Gross Alpha					
No Nuclides Found		0.00E+00	0.00E+00	0.00E+00	0.00E+00

If Not Detected, Nuclide is Not Reported. Zeroes in this table indicates that no radioactivity was present at detectable levels.
See Table 2-6 for typical minimum detectable concentrations.

Table 2-4A
Joseph M Farley Nuclear Plant
RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Air Doses Due to Gaseous Releases
Unit: 1
Starting: 1-Jan- 2008 Ending: 31-Dec-2008

Cumulative Doses Per Quarter

Type of Radiation	ODCM Lmt	Units	1ST Qtr	% ODCM	2ND Qtr	% ODCM	3RD Qtr	% ODCM	4TH Qtr	% ODCM
Gamma Air	5.00E+00	mRad	1.94E-03	3.88E-02	2.09E-03	4.17E-02	2.52E-03	5.04E-02	2.11E-03	4.21E-02
Beta Air	1.00E+01	mRad	6.84E-04	6.84E-03	7.36E-04	7.36E-03	8.90E-04	8.90E-03	7.43E-04	7.43E-03

Cumulative Doses Per Year

Type of Radiation	ODCM Lmt	Units	Year to End Date	% ODCM	Receptor	Limit
Gamma Air	1.00E+01	mRad	8.65E-03	8.65E-02	Site Boundary SSE Mixed Mode R	Air Dose Gamma Annual
Beta Air	2.00E+01	mRad	3.05E-03	1.53E-02	Site Boundary SSE Mixed Mode R	Air Dose Beta Annual

Table 2-4B
Joseph M Farley Nuclear Plant
RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Air Doses Due to Gaseous Releases
Unit: 2
Starting: 1-Jan- 2008 Ending: 31-Dec-2008

Cumulative Doses Per Quarter

Type of Radiation	ODCM Lmt	Units	1ST Qtr	% ODCM	2ND Qtr	% ODCM	3RD Qtr	% ODCM	4TH Qtr	% ODCM
Gamma Air	5.00E+00	mRad	8.09E-05	1.62E-03	8.63E-05	1.73E-03	2.72E-04	5.44E-03	1.44E-03	2.88E-02
Beta Air	1.00E+01	mRad	2.86E-05	2.86E-04	3.05E-05	3.05E-04	9.59E-05	9.59E-04	5.07E-04	5.07E-03

Cumulative Doses Per Year

Type of Radiation	ODCM Lmt	Units	Year to End Date	% ODCM	Receptor	Limit
Gamma Air	1.00E+01	mRad	1.88E-03	1.88E-02	Site Boundary SSE Mixed Mode R	Air Dose Gamma Annual
Beta Air	2.00E+01	mRad	6.62E-04	3.31E-03	Site Boundary SSE Mixed Mode R	Air Dose Beta Annual

Table 2-5A
Joseph M Farley Nuclear Plant
RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Doses To A Member Of The Public Due To Radioiodines, Tritium, and Particulates in Gaseous Releases
Unit: 1
Starting: 1-Jan- 2008 Ending: 31-Dec-2008

Cumulative Doses Per Quarter

Organ	ODCM Lmt	Units	1ST Qtr	% ODCM	2ND Qtr	% ODCM	3RD Qtr	% ODCM	4TH Qtr	% ODCM
Bone	7.50E+00	mRem	6.02E-07	8.03E-06	3.53E-06	4.70E-05	1.04E-05	1.38E-04	9.45E-07	1.26E-05
GI-Lli	7.50E+00	mRem	2.31E-04	3.09E-03	3.49E-04	4.66E-03	2.86E-04	3.81E-03	2.46E-04	3.27E-03
Kidney	7.50E+00	mRem	2.32E-04	3.10E-03	3.50E-04	4.67E-03	2.86E-04	3.81E-03	2.46E-04	3.28E-03
Liver	7.50E+00	mRem	2.32E-04	3.09E-03	3.50E-04	4.67E-03	2.86E-04	3.81E-03	2.46E-04	3.28E-03
Lung	7.50E+00	mRem	2.31E-04	3.09E-03	3.49E-04	4.65E-03	2.86E-04	3.81E-03	2.46E-04	3.27E-03
Thyroid	7.50E+00	mRem	3.75E-04	5.00E-03	5.75E-04	7.66E-03	2.86E-04	3.81E-03	2.66E-04	3.55E-03
Total Body	7.50E+00	mRem	2.32E-04	3.09E-03	3.50E-04	4.66E-03	2.86E-04	3.81E-03	2.46E-04	3.28E-03

Cumulative Doses per Year

Organ	ODCM Lmt	Units	Year to Ending Date	% ODCM	Receptor	Limit
Bone	1.500E+01	mRem	1.544E-05	1.029E-04	Gas Controlling Receptor	Iodine/Part Dose Annual
GI-Lli	1.500E+01	mRem	1.112E-03	7.417E-03	Gas Controlling Receptor	Iodine/Part Dose Annual
Kidney	1.500E+01	mRem	1.114E-03	7.427E-03	Gas Controlling Receptor	Iodine/Part Dose Annual
Liver	1.500E+01	mRem	1.113E-03	7.421E-03	Gas Controlling Receptor	Iodine/Part Dose Annual
Lung	1.500E+01	mRem	1.112E-03	7.411E-03	Gas Controlling Receptor	Iodine/Part Dose Annual
Thyroid	1.500E+01	mRem	1.501E-03	1.001E-02	Gas Controlling Receptor	Iodine/Part Dose Annual
Total Body	1.500E+01	mRem	1.113E-03	7.418E-03	Gas Controlling Receptor	Iodine/Part Dose Annual

Table 2-5B
Joseph M Farley Nuclear Plant
RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Doses To A Member Of The Public Due To Radioiodines, Tritium, and Particulates in Gaseous Releases
Unit: 2
Starting: 1-Jan- 2008 Ending: 31-Dec-2008

Cumulative Doses Per Quarter

Organ	ODCM Lmt	Units	1ST Qtr	% ODCM	2ND Qtr	% ODCM	3RD Qtr	% ODCM	4TH Qtr	% ODCM
Bone	7.50E+00	mRem	1.39E-05	1.86E-04	9.66E-07	1.29E-05	2.01E-05	2.68E-04	1.34E-06	1.79E-05
GI-Lli	7.50E+00	mRem	4.19E-04	5.59E-03	2.27E-03	3.02E-02	4.01E-04	5.35E-03	7.68E-04	1.02E-02
Kidney	7.50E+00	mRem	4.19E-04	5.58E-03	2.27E-03	3.02E-02	4.01E-04	5.35E-03	7.68E-04	1.02E-02
Liver	7.50E+00	mRem	4.19E-04	5.58E-03	2.27E-03	3.02E-02	4.01E-04	5.35E-03	7.68E-04	1.02E-02
Lung	7.50E+00	mRem	4.19E-04	5.58E-03	2.27E-03	3.02E-02	4.01E-04	5.35E-03	7.68E-04	1.02E-02
Thyroid	7.50E+00	mRem	4.19E-04	5.58E-03	2.27E-03	3.02E-02	4.01E-04	5.35E-03	7.68E-04	1.02E-02
Total Body	7.50E+00	mRem	4.22E-04	5.63E-03	2.27E-03	3.02E-02	4.06E-04	5.41E-03	7.68E-04	1.02E-02

Cumulative Doses per Year

Organ	ODCM Lmt	Units	Year to Ending Date	% ODCM	Receptor	Limit
Bone	1.500E+01	mRem	3.635E-05	2.424E-04	Gas Controlling Receptor	Iodine/Part Dose Annual
GI-Lli	1.500E+01	mRem	3.853E-03	2.569E-02	Gas Controlling Receptor	Iodine/Part Dose Annual
Kidney	1.500E+01	mRem	3.853E-03	2.569E-02	Gas Controlling Receptor	Iodine/Part Dose Annual
Liver	1.500E+01	mRem	3.853E-03	2.569E-02	Gas Controlling Receptor	Iodine/Part Dose Annual
Lung	1.500E+01	mRem	3.853E-03	2.569E-02	Gas Controlling Receptor	Iodine/Part Dose Annual
Thyroid	1.500E+01	mRem	3.853E-03	2.569E-02	Gas Controlling Receptor	Iodine/Part Dose Annual
Total Body	1.500E+01	mRem	3.861E-03	2.574E-02	Gas Controlling Receptor	Iodine/Part Dose Annual

TABLE 2-6
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
MINIMUM DETECTABLE CONCENTRATIONS - GASEOUS EFFLUENT ANALYSES

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

Nuclide	MDC(uCi/ML)	Nuclide	MDC(uCi/ML)
MN-54	4.17E-14	KR-87	4.64E-08
CO-58	7.65E-14	KR-88	7.46E-08
FE-59	2.53E-14	XE-133	4.71E-08
CO-60	6.01E-14	XE-133M	1.42E-07
ZN-65	2.40E-13	XE-135	1.58E-08
MO-99	4.46E-13	XE-138	1.21E-07
CS-134	5.17E-14	I-131	5.95E-14
CS-137	6.95E-15	I-133	8.96E-14
CE-141	4.28E-14		
CE-144	1.64E-13		

Table 2-7A
Joseph M Farley Nuclear Plant
RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Gaseous Effluents - Batch Release Summary
Unit: 1
Starting: 1-Jan- 2008 Ending: 31-Dec-2008

Gaseous Releases	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Year Totals
1. Number of batch releases		0	0	1	4	5
2. Total time period for batch releases	(Minutes)	0.00E+00	0.00E+00	3.04E+02	1.36E+03	1.66E+03
3. Maximum time period for a batch release	(Minutes)	0.00E+00	0.00E+00	3.04E+02	3.87E+02	3.87E+02
4. Average time period for a batch release	(Minutes)	0.00E+00	0.00E+00	3.04E+02	3.40E+02	3.33E+02
5. Minimum time period for a batch release	(Minutes)	0.00E+00	0.00E+00	3.04E+02	2.69E+02	2.69E+02

Table 2-7B
Joseph M Farley Nuclear Plant
RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Gaseous Effluents - Batch Release Summary
Unit: 2
Starting: 1-Jan- 2008 Ending: 31-Dec-2008

Gaseous Releases	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Year Totals
1. Number of batch releases		49	57	66	39	211
2. Total time period for batch releases	(Minutes)	3.75E+03	4.26E+03	6.21E+03	5.26E+03	1.95E+04
3. Maximum time period for a batch release	(Minutes)	4.98E+02	3.35E+02	5.04E+02	5.35E+02	5.35E+02
4. Average time period for a batch release	(Minutes)	7.64E+01	7.48E+01	9.40E+01	1.35E+02	9.23E+01
5. Minimum time period for a batch release	(Minutes)	3.00E+00	3.00E+00	3.00E+00	3.00E+00	3.00E+00

Table 2-8A

Joseph M Farley Nuclear Plant
RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Gaseous Effluents - Abnormal Release Summary
Unit: 1
Starting: 1-Jan-2008 Ending: 31-Dec-2008

Gaseous Releases	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Year Totals
1. Number of Releases	:	0	0	0	0	0
2. Total Time For All Releases	(Minutes):	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3. Maximum Time For A Release	(Minutes):	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4. Average Time For A Release	(Minutes):	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
5. Minimum Time For A Release	(Minutes):	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
6. Total activity for all releases	(Curies) :	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Table 2-8B

Joseph M Farley Nuclear Plant
RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Gaseous Effluents - Abnormal Release Summary
Unit: 2
Starting: 1-Jan-2008 Ending: 31-Dec-2008

Gaseous Releases	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Year Totals
1. Number of Releases	:	0	0	0	0	0
2. Total Time For All Releases	(Minutes):	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3. Maximum Time For A Release	(Minutes):	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4. Average Time For A Release	(Minutes):	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
5. Minimum Time For A Release	(Minutes):	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
6. Total activity for all releases	(Curies) :	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

3.0 SOLID WASTE

3.1 Regulatory Requirements

3.1.1 Solid Radioactive Waste System

PCP B.3.1 states in part that the radwaste solidification system shall be operable and used for the solidification and packaging of radioactive wastes to ensure meeting the requirements of 10CFR Part 20 and 10CFR Part 71 prior to shipment of radioactive wastes from the site.

3.1.2 Reporting Requirements

PCP B.5.1.1 states in part that the Annual Radioactive Effluent Release Report, submitted in accordance with Technical Specification 5.6.3, shall include a summary of the quantities of solid radwaste released from the units as outlined in Regulatory Guide 1.21, with data summarized on a six-month basis following the format of Appendix B thereof.

3.2 Solid Waste Data

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

The error involved in determining the contents of solid radwaste shipments is estimated to be less than + or - 15%.

TABLE 3-1
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
SOLID WASTE AND IRRADIATED FUEL SHIPMENTS
Starting: 01-Jan-2008 Ending: 30-Jun-2008

A. SOLID WASTE SHIPPED OFFSITE FOR BURIAL OR DISPOSAL (Not irradiated fuel)

1. Type of Waste.	UNITS	6-Months
a. Spent resins, Filter sludges, evaporator bottoms, etc.	m^3	1.666
	Ci*	155.2
b. Dry compressible waste, contaminated equipment, etc.	m^3	40.39
	Ci*	7.207
c. Irradiated components, control rods, etc.	m^3	5.663E-4
	Ci*	0.597
d. Other (describe)	m^3	None
	Ci*	None

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

a. ^{63}Ni 45.11% ^{60}Co 23.68% ^{55}Fe 10.96% ^{65}Zn 9.03% ^{125}Sb 2.12% ^{58}Co 2.10% ^{3}H 1.79% ^{14}C 1.24%

b. ^{65}Zn 21.88% ^{60}Co 15.70% ^{63}Ni 12.53% ^{55}Fe 10.41% ^{3}H 10.16% ^{58}Co 5.40% ^{95}Zr 5.08% ^{14}C 4.55% ^{95}Nb 4.48% ^{51}Cr 1.95% ^{137}Cs 1.77% ^{7}Be 1.26% ^{125}Sb 1.21% ^{99}Tc 1.08%

c. ^{55}Fe 74.97% ^{60}Co 18.11% ^{54}Mn 5.13% ^{63}Ni 1.54%

d. None

* Measured and/or estimated by correlations in accordance with 10CFR61.55.

TABLE 3-1
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
SOLID WASTE AND IRRADIATED FUEL SHIPMENTS
Starting: 01-Jan-2008 Ending: 30-Jun-2008
(Continued)

3. Solid Waste Disposition

Number of Shipments	Mode of Transportation	Destination
3	Highway	Clive, Utah
3	Highway	Barnwell, SC
11	Rail	Clive, Utah

4. Type of Containers (Shipped offsite for burial/processing)

Container Description	Type of Container	Number of Containers	Container Volume (m^3)
a. Radlok 500	Inner package Liner	1	3.85
CNS-8-120	Inner package Liner	2	3.41
b. 20' Seavan	General Design Package	8	29.45
20' Intermodal	General Design Package	4	29.25
c. 1 liter bottle	Inner package	1	0.001

5. Solidification Agent

a. None b. None

B. Irradiated Fuel Shipments (Disposition)

Number of Shipments	Mode of Transportation	Destination
None	N/A	N/A

TABLE 3-1
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
SOLID WASTE AND IRRADIATED FUEL SHIPMENTS
Starting: 01-Jul-2008 Ending: 31-Dec-2008

(Continued)

A. SOLID WASTE SHIPPED OFFSITE FOR BURIAL OR DISPOSAL (Not irradiated fuel)

1. Type of Waste.	UNITS	6-Months
a. Spent resins, Filter sludges, evaporator bottoms, etc.	m^3	0.348
	Ci*	2.677
b. Dry compressible waste, contaminated equipment, etc.	m^3	19.66
	Ci*	0.958
c. Irradiated components, control rods, etc.	m^3	None
	Ci*	None
d. Other (describe)	m^3	None
	Ci*	None

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

a. ^{55}Fe 32.64% ^{60}Co 21.47% ^{65}Zn 20.72% ^{14}C 6.55% ^{3}H 3.68% ^{58}Co 3.47% ^{137}Cs 2.19% ^{63}Ni 2.09% ^{95}Zr 2.08% ^{125}Sb 1.47%

b. ^{65}Zn 14.51% ^{95}Zr 10.93% ^{55}Fe 10.71% ^{60}Co 9.98% ^{95}Nb 9.54% ^{3}H 9.38% ^{58}Co 7.93% ^{51}Cr 6.42% ^{99}Tc 5.85% ^{63}Ni 4.76% ^{14}C 4.44% ^{129}I 1.16%

c. None

d. None

* Measured and/or estimated by correlations in accordance with 10CFR61.55.

TABLE 3-1
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
SOLID WASTE AND IRRADIATED FUEL SHIPMENTS
Starting: 01-Jul-2008 Ending: 31-Dec-2008
(Continued)

3. Solid Waste Disposition

Number of Shipments	Mode of Transportation	Destination
9	Highway	Clive, Utah
9	Rail	Clive, Utah

4. Type of Containers (Shipped offsite for burial/processing)

Container Description	Type of Container	Number of Containers	Container Volume (m^3)
a. 55 Gal Drum	General Design Package	9	0.212
c. 55 Gal Drum	General Design Package	5	0.212
20' Seavan	General Design Package	11	29.45
20' Intermodal	General Design Package	12	29.25

5. Solidification Agent

a. None b. None

B. Irradiated Fuel Shipments (Disposition)

Number of Shipments	Mode of Transportation	Destination
None	N/A	N/A

4.0 DOSES TO MEMBERS OF THE PUBLIC INSIDE THE SITE BOUNDARY

4.1 Regulatory Requirements

Current FNP effluent controls as established by ODCM 6.1 do not require assessment of the radiation doses from radioactive liquid and gaseous effluents to MEMBERS OF THE PUBLIC due to their activities inside the SITE BOUNDARY (ODCM Figure 10-1).

4.2 Demonstration of Compliance

However, this assessment has been performed for 2008 using the methods described in ODCM 6.2 and is included in this section as Table 4-1.

Table 4-1

Joseph M Farley Nuclear Plant

RADIOACTIVE EFFLUENT RELEASE REPORT - 2008

Doses to a Member of the Public Due to Activities Inside the Site Boundary

Unit: Site

Starting: 1-Jan-2008 Ending: 31-Dec-2008

Location Name: Visitor Center
Distance (kilometers): 3.06E-01
Sector: N
Occupancy Factor: 1.37E-03
Age Group: Child

Ground Level Release	Noble Gas	X/Q (sec/m3): 1.04E-04	
Ground Level Release	Particulate and Radioiodine	X/Q (sec/m3): 1.04E-04	D/Q (m-2): 4.80E-07
Mixed Mode Release	Noble Gas	X/Q (sec/m3): 8.80E-06	
Mixed Mode Release	Particulate and Radioiodine	X/Q (sec/m3): 8.80E-06	D/Q (m-2): 6.20E-08

	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Year
Bone	mRem	3.02E-09	3.02E-09	2.03E-09	1.65E-09	9.72E-09
Liver	mRem	2.04E-06	8.20E-06	2.15E-06	3.18E-06	1.56E-05
Total Body	mRem	2.04E-06	8.20E-06	2.15E-06	3.18E-06	1.56E-05
Thyroid	mRem	2.23E-06	8.52E-06	2.15E-06	3.20E-06	1.61E-05
Kidney	mRem	2.04E-06	8.20E-06	2.15E-06	3.18E-06	1.56E-05
Lung	mRem	2.04E-06	8.20E-06	2.15E-06	3.18E-06	1.56E-05
GI-Lli	mRem	2.04E-06	8.20E-06	2.15E-06	3.18E-06	1.56E-05
NG Total Body	mRem	2.14E-05	2.30E-05	2.96E-05	3.76E-05	1.12E-04
Whole Body Dose	mRem	2.35E-05	3.12E-05	3.18E-05	4.08E-05	1.27E-04

Table 4-1

Joseph M Farley Nuclear Plant
RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Doses to a Member of the Public Due to Activities Inside the Site Boundary
Unit: Site
Starting: 1-Jan-2008 Ending: 31-Dec-2008

Location Name: Service Water Pond
Distance (kilometers): 9.66E-01
Sector: N
Occupancy Factor: 7.57E-03
Age Group: Child

Ground Level Release	Noble Gas	X/Q (sec/m3): 4.74E-05	
Ground Level Release	Particulate and Radioiodine	X/Q (sec/m3): 4.74E-05	D/Q (m-2): 1.31E-07
Mixed Mode Release	Noble Gas	X/Q (sec/m3): 9.75E-07	
Mixed Mode Release	Particulate and Radioiodine	X/Q (sec/m3): 9.75E-07	D/Q (m-2): 2.78E-08

	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Year
Bone	mRem	3.64E-09	4.88E-09	1.24E-09	3.88E-09	1.36E-08
Liver	mRem	1.25E-06	5.02E-06	1.32E-06	1.95E-06	9.54E-06
Total Body	mRem	1.25E-06	5.02E-06	1.32E-06	1.95E-06	9.54E-06
Thyroid	mRem	1.37E-06	5.22E-06	1.32E-06	1.96E-06	9.86E-06
Kidney	mRem	1.25E-06	5.02E-06	1.32E-06	1.95E-06	9.54E-06
Lung	mRem	1.25E-06	5.02E-06	1.32E-06	1.95E-06	9.54E-06
GI-Lli	mRem	1.25E-06	5.02E-06	1.32E-06	1.95E-06	9.54E-06
NG Total Body	mRem	1.31E-05	1.41E-05	1.81E-05	2.30E-05	6.84E-05
Whole Body Dose	mRem	1.44E-05	1.91E-05	1.95E-05	2.50E-05	7.79E-05

Table 4-1

Joseph M Farley Nuclear Plant

RADIOACTIVE EFFLUENT RELEASE REPORT - 2008

Doses to a Member of the Public Due to Activities Inside the Site Boundary

Unit: Site

Starting: 1-Jan-2008 Ending: 31-Dec-2008

Location Name: River Water Discharge - Air
Distance (kilometers): 1.64E+00
Sector: N
Occupancy Factor: 1.14E-02
Age Group: Child

Ground Level Release	Noble Gas	X/Q (sec/m3): 1.63E-05	
Ground Level Release	Particulate and Radioiodine	X/Q (sec/m3): 1.63E-05	D/Q (m-2): 4.55E-08
Mixed Mode Release	Noble Gas	X/Q (sec/m3): 7.05E-07	
Mixed Mode Release	Particulate and Radioiodine	X/Q (sec/m3): 7.05E-07	D/Q (m-2): 1.39E-08

	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Year
Bone	mRem	3.16E-09	3.96E-09	1.35E-09	2.94E-09	1.14E-08
Liver	mRem	1.36E-06	5.47E-06	1.43E-06	2.12E-06	1.04E-05
Total Body	mRem	1.36E-06	5.47E-06	1.43E-06	2.12E-06	1.04E-05
Thyroid	mRem	1.49E-06	5.68E-06	1.43E-06	2.13E-06	1.07E-05
Kidney	mRem	1.36E-06	5.47E-06	1.43E-06	2.12E-06	1.04E-05
Lung	mRem	1.36E-06	5.47E-06	1.44E-06	2.12E-06	1.04E-05
GI-Lli	mRem	1.36E-06	5.47E-06	1.43E-06	2.12E-06	1.04E-05
NG Total Body	mRem	1.43E-05	1.54E-05	1.98E-05	2.51E-05	7.45E-05
Whole Body Dose		1.57E-05	2.08E-05	2.12E-05	2.72E-05	8.49E-05

5.0 TOTAL DOSE FROM URANIUM FUEL CYCLE (40CFR190)

5.1 Regulatory Requirements

Technical Specification 5.5.4.j states that the dose or dose commitment to any MEMBER OF THE PUBLIC over a calendar year, due to releases of radioactivity and to radiation from uranium fuel cycle sources, shall be limited to less than or equal to 25 mrem to the total body or to any organ, except the thyroid, which shall be limited to less than or equal to 75 mrem (as stated in ODCM 5.1).

With the calculated doses from the release of radioactive materials in liquid or gaseous effluents exceeding twice the limits of ODCM 2.1.3, 3.1.3, or 3.1.4, calculations shall be made according to ODCM 5.2 methods to determine whether the above (ODCM 5.1) limits have been exceeded (as stated in ODCM 5.1.2).

5.2 Demonstration of Compliance

Since none of the ODCM 2.1.3, 3.1.3, or 3.1.4 limits were exceeded during 2008, no calculations were required.

6.0 METEOROLOGICAL DATA

Meteorological data are retained onsite; these data are available to the NRC upon request. The meteorological data include annual as well as quarterly summaries of hourly measurements of wind speed, wind direction and atmospheric stability in the form of joint frequency distribution tables.

7.0 PROGRAM DEVIATIONS

7.1 Inoperable Liquid or Gaseous Effluent Monitoring Instrumentation

7.1.1 Regulatory Requirements

ODCM 7.2.2.6 states in part that the Annual Radioactive Effluent Release Report (the report) shall include deviations from the liquid and gaseous effluent monitoring instrumentation operability requirements included in Sections 2.1.1 and 3.1.1 of the ODCM. The report must also include an explanation as to why the inoperability was not corrected in a timely manner.

7.1.2 Description of Deviations

There were no deviations during 2008.

7.2 Effluent Sample Analysis Exceeding Minimum Detectable Concentration (MDC)

7.2.1 Regulatory Requirements

ODCM 7.2.2.6 states in part that the report shall include deviations from the MDC requirements included in ODCM Tables 2-3 and 3-3.

7.2.2 Description of Deviations

There were no deviations during 2008.

7.3 Incorrect Compositing of Liquid or Gaseous Effluent Samples

7.3.1 Regulatory Requirements

ODCM 7.2.2.6 states in part that the report shall include deviations from composite sampling requirements included in ODCM Tables 2-3 and 3-3.

7.3.2 Description of Deviations

There were two deviations from liquid effluent sampling requirements during 2008.
Unit 1 had a deviation on October 17, 2008, when the service water flow transmitter was erratic for a period of ~ 12 hours. This event was documented in CR2008110644.
Unit 2 had a deviation on February 14, 2008, when the autosampler for Turbine Building Sump 2A failed to collect two samples for the day. Details of this event are documented in condition report 2008101423.

8.0 CHANGES TO THE PLANT FARLEY ODCM

8.1 Regulatory Requirements

Pursuant to Technical Specification 5.5.1.c and ODCM 7.2.2.5, licensee initiated changes to the ODCM shall be submitted to the Nuclear Regulatory Commission as a part of or concurrent with the Annual Radioactive Effluent Release Report for the period in which any changes were made. Included are changes to the radiological environmental monitoring program sampling locations or dose calculation locations or pathways, including any changes made pursuant to ODCM 4.1.2.2.2 (land use census).

8.2 Description of Changes

The 2008 revision to the Farley ODCM included the following changes: the outdated references to the Farley QA Manual were removed from the ODCM in Section 2.1.5, Section 3.1.6, and in the References Section; and the requirements of the onsite radiological groundwater protection program were added to the Farley Radiological Environmental Monitoring Program in the ODCM Table 4-1, Table 4-5 and Figure 4-5.

9.0 MAJOR CHANGES TO LIQUID, GASEOUS, OR SOLID RADWASTE TREATMENT SYSTEMS

9.1 Regulatory Requirements

ODCM 7.2.2.7 states in part that, as required by ODCM 2.1.5 and 3.1.6, licensee initiated MAJOR CHANGES TO RADIOACTIVE WASTE TREATMENT SYSTEMS (liquid and gaseous) shall be reported to the Nuclear Regulatory Commission in the Annual Radioactive Effluents Release Report covering the period in which the change was reviewed and accepted for implementation.

Process Control Program (PCP) B.5.1.2 states that licensee initiated major changes to the solid radioactive waste treatment system shall be reported to the Nuclear Regulatory Commission in the Annual Radioactive Effluent Release Report for the period in which the change was implemented. The discussion of each change shall include the information specified in PCP B.4.1.

9.2 Description of Major Changes

There were no major changes during 2008.

Edwin I. Hatch Nuclear Plant
Joseph M. Farley Nuclear Plant
Vogtle Electric Generating Plant
Annual Radioactive Effluent Release Reports for 2008

Enclosure 3

Vogtle Annual Radioactive Effluent Release Report for 2008

SOUTHERN NUCLEAR 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

ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

FOR

JANUARY 1 2008 TO DECEMBER 31, 2008

VOGTLE ELECTRIC GENERATING PLANT
RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
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1.0 Liquid Effluents

1.1 Regulatory Requirements

1.1.1 Concentration Limits

In accordance with Technical Specification 5.5.4.b, the concentration of radioactive material released in liquid effluents to UNRESTRICTED AREAS shall be limited at all times to ten times the concentrations specified in 10 CFR 20, Appendix B, Table 2, Column 2 for radionuclides other than dissolved or entrained noble gases. For dissolved or entrained noble gases, the concentration shall be limited to 1 E-04 μCi/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 as follows:

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

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

1.2 Effluent Concentration Limit (ECL)

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

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

For gross alpha in liquid radwaste, the ECL is 2 E-09 μCi/ml.

For all the above radionuclides or categories of radioactivity, the overall ECL fraction is determined in accordance with 10 CFR Part 20, Appendix B. The method utilizing the ECL fraction to determine release rates and liquid radwaste effluent radiation monitor set points is described in Subsection 1.3 of this report.

1.3 Measurements and Approximations of Total Radioactivity

1.3.1 Total Radioactivity Determination

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

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

1.3.1 Total Radioactivity Determination cont'd

Gamma isotopic measurements are performed using germanium detectors with a resolution of 2.1 keV or lower. A peak search of the resulting gamma ray spectrum is performed by the computer system. Energy and net count data for all significant peaks are determined, and a quantitative reduction or MDC calculation is performed. This ensures that the MDC's are met for the nuclides specified in ODCM Chapter 10 (i.e., Mn-54, Fe-59, Co-58, Co-60, Zn-65, Mo-99, Cs-134, Cs-137, Ce-141 and Ce-144). The quantitative calculations, corrections for counting time, decay time, sample volume, sample geometry, detector efficiency, baseline counts, branching ratio and MDC calculations, are made based on the counts at the location in the spectrum where the peak for that radionuclide would be located, if present.

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

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

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

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

Typically achieved liquid effluent sample analyses minimum detectable concentrations are reported in Table 1-4.

1.3.2 Total Error Estimation

The total or maximum error associated with the effluent measurement includes 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.

a. 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	24.5%

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

Sampling and statistical errors	10%
Counting equipment calibration	10%
Tank volumes and system flow rate	20%
TOTAL ERROR	24.5%

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

Sampling and statistical error	20%
Counting equipment calibration	10%
Tank volumes and system flow rate	20%
TOTAL ERROR	30%

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

Sampling and statistical error	10%
Counting Equipment calibration	10%
Tank volumes and system flowrates	20%
TOTAL ERROR	24.5%

1.3.2 Total Error Estimation cont'd

e. 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	14%

f. Volume of dilution water used was calculated from flow totalizers and pump discharge flow rates and times.

Flow totalizer error	10%
Operator interpretation of gauge	10%
TOTAL ERROR	14%

g. Gross alpha, Sr-89, Sr-90, Fe-55 and H-3 radioactivity has an additional error associated with sample compositing.

Compositing sample error	5%

1.4 Liquid Effluent Release Data

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

1.5 Radiological Impact 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 1-3A for Unit 1 and 1-3B for Unit 2, for all four quarters.

1.6 Liquid Effluents – Batch Releases

Batch release information for liquid effluents is presented in Table 1-5A for Unit 1 and Table 1-5B for Unit 2.

1.7 Liquid Effluents - Abnormal Releases

There were no abnormal releases for this reporting period.

Table 1-1A

Vogtle Electric Generating Plant

RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Liquid Effluents - Summation Of All Releases

Unit: 1
Starting: 1-Jan- 2008 Ending: 31-Dec-2008

Type of Effluent	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter
A. Fission And Activation Products					
1. Total Release (not including tritium, gases, alpha)	Curies	1.35E-02	2.06E-03	1.14E-02	3.99E-03
2. Average diluted concentration during period	uCi/mL	2.08E-08	1.25E-08	3.47E-08	2.11E-08
3. Percent of Applicable Limit	%	*	*	*	*
B. Tritium					
1. Total Release	Curies	3.16E+02	7.64E+01	1.46E+02	4.70E+01
2. Average diluted Concentration during period	uCi/mL	4.85E-04	4.62E-04	4.45E-04	2.48E-04
3. Percent of Applicable Limit	%	*	*	*	*
C. Dissolved and Entrained Gases					
1. Total Release	Curies	7.92E-03	7.63E-05	1.48E-03	2.91E-03
2. Average diluted Concentration during period	uCi/mL	1.21E-08	4.62E-10	4.52E-09	1.54E-08
3. Percent of Applicable Limit	%	*	*	*	*
D: Gross Alpha Radioactivity					
1. Total Release	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
E: Waste Vol Release (Pre-Dilution)	Liters	8.27E+05	3.04E+05	5.71E+05	3.73E+05
F. Volume of Dilution Water Used	Liters	6.53E+08	1.65E+08	3.28E+08	1.89E+08

* Applicable limits are expressed in terms of dose.
See Tables 1-3A and 1-3B of this report.

Table 1-1B

Vogtle Electric Generating Plant

RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Liquid Effluents - Summation Of All Releases

Unit: 2
Starting: 1-Jan- 2008 Ending: 31-Dec-2008

Type of Effluent	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter
A. Fission And Activation Products					
1. Total Release (not including tritium, gases, alpha)	Curies	1.05E-02	1.29E-03	2.27E-02	1.63E-02
2. Average diluted concentration during period	uCi/mL	1.94E-08	1.05E-08	1.81E-08	4.63E-08
3. Percent of Applicable Limit	%	*	*	*	*
B. Tritium					
1. Total Release	Curies	2.45E+02	5.54E+01	3.15E+02	1.63E+02
2. Average diluted Concentration during period	uCi/mL	4.53E-04	4.53E-04	2.50E-04	4.65E-04
3. Percent of Applicable Limit	%	*	*	*	*
C. Dissolved and Entrained Gases					
1. Total Release	Curies	6.16E-03	8.79E-06	9.13E-02	5.93E-03
2. Average diluted Concentration during period	uCi/mL	1.14E-08	7.18E-11	7.26E-08	1.69E-08
3. Percent of Applicable Limit	%	*	*	*	*
D: Gross Alpha Radioactivity					
1. Total Release	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
E: Waste Vol Release (Pre-Dilution)	Liters	6.33E+05	2.02E+05	1.50E+06	7.71E+05
F. Volume of Dilution Water Used	Liters	5.41E+08	1.22E+08	1.26E+09	3.51E+08

* Applicable limits are expressed in terms of dose.
See Tables 1-3A and 1-3B of this report.

Table 1-1C

Vogtle Electric Generating Plant

RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Liquid Effluents - Summation Of All Releases

Unit: Site
Starting: 1-Jan- 2008 Ending: 31-Dec-2008

Type of Effluent	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter
A. Fission And Activation Products					
1. Total Release (not including tritium, gases, alpha)	Curies	2.41E-02	3.35E-03	3.41E-02	2.03E-02
2. Average diluted concentration during period	uCi/mL	2.02E-08	1.16E-08	2.15E-08	3.75E-08
3. Percent of Applicable Limit	%	*	*	*	*
B. Tritium					
1. Total Release	Curies	5.62E+02	1.32E+02	4.60E+02	2.10E+02
2. Average diluted Concentration during period	uCi/mL	4.70E-04	4.58E-04	2.90E-04	3.89E-04
3. Percent of Applicable Limit	%	*	*	*	*
C. Dissolved and Entrained Gases					
1. Total Release	Curies	1.41E-02	8.51E-05	9.28E-02	8.84E-03
2. Average diluted Concentration during period	uCi/mL	1.18E-08	2.96E-10	5.85E-08	1.64E-08
3. Percent of Applicable Limit	%	*	*	*	*
D: Gross Alpha Radioactivity					
1. Total Release	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
E: Waste Vol Release (Pre-Dilution)	Liters	1.46E+06	5.06E+05	2.07E+06	1.14E+06
F. Volume of Dilution Water Used	Liters	1.19E+09	2.88E+08	1.59E+09	5.40E+08

* Applicable limits are expressed in terms of dose.
See Tables 1-3A and 1-3B of this report.

Table 1-2A

Vogtle Electric Generating Plant
RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Liquid Effluents

Unit: 1
Starting: 1-Jan-2008 Ending: 31-Dec-2008

Nuclides Released	Unit	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter
			Batch Mode		
Fission & Activation Products					
Co-57	Curies	7.36E-06	0.00E+00	0.00E+00	0.00E+00
Co-58	Curies	6.97E-04	7.89E-04	1.99E-03	1.36E-03
Co-60	Curies	1.42E-03	2.92E-04	1.87E-03	8.80E-04
Cr-51	Curies	7.75E-06	8.88E-05	0.00E+00	9.88E-05
Fe-55	Curies	1.47E-03	8.10E-04	5.16E-03	1.33E-03
I-131	Curies	3.11E-06	0.00E+00	0.00E+00	1.03E-05
Mn-54	Curies	9.93E-05	2.16E-05	1.35E-04	7.58E-05
Nb-95	Curies	0.00E+00	8.54E-06	1.11E-05	1.56E-05
Sr-89	Curies	1.15E-05	0.00E+00	1.21E-05	6.20E-06
Sr-90	Curies	0.00E+00	4.14E-06	0.00E+00	0.00E+00
Cs-134	Curies	1.86E-05	0.00E+00	5.39E-06	9.26E-06
Cs-137	Curies	4.26E-04	3.77E-05	1.70E-04	1.08E-04
Sb-125	Curies	1.45E-03	7.04E-06	2.03E-03	9.97E-05
Te-125M	Curies	7.94E-03	0.00E+00	0.00E+00	0.00E+00
Total For Period	**Curies**	**1.35E-02**	**2.06E-03**	**1.14E-02**	**3.99E-03**
Tritium					
H-3	Curies	3.16E+02	7.64E+01	1.46E+02	4.70E+01
Dissolved And Entrained Gases					
Xe-133	Curies	7.79E-03	7.63E-05	1.48E-03	2.91E-03
Xe-131M	Curies	8.72E-05	0.00E+00	0.00E+00	0.00E+00
Xe-133M	Curies	3.92E-05	0.00E+00	0.00E+00	0.00E+00
Total For Period	**Curies**	**7.92E-03**	**7.63E-05**	**1.48E-03**	**2.91E-03**

Zeroes in this table indicates that no radioactivity was present at detectable levels.
See Table 1-4 for typical minimum detectable concentrations.

Table 1-2A

Vogtle Electric Generating Plant
RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Liquid Effluents

Unit: 1
Starting: 1-Jan-2008 Ending: 31-Dec-2008

Nuclides Released	Unit	Continuous Mode 1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter
Fission & Activation Products					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Tritium					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Dissolved And Entrained Gases					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Zeroes in this table indicates that no radioactivity was present at detectable levels.
See Table 1-4 for typical minimum detectable concentrations.

Table 1-2B

Vogtle Electric Generating Plant
RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Liquid Effluents

Unit: 2

Starting: 1-Jan-2008 Ending: 31-Dec-2008

Nuclides Released	Unit	Batch Mode 1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter
Fission & Activation Products					
Co-57	Curies	0.00E+00	0.00E+00	0.00E+00	1.44E-05
Co-58	Curies	5.18E-04	6.15E-04	6.25E-03	5.87E-03
Co-60	Curies	6.18E-04	2.31E-04	3.82E-03	3.83E-03
Cr-51	Curies	0.00E+00	3.13E-05	2.38E-05	1.58E-03
Fe-55	Curies	1.08E-03	3.89E-04	1.96E-03	3.21E-03
Fe-59	Curies	0.00E+00	0.00E+00	0.00E+00	3.74E-05
I-131	Curies	8.96E-07	0.00E+00	5.32E-05	8.84E-06
Mn-54	Curies	3.02E-05	1.53E-05	4.22E-04	3.81E-04
Nb-95	Curies	0.00E+00	5.20E-06	2.20E-05	2.40E-04
Sr-89	Curies	7.46E-06	0.00E+00	1.84E-06	7.20E-06
Sr-90	Curies	0.00E+00	1.73E-06	6.96E-06	0.00E+00
Zr-95	Curies	0.00E+00	0.00E+00	0.00E+00	1.35E-04
Cs-134	Curies	1.03E-05	0.00E+00	7.86E-05	8.08E-05
Cs-137	Curies	2.11E-04	0.00E+00	7.35E-04	3.44E-04
Sb-125	Curies	5.40E-04	0.00E+00	6.27E-03	5.38E-04
Te-125M	Curies	7.51E-03	0.00E+00	3.08E-03	0.00E+00
Total For Period	**Curies**	**1.05E-02**	**1.29E-03**	**2.27E-02**	**1.63E-02**
Tritium					
H-3	Curies	2.45E+02	5.54E+01	3.15E+02	1.63E+02
Dissolved And Entrained Gases					
Xe-133	Curies	6.05E-03	8.79E-06	8.98E-02	5.93E-03
Xe-135	Curies	0.00E+00	0.00E+00	4.59E-05	0.00E+00
Xe-131M	Curies	8.72E-05	0.00E+00	9.00E-04	0.00E+00
Xe-133M	Curies	2.99E-05	0.00E+00	5.12E-04	0.00E+00
Total For Period	**Curies**	**6.16E-03**	**8.79E-06**	**9.13E-02**	**5.93E-03**

Zeroes in this table indicates that no radioactivity was present at detectable levels.
See Table 1-4 for typical minimum detectable concentrations.

Table 1-2B

Vogtle Electric Generating Plant
RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Liquid Effluents

Unit: 2
Starting: 1-Jan-2008 Ending: 31-Dec-2008

		Continuous Mode			
Nuclides Released	**Unit**	**1ST Quarter**	**2ND Quarter**	**3RD Quarter**	**4TH Quarter**
Fission & Activation Products					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Tritium					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Dissolved And Entrained Gases					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Zeroes in this table indicates that no radioactivity was present at detectable levels.
See Table 1-4 for typical minimum detectable concentrations.

Table 1-2C

Vogtle Electric Generating Plant
RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Liquid Effluents

Unit: Site
Starting: 1-Jan-2008 Ending: 31-Dec-2008

Nuclides Released	Unit	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter
			Batch Mode		
Fission & Activation Products					
Co-57	Curies	7.36E-06	0.00E+00	0.00E+00	1.44E-05
Co-58	Curies	1.22E-03	1.40E-03	8.24E-03	7.23E-03
Co-60	Curies	2.04E-03	5.24E-04	5.69E-03	4.71E-03
Cr-51	Curies	7.75E-06	1.20E-04	2.38E-05	1.68E-03
Fe-55	Curies	2.55E-03	1.20E-03	7.13E-03	4.53E-03
Fe-59	Curies	0.00E+00	0.00E+00	0.00E+00	3.74E-05
I-131	Curies	4.01E-06	0.00E+00	5.32E-05	1.91E-05
Mn-54	Curies	1.30E-04	3.69E-05	5.58E-04	4.57E-04
Nb-95	Curies	0.00E+00	1.37E-05	3.31E-05	2.56E-04
Sr-89	Curies	1.89E-05	0.00E+00	1.39E-05	1.34E-05
Sr-90	Curies	0.00E+00	5.87E-06	6.96E-06	0.00E+00
Zr-95	Curies	0.00E+00	0.00E+00	0.00E+00	1.35E-04
Cs-134	Curies	2.89E-05	0.00E+00	8.40E-05	9.01E-05
Cs-137	Curies	6.36E-04	3.77E-05	9.05E-04	4.52E-04
Sb-125	Curies	1.98E-03	7.04E-06	8.30E-03	6.38E-04
Te-125M	Curies	1.55E-02	0.00E+00	3.08E-03	0.00E+00
Total For Period	**Curies**	**2.41E-02**	**3.35E-03**	**3.41E-02**	**2.03E-02**
Tritium					
H-3	Curies	5.62E+02	1.32E+02	4.60E+02	2.10E+02
Dissolved And Entrained Gases					
Xe-133	Curies	1.38E-02	8.51E-05	9.13E-02	8.84E-03
Xe-135	Curies	0.00E+00	0.00E+00	4.59E-05	0.00E+00
Xe-131M	Curies	1.74E-04	0.00E+00	9.00E-04	0.00E+00
Xe-133M	Curies	6.91E-05	0.00E+00	5.12E-04	0.00E+00
Total For Period	**Curies**	**1.41E-02**	**8.51E-05**	**9.28E-02**	**8.84E-03**

Zeroes in this table indicates that no radioactivity was present at detectable levels.
See Table 1-4 for typical minimum detectable concentrations.

Table 1-2C

Vogtle Electric Generating Plant
RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Liquid Effluents

Unit: Site
Starting: 1-Jan-2008 Ending: 31-Dec-2008

Nuclides Released	Unit	Continuous Mode 1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter
Fission & Activation Products					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Tritium					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Dissolved And Entrained Gases					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Zeroes in this table indicates that no radioactivity was present at detectable levels.
See Table 1-4 for typical minimum detectable concentrations.

Table 1-3A

Vogtle Electric Generating Plant

RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Doses to a member of the public due to Liquid Releases

Unit: 1
Starting: 1-Jan-2008 Ending: 31-Dec-2008

Cumulative Doses Per Quarter

Organ	ODCM Limit	Units	1ST Qtr	% ODCM	2ND Qtr	% ODCM	3RD Qtr	% ODCM	4TH Qtr	% ODCM
Bone	5.00E+00	mRem	2.05E-03	4.10E-02	2.63E-04	5.26E-03	1.68E-03	3.35E-02	8.73E-04	1.75E-02
GI-Lli	5.00E+00	mRem	7.93E-03	1.59E-01	2.22E-03	4.45E-02	5.85E-03	1.17E-01	1.67E-03	3.33E-02
Kidney	5.00E+00	mRem	8.47E-03	1.69E-01	2.23E-03	4.45E-02	5.66E-03	1.13E-01	1.85E-03	3.70E-02
Liver	5.00E+00	mRem	9.37E-03	1.87E-01	2.41E-03	4.82E-02	7.16E-03	1.43E-01	2.69E-03	5.37E-02
Lung	5.00E+00	mRem	8.90E-03	1.78E-01	2.18E-03	4.36E-02	1.07E-02	2.13E-01	1.86E-03	3.71E-02
Thyroid	5.00E+00	mRem	6.82E-03	1.36E-01	2.14E-03	4.27E-02	4.94E-03	9.87E-02	1.46E-03	2.91E-02
Total Body	1.50E+00	mRem	8.47E-03	5.65E-01	2.33E-03	1.55E-01	6.41E-03	4.27E-01	2.28E-03	1.52E-01

Cumulative Doses per Year

Organ	ODCM Limit	Units	Year to Ending Date	% ODCM	Receptor	Limit
Bone	1.00E+01	mRem	4.87E-03	4.87E-02	Maximum Individual Liquid	Liquid Effluent Organ Annual
GI-Lli	1.00E+01	mRem	1.77E-02	1.77E-01	Maximum Individual Liquid	Liquid Effluent Organ Annual
Kidney	1.00E+01	mRem	1.82E-02	1.82E-01	Maximum Individual Liquid	Liquid Effluent Organ Annual
Liver	1.00E+01	mRem	2.16E-02	2.16E-01	Maximum Individual Liquid	Liquid Effluent Organ Annual
Lung	1.00E+01	mRem	2.36E-02	2.36E-01	Maximum Individual Liquid	Liquid Effluent Organ Annual
Thyroid	1.00E+01	mRem	1.53E-02	1.53E-01	Maximum Individual Liquid	Liquid Effluent Organ Annual
Total Body	3.00E+00	mRem	1.95E-02	6.50E-01	Maximum Individual Liquid	Liquid Effluent TB Annual

Table 1-3B

Vogtle Electric Generating Plant

RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Doses to a member of the public due to Liquid Releases

Unit: 2
Starting: 1-Jan-2008 Ending: 31-Dec-2008

Cumulative Doses Per Quarter

Organ	ODCM Limit	Units	1ST Qtr	% ODCM	2ND Qtr	% ODCM	3RD Qtr	% ODCM	4TH Qtr	% ODCM
Bone	5.00E+00	mRem	1.06E-03	2.12E-02	2.99E-05	5.98E-04	5.24E-03	1.05E-01	2.78E-03	5.56E-02
GI-Lli	5.00E+00	mRem	6.23E-03	1.25E-01	1.43E-03	2.86E-02	9.80E-03	1.96E-01	5.01E-03	1.00E-01
Kidney	5.00E+00	mRem	6.50E-03	1.30E-01	1.38E-03	2.75E-02	1.04E-02	2.08E-01	5.48E-03	1.10E-01
Liver	5.00E+00	mRem	6.58E-03	1.32E-01	1.38E-03	2.76E-02	1.47E-02	2.94E-01	8.31E-03	1.66E-01
Lung	5.00E+00	mRem	6.18E-03	1.24E-01	1.38E-03	2.76E-02	1.96E-02	3.92E-01	5.65E-03	1.13E-01
Thyroid	5.00E+00	mRem	5.37E-03	1.07E-01	1.37E-03	2.75E-02	7.56E-03	1.51E-01	4.10E-03	8.21E-02
Total Body	1.50E+00	mRem	6.14E-03	4.09E-01	1.39E-03	9.25E-02	1.24E-02	8.26E-01	7.03E-03	4.69E-01

Cumulative Doses per Year

Organ	ODCM Limit	Units	Year to Ending Date	% ODCM	Receptor	Limit
Bone	1.00E+01	mRem	9.11E-03	9.11E-02	Maximum Individual Liquid	Liquid Effluent Organ Annual
GI-Lli	1.00E+01	mRem	2.25E-02	2.25E-01	Maximum Individual Liquid	Liquid Effluent Organ Annual
Kidney	1.00E+01	mRem	2.38E-02	2.38E-01	Maximum Individual Liquid	Liquid Effluent Organ Annual
Liver	1.00E+01	mRem	3.10E-02	3.10E-01	Maximum Individual Liquid	Liquid Effluent Organ Annual
Lung	1.00E+01	mRem	3.28E-02	3.28E-01	Maximum Individual Liquid	Liquid Effluent Organ Annual
Thyroid	1.00E+01	mRem	1.84E-02	1.84E-01	Maximum Individual Liquid	Liquid Effluent Organ Annual
Total Body	3.00E+00	mRem	2.69E-02	8.98E-01	Maximum Individual Liquid	Liquid Effluent TB Annual

Table 1-3C

Vogtle Electric Generating Plant

RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Doses to a member of the public due to Liquid Releases

Unit: Site
Starting: 1-Jan-2008 Ending: 31-Dec-2008

Cumulative Doses Per Quarter

Organ	ODCM Limit	Units	1ST Qtr	% ODCM	2ND Qtr	% ODCM	3RD Qtr	% ODCM	4TH Qtr	% ODCM
Bone	5.00E+00	mRem	3.11E-03	6.23E-02	2.93E-04	5.86E-03	6.92E-03	1.38E-01	3.65E-03	7.30E-02
GI-Lli	5.00E+00	mRem	1.42E-02	2.83E-01	3.66E-03	7.31E-02	1.57E-02	3.13E-01	6.68E-03	1.34E-01
Kidney	5.00E+00	mRem	1.50E-02	2.99E-01	3.60E-03	7.20E-02	1.61E-02	3.21E-01	7.33E-03	1.47E-01
Liver	5.00E+00	mRem	1.59E-02	3.19E-01	3.79E-03	7.59E-02	2.18E-02	4.37E-01	1.10E-02	2.20E-01
Lung	5.00E+00	mRem	1.51E-02	3.02E-01	3.56E-03	7.12E-02	3.02E-02	6.05E-01	7.50E-03	1.50E-01
Thyroid	5.00E+00	mRem	1.22E-02	2.44E-01	3.51E-03	7.02E-02	1.25E-02	2.50E-01	5.56E-03	1.11E-01
Total Body	1.50E+00	mRem	1.46E-02	9.74E-01	3.72E-03	2.48E-01	1.88E-02	1.25E+00	9.31E-03	6.21E-01

Cumulative Doses per Year

Organ	ODCM Limit	Units	Year to Ending Date	% ODCM	Receptor	Limit
Bone	1.00E+01	mRem	1.40E-02	1.40E-01	Maximum Individual Liquid	Liquid Effluent Organ Annual
GI-Lli	1.00E+01	mRem	4.01E-02	4.01E-01	Maximum Individual Liquid	Liquid Effluent Organ Annual
Kidney	1.00E+01	mRem	4.20E-02	4.20E-01	Maximum Individual Liquid	Liquid Effluent Organ Annual
Liver	1.00E+01	mRem	5.26E-02	5.26E-01	Maximum Individual Liquid	Liquid Effluent Organ Annual
Lung	1.00E+01	mRem	5.64E-02	5.64E-01	Maximum Individual Liquid	Liquid Effluent Organ Annual
Thyroid	1.00E+01	mRem	3.38E-02	3.38E-01	Maximum Individual Liquid	Liquid Effluent Organ Annual
Total Body	3.00E+00	mRem	4.64E-02	1.55E+00	Maximum Individual Liquid	Liquid Effluent TB Annual

Table 1-4

VOGTLE ELECTRIC GENERATING PLANT
RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
MINIMUM DETECTABLE CONCENTRATIONS - LIQUID SAMPLE ANALYSES

JANUARY 2008 - DECEMBER 2008

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

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

Table 1-5A

Vogtle Electric Generating Plant

RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Liquid Effluents - Batch Release Summary

Unit: 1
Starting: 1-Jan-2008 Ending: 31-Dec-2008

Liquid Releases	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Year Totals
1. Number of batch releases		39	17	19	15	90
2. Total time period for Batch releases	(Minutes)	1.16E+04	3.19E+03	5.03E+03	2.17E+03	2.20E+04
3. Maximum time period for a batch release	(Minutes)	6.85E+02	6.08E+02	1.19E+03	4.79E+02	1.19E+03
4. Average time period for a batch release	(Minutes)	2.97E+02	1.88E+02	2.65E+02	1.44E+02	2.44E+02
5. Minimum time period for a batch release	(Minutes)	3.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
6. Average stream flow during periods of release of liquid effluent into a flowing stream *						**Annual Avg Flow**
	(CFS)	6,035	4,947	4,525	5,582	5,272

* Average River Flow Rate, taken from USGS Monitoring Station 02197500 Savannah River at Burton's Ferry Bridge near Millhaven, Ga
32 River miles downstream of Plant Vogtle

Table 1-5B

Vogtle Electric Generating Plant

RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Liquid Effluents - Batch Release Summary

Unit: 2
Starting: 1-Jan-2008 Ending: 31-Dec-2008

Liquid Releases	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Year Totals
1. Number of batch releases		27	9	33	18	87
2. Total time period for Batch releases	(Minutes)	1.05E+04	2.63E+03	1.44E+04	4.00E+03	3.16E+04
3. Maximum time period for a batch release	(Minutes)	6.85E+02	6.08E+02	8.90E+02	3.28E+02	8.90E+02
4. Average time period for a batch release	(Minutes)	3.89E+02	2.92E+02	4.37E+02	2.22E+02	3.63E+02
5. Minimum time period for a batch release	(Minutes)	3.00E+00	7.6E+01	1.00E+00	6.00E+00	1.00E+00
6. Average stream flow during periods of release of liquid effluent into a flowing stream *						**Annual Avg Flow**
	(CFS)	6,035	4,947	4,525	5,582	5,272

* Average River Flow Rate, taken from USGS Monitoring Station 02197500 Savannah River at Burton's Ferry Bridge near Millhaven, Ga
32 River miles downstream of Plant Vogtle

Table 1-5C

Vogtle Electric Generating Plant

RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Liquid Effluents - Batch Release Summary

Unit: Site
Starting: 1-Jan-2008 Ending: 31-Dec-2008

Liquid Releases	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Year Totals
1. Number of batch releases		42	20	48	33	143
2. Total time period for Batch releases	(Minutes)	1.19E+04	3.43E+03	1.84E+04	6.16E+03	3.99E+04
3. Maximum time period for a batch release	(Minutes)	6.85E+02	6.08E+02	1.19E+03	4.79E+02	1.19E+03
4. Average time period for a batch release	(Minutes)	2.83E+02	1.72E+02	3.83E+02	1.87E+02	2.79E+02
5. Minimum time period for a batch release	(Minutes)	3.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
6. Average stream flow during periods of release of liquid effluent into a flowing stream *						**Annual Avg Flow**
	(CFS)	6,035	4,947	4,525	5,582	5,272

* Average River Flow Rate, taken from USGS Monitoring Station 02197500 Savannah River at Burton's Ferry Bridge near Millhaven, Ga
32 River miles downstream of Plant Vogtle

Table 1-6A

Vogtle Electric Generating Plant

RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Liquid Effluents - Abnormal Release Summary

Unit: 1

Starting: 1-Jan-2008 Ending: 31-Dec-2008

Liquid Releases	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Year Totals
1. Number of Releases		0	0	0	0	0
2. Total Time For All Releases	(Minutes)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3. Maximum Time For A Release	(Minutes)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4. Average Time For A Release	(Minutes)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
5. Minimum Time For A Release	(Minutes)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
6. Total activity for all releases	(Curies)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Table 1-6B

Vogtle Electric Generating Plant

RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Liquid Effluents - Abnormal Release Summary

Unit: 2

Starting: 1-Jan-2008 Ending: 31-Dec-2008

Liquid Releases	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Year Totals
1. Number of Releases		0	0	0	0	0
2. Total Time For All Releases	(Minutes)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3. Maximum Time For A Release	(Minutes)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4. Average Time For A Release	(Minutes)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
5. Minimum Time For A Release	(Minutes)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
6. Total activity for all releases	(Curies)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Table 1-6C

Vogtle Electric Generating Plant

RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Liquid Effluents - Abnormal Release Summary

Unit: Site

Starting: 1-Jan-2008 Ending: 31-Dec-2008

Liquid Releases	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Year Totals
1. Number of Releases		0	0	0	0	0
2. Total Time For All Releases	(Minutes)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3. Maximum Time For A Release	(Minutes)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4. Average Time For A Release	(Minutes)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
5. Minimum Time For A Release	(Minutes)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
6. Total activity for all releases	(Curies)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

2.0 Gaseous Effluents

2.1 Regulatory Requirements

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

2.1.1 Dose Rate Limits

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 Doses Due to Noble Gases in Gaseous Releases

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 Doses to a Member of the Public

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

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

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

2.2 Measurements and Approximations of Total Radioactivity

2.2.1 Sample Collection and Analysis

Gaseous Effluents at the Vogtle Electric Generating Plant are currently confined to six paths: plant vents (Unit 1 and Unit 2), the condenser air ejector, the steam packing exhauster systems (Unit 1 and Unit 2), Radwaste Processing Facility and the DAW (Dry Active Waste Building).

Waste gas decay tanks are batch released through the Unit 1 plant vent. The containment purges are released through their respective plant vents. Containment atmosphere is also released via the containment equipment hatch during periods when the equipment hatch is open with containment purge/vent being stopped. Approval was granted by the NRC to open the equipment hatch during fuel movement; a release permit is generated when the equipment hatch is opened and the containment exhaust fan is not discharging to the plant vent. Any detected activity in the containment equipment hatch permit is included in the Ground Release Table of the effluent report.

All of the paths with the exception of the DAW and RPF can be continuously monitored for gaseous radioactivity. The RPF is equipped with an integrated-type sample collection device for collecting particulates. Plant vent, containment, steam jet air ejector, steam-packing exhauster are equipped with an integrated-type sample collection device for collecting particulates and iodines. Samples of the DAW are collected using portable monitoring equipment during periods of operation. During this reporting period, there were no continuous radioactive releases through the condenser air ejector and the steam packing exhauster system vents. There were no releases from the DAW. Batch Waste Gas Decay Tank releases are analyzed for noble gases before each release. The containment atmosphere is analyzed for noble gases prior to each release and for tritium at least on a monthly basis.

Sample analyses results and release flow rates 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.

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

Typically achieved minimum detectable concentrations for gaseous effluent sample analyses are reported in Table 2-6.

2.2.2 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:

2.2.2.1 Fission and Activation Gases

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

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

2.2.2.2 Radioiodines, Tritium and Particulate Releases

The released quantities of radioiodines, tritium and particulates are determined using the weekly samples and release flow rates for the two plant vent release points.

After each quarter, the particulate filters from each plant vent are combined, for strontium analysis. Strontium concentrations are input to the composite file of the computer to be used for release dose rate and individual dose calculations.

Doses to a Member of the Public due to radioiodines, tritium and particulates are calculated for the controlling receptor, which is described in Table 3-7of the ODCM. Doses are calculated for each release period, and cumulative totals are kept for each unit for the current calendar quarter and year. Cumulative doses are compared to the dose limits specified in ODCM 3.1.4.

Current percent of ODCM limits are shown in this report for each release period.

2.2.2.3 Gross Alpha Release

The gross alpha release is calculated each month by counting the particulate filters for each week for gross alpha activity. 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 used for release calculations.

2.2.3 Total Error Estimation

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.

a. 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	26.5%

b. 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	55%

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

Statistical error at MDC concentration	10%
Counting equipment calibration	10%
Vent flow rates	10%
Vent sample flow rates	50%
Non steady release rates	10%
TOTAL ERROR	54%

2.2.3 Total Error Estimation cont'd

d. 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	20%

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

Statistical error at MDC concentration	10%
Counting equipment calibration	10%
Vent flow rates	10%
Vent sample flow rates	50%
Non Steady release rates	10%
TOTAL ERROR	55%

2.3 Gaseous Effluent Release Data

Regulatory Guide 1.21 Tables 1A, 1B, and 1C are found in this report as Tables 2-1A, 2-1B, 2-1C, 2-2A, 2-2B, 2-2C, 2-3A, 2-3B, and 2-3C. Data are presented on a quarterly basis as required by Regulatory Guide 1.21.

To complete table 2-1A, and 2-1B, the 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 µCi/second for each category. However, the percent of the ODCM limits are not applicable because VEGP has no curie limits for gaseous releases. Applicable limits are expressed in terms of dose. Noble gases are limited as specified in ODCM 3.1.2. The other three categories (tritium, radioiodines, and particulates) are limited as a group as specified in ODCM 3.1.2.

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

Gross alpha radioactivity is reported in Table 2-1A, and 2-1B as curies released in each quarter.

Limits for cumulative beta and gamma air doses due to noble gases are specified in ODCM 3.1.3. Cumulative air doses are presented in Table 2-4A, and 2-4B along with the percent of the ODCM limits.

Limits for cumulative doses to a Member of the Public due to radioiodines, tritium and particulates, are specified in ODCM 3.1.4. Cumulative doses to a Member of the Public are presented in Table 2-5A, and 2-5B along with percent of ODCM limits.

2.4 Radiological Impact Due to Gaseous Releases

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

Dose rates were calculated as part of pre-release and post release permits, no limits were exceeded for this reporting period.

Cumulative air doses due to noble gas releases were calculated for each unit in accordance with ODCM 3.4.2. These results are presented in Tables 2-4A and 2-4B.

Cumulative doses to a Member of the Public were calculated for each unit in accordance with ODCM 3.4.3. These results are presented in Tables 2-5A and 2-5B.

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

2.5 Gaseous Effluents - Batch Releases

Other data pertinent to batch releases of radioactive gaseous effluent from Unit 1 and Unit 2 are listed in Table 2-7A and 2-7B.

2.6 Gaseous Effluents - Abnormal Releases

There were no abnormal releases of gaseous radioactivity for this reporting period.

Table 2-1A

Vogtle Electric Generating Plant

RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Gaseous Effluents - Summation Of All Releases

Unit: 1
Starting: 1-Jan-2008 Ending: 31-Dec-2008

Type of Effluent	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter
A. Fission And Activation Gases					
1. Total Release	Curies	2.33E-01	8.68E-01	7.77E-02	1.05E-01
2. Average Release rate for period	uCi/sec	2.95E-02	1.10E-01	9.86E-03	1.33E-02
3. Percent of Applicable Limit	%	*	*	*	*
B. Radioiodines					
1. Total Iodine-131	Curies	1.81E-05	0.00E+00	0.00E+00	7.12E-07
2. Average Release rate for period	uCi/sec	2.29E-06	0.00E+00	0.00E+00	9.03E-08
3. Percent of Applicable Limit	%	*	*	*	*
C. Particulates					
1. Particulates (Half-Lives > 8 Days)	Curies	1.54E-06	8.72E-07	2.11E-07	3.15E-07
2. Average Release rate for period	uCi/sec	1.95E-07	1.11E-07	2.68E-08	3.996E-08
3. Percent of Applicable Limit	%	*	*	*	*
D. Tritium					
1. Total Release	Curies	3.80E+00	6.45E+00	3.59E+00	1.33E+00
2. Average Release rate for period	uCi/sec	4.83E-01	8.18E-01	4.55E-01	1.68E-01
3. Percent of Applicable Limit	%	*	*	*	*
E. Gross Alpha					
1. Total Release	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2. Average Release rate for period	uCi/sec	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Applicable limits are expressed in terms of dose.
See Tables 2-4A, 2-4B, 2-5A, 2-5B of this report.

Table 2-1B

Vogtle Electric Generating Plant

RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Gaseous Effluents - Summation Of All Releases

Unit: 2
Starting: 1-Jan-2008 Ending: 31-Dec-2008

Type of Effluent	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter
A. Fission And Activation Gases					
1. Total Release	Curies	1.19E+02	1.24E+02	3.31E+02	7.11E+01
2. Average Release rate for period	uCi/sec	1.51E+01	1.57E+01	4.20E+01	9.01E+00
3. Percent of Applicable Limit	%	*	*	*	*
B. Radioiodines					
1. Total Iodine-131	Curies	0.00E+00	0.00E+00	2.21E-06	1.95E-06
2. Average Release rate for period	uCi/sec	0.00E+00	0.00E+00	2.81E-07	2.48E-07
3. Percent of Applicable Limit	%	*	*	*	*
C. Particulates					
1. Particulates (Half-Lives > 8 Days)	Curies	0.00E+00	1.82E-07	1.14E-05	1.63E-05
2. Average Release rate for period	uCi/sec	0.00E+00	2.31E-08	1.45E-06	2.062E-06
3. Percent of Applicable Limit	%	*	*	*	*
D. Tritium					
1. Total Release	Curies	1.95E-01	9.19E-01	4.22E+00	1.39E+00
2. Average Release rate for period	uCi/sec	2.47E-02	1.17E-01	5.36E-01	1.76E-01
	%				

Applicable limits are expressed in terms of dose.
See Tables 2-4A, 2-4B, 2-5A, 2-5B of this report.

Table 2-1C

Vogtle Electric Generating Plant

RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Gaseous Effluents - Summation Of All Releases

Unit: Site
Starting: 1-Jan-2008 Ending: 31-Dec-2008

Type of Effluent	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter
A. Fission And Activation Gases					
1. Total Release	Curies	1.19E+02	1.24E+02	3.31E+02	7.12E+01
2. Average Release rate for period	uCi/sec	1.51E+01	1.58E+01	4.20E+01	9.03E+00
3. Percent of Applicable Limit	%	*	*	*	*
B. Radioiodines					
1. Total Iodine-131	Curies	1.81E-05	0.00E+00	2.21E-06	2.67E-06
2. Average Release rate for period	uCi/sec	2.29E-06	0.00E+00	2.81E-07	3.38E-07
3. Percent of Applicable Limit	%	*	*	*	*
C. Particulates					
1. Particulates (Half-Lives > 8 Days)	Curies	1.54E-06	1.05E-06	1.16E-05	1.66E-05
2. Average Release rate for period	uCi/sec	1.95E-07	1.34E-07	1.48E-06	2.102E-06
3. Percent of Applicable Limit	%	*	*	*	*
D. Tritium					
1. Total Release	Curies	4.00E+00	7.37E+00	7.81E+00	2.72E+00
2. Average Release rate for period	uCi/sec	5.07E-01	9.34E-01	9.90E-01	3.45E-01
	%				

Applicable limits are expressed in terms of dose.
See Tables 2-4A, 2-4B, 2-5A, 2-5B of this report.

Table 2-2A

Vogtle Electric Generating Plant

RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Gaseous Effluents - Mixed Mode Level Releases

Unit: 1
Starting: 1-Jan-2008 Ending: 31-Dec-2008

Continuous Mode

Nuclides Released	Unit	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter
Fission Gases					
Ar-41	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total For Period	**Curies**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**
Iodines					
I-131	Curies	1.81E-05	0.00E+00	0.00E+00	7.12E-07
Total For Period	**Curies**	**1.81E-05**	**0.00E+00**	**0.00E+00**	**7.12E-07**
Particulates					
Sr-89	Curies	0.00E+00	8.72E-07	2.11E-07	3.15E-07
Nb-95	Curies	1.54E-06	0.00E+00	0.00E+00	0.00E+00
Total For Period	**Curies**	**1.54E-06**	**8.72E-07**	**2.11E-07**	**3.15E-07**
Tritium					
H-3	Curies	3.26E+00	1.98E+00	3.42E+00	0.00E+00
Gross Alpha					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00

If Not Detected, Nuclide is Not Reported. Zeroes in this table indicates that no radioactivity was present at detectable levels.
See Table 2-6 for typical minimum detectable concentrations.

Table 2-2A

Vogtle Electric Generating Plant

RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Gaseous Effluents - Mixed Mode Level Releases

Unit: 1
Starting: 1-Jan-2008 Ending: 31-Dec-2008

Batch Mode

Nuclides Released	Unit	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter
Fission Gases					
Ar-41	Curies	5.84E-02	8.28E-01	7.44E-02	8.29E-02
Kr-85	Curies	2.56E-02	0.00E+00	0.00E+00	0.00E+00
Xe-133	Curies	1.31E-01	4.07E-02	3.33E-03	2.18E-02
Total For Period	**Curies**	**2.15E-01**	**8.68E-01**	**7.77E-02**	**1.05E-01**
Iodines					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Particulates					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Tritium					
H-3	Curies	4.53E-01	4.47E+00	1.64E-01	1.33E+00
Gross Alpha					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00

If Not Detected, Nuclide is Not Reported. Zeroes in this table indicates that no radioactivity was present at detectable levels.
See Table 2-6 for typical minimum detectable concentrations.

Table 2-2B

Vogtle Electric Generating Plant

RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Gaseous Effluents - Mixed Mode Level Releases

Unit: 2
Starting: 1-Jan-2008 Ending: 31-Dec-2008

Continuous Mode

Nuclides Released	Unit	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter
Fission Gases					
Ar-41	Curies	0.00E+00	0.00E+00	6.98E-01	0.00E+00
Kr-85M	Curies	0.00E+00	0.00E+00	2.55E-01	0.00E+00
Xe-133	Curies	0.00E+00	0.00E+00	1.49E+01	1.35E+01
Xe-135	Curies	0.00E+00	0.00E+00	1.70E+00	2.63E+00
Total For Period	**Curies**	**0.00E+00**	**0.00E+00**	**1.75E+01**	**1.61E+01**
Iodines					
I-131	Curies	0.00E+00	0.00E+00	2.21E-06	1.95E-06
Total For Period	**Curies**	**0.00E+00**	**0.00E+00**	**2.21E-06**	**1.95E-06**
Particulates					
Sr-89	Curies	0.00E+00	1.82E-07	3.92E-07	9.25E-08
Total For Period	**Curies**	**0.00E+00**	**1.82E-07**	**3.92E-07**	**9.25E-08**
Tritium					
H-3	Curies	0.00E+00	0.00E+00	2.21E+00	1.06E+00
Gross Alpha					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00

If Not Detected, Nuclide is Not Reported. Zeroes in this table indicates that no radioactivity was present at detectable levels.
See Table 2-6 for typical minimum detectable concentrations.

Table 2-2B

Vogtle Electric Generating Plant

RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Gaseous Effluents - Mixed Mode Level Releases

Unit: 2
Starting: 1-Jan-2008 Ending: 31-Dec-2008

Batch Mode

Nuclides Released	Unit	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter
Fission Gases					
Ar-41	Curies	6.14E-01	6.84E-01	3.49E+00	6.14E-01
Kr-85M	Curies	3.37E-03	7.16E-05	7.14E-03	1.90E-03
Kr-85	Curies	1.94E-01	6.93E-03	0.00E+00	0.00E+00
Xe-131M	Curies	1.57E+00	2.04E+00	8.52E-01	1.79E-01
Xe-133M	Curies	7.59E-01	8.83E-01	2.89E+00	6.21E-01
Xe-133	Curies	1.15E+02	1.20E+02	3.06E+02	5.31E+01
Xe-135	Curies	2.21E-01	9.01E-02	5.32E-01	3.54E-01
Total For Period	**Curies**	**1.19E+02**	**1.24E+02**	**3.14E+02**	**5.48E+01**
Iodines					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Particulates					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Tritium					
H-3	Curies	1.95E-01	9.19E-01	2.01E+00	3.33E-01
Gross Alpha					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00

If Not Detected, Nuclide is Not Reported. Zeroes in this table indicates that no radioactivity was present at detectable levels.
See Table 2-6 for typical minimum detectable concentrations.

Table 2-2C

Vogtle Electric Generating Plant

RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Gaseous Effluents - Mixed Mode Level Releases

Unit: Site
Starting: 1-Jan-2008 Ending: 31-Dec-2008

Continuous Mode

Nuclides Released	Unit	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter
Fission Gases					
Ar-41	Curies	0.00E+00	0.00E+00	6.98E-01	0.00E+00
Kr-85M	Curies	0.00E+00	0.00E+00	2.55E-01	0.00E+00
Xe-133	Curies	0.00E+00	0.00E+00	1.49E+01	1.35E+01
Xe-135	Curies	0.00E+00	0.00E+00	1.70E+00	2.63E+00
Total For Period	**Curies**	**0.00E+00**	**0.00E+00**	**1.75E+01**	**1.61E+01**
Iodines					
I-131	Curies	1.81E-05	0.00E+00	2.21E-06	2.67E-06
Total For Period	**Curies**	**1.81E-05**	**0.00E+00**	**2.21E-06**	**2.67E-06**
Particulates					
Sr-89	Curies	0.00E+00	1.05E-06	6.03E-07	4.08E-07
Nb-95	Curies	1.54E-06	0.00E+00	0.00E+00	0.00E+00
Total For Period	**Curies**	**1.54E-06**	**1.05E-06**	**6.03E-07**	**4.08E-07**
Tritium					
H-3	Curies	3.26E+00	1.98E+00	5.64E+00	1.06E+00
Gross Alpha					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00

If Not Detected, Nuclide is Not Reported. Zeroes in this table indicates that no radioactivity was present at detectable levels.
See Table 2-6 for typical minimum detectable concentrations.

Table 2-2C

Vogtle Electric Generating Plant

RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Gaseous Effluents - Mixed Mode Level Releases

Unit: Site
Starting: 1-Jan-2008 Ending: 31-Dec-2008

Batch Mode

Nuclides Released	Unit	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter
Fission Gases					
Ar-41	Curies	6.72E-01	1.51E+00	3.56E+00	6.97E-01
Kr-85M	Curies	3.37E-03	7.16E-05	7.14E-03	1.90E-03
Kr-85	Curies	2.19E-01	6.93E-03	0.00E+00	0.00E+00
Xe-131M	Curies	1.57E+00	2.04E+00	8.52E-01	1.79E-01
Xe-133M	Curies	7.59E-01	8.83E-01	2.89E+00	6.21E-01
Xe-133	Curies	1.16E+02	1.20E+02	3.06E+02	5.31E+01
Xe-135	Curies	2.21E-01	9.01E-02	5.32E-01	3.54E-01
Total For Period	**Curies**	**1.19E+02**	**1.24E+02**	**3.14E+02**	**5.50E+01**
Iodines					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Particulates					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Tritium					
H-3	Curies	6.48E-01	5.39E+00	2.17E+00	1.66E+00
Gross Alpha					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00

If Not Detected, Nuclide is Not Reported. Zeroes in this table indicates that no radioactivity was present at detectable levels.
See Table 2-6 for typical minimum detectable concentrations.

Table 2-3A

Vogtle Electric Generating Plant

RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Gaseous Effluents - Ground Level Releases

Unit: 1
Starting: 1-Jan-2008 Ending: 31-Dec-2008

		Continuous Mode			
Nuclides Released	**Unit**	**1ST Quarter**	**2ND Quarter**	**3RD Quarter**	**4TH Quarter**
Fission Gases					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Iodines					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Particulates					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Tritium					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Gross Alpha					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00

If Not Detected, Nuclide is Not Reported. Zeroes in this table indicates that no radioactivity was present at detectable levels.
See Table 2-6 for typical minimum detectable concentrations.

Table 2-3A

Vogtle Electric Generating Plant

RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Gaseous Effluents - Ground Level Releases

Unit: 1
Starting: 1-Jan-2008 Ending: 31-Dec-2008

Nuclides Released	Unit	Batch Mode 1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter
Fission Gases					
Xe-133	Curies	1.76E-02	0.00E+00	0.00E+00	0.00E+00
Iodines					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Particulates					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Tritium					
No Nuclides Found	Curies	9.03E-02	0.00E+00	0.00E+00	0.00E+00
Gross Alpha					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00

If Not Detected, Nuclide is Not Reported. Zeroes in this table indicates that no radioactivity was present at detectable levels.
See Table 2-6 for typical minimum detectable concentrations.

Table 2-3B

Vogtle Electric Generating Plant

RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Gaseous Effluents - Ground Level Releases

Unit: 2
Starting: 1-Jan-2008 Ending: 31-Dec-2008

Nuclides Released	Unit	Continuous Mode 1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter
Fission Gases					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Iodines					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Particulates					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Tritium					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Gross Alpha					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00

If Not Detected, Nuclide is Not Reported. Zeroes in this table indicates that no radioactivity was present at detectable levels.
See Table 2-6 for typical minimum detectable concentrations.

Table 2-3B

Vogtle Electric Generating Plant

RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Gaseous Effluents - Ground Level Releases

Unit: 2
Starting: 1-Jan-2008 Ending: 31-Dec-2008

Nuclides Released	Unit	Batch Mode 1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter
Fission Gases					
Ar-41	Curies	0.00E+00	0.00E+00	6.90E-04	0.00E+00
Xe-133	Curies	0.00E+00	0.00E+00	5.21E-02	7.68E-02
Total For Period	**Curies**	**0.00E+00**	**0.00E+00**	**5.28E-02**	**7.68E-02**
Iodines					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Particulates					
Co-58	Curies	0.00E+00	0.00E+00	1.10E-05	1.62E-05
Total For Period	**Curies**	**0.00E+00**	**0.00E+00**	**1.10E-05**	**1.62E-05**
Tritium					
H-3	Curies	0.00E+00	0.00E+00	1.05E-03	1.02E-03
Gross Alpha					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00

If Not Detected, Nuclide is Not Reported. Zeroes in this table indicates that no radioactivity was present at detectable levels.
See Table 2-6 for typical minimum detectable concentrations.

Table 2-3C

Vogtle Electric Generating Plant

RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Gaseous Effluents - Ground Level Releases

Unit: Site
Starting: 1-Jan-2008 Ending: 31-Dec-2008

Nuclides Released	Unit	Continuous Mode 1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter
Fission Gases					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Iodines					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Particulates					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Tritium					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Gross Alpha					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00

If Not Detected, Nuclide is Not Reported. Zeroes in this table indicates that no radioactivity was present at detectable levels.
See Table 2-6 for typical minimum detectable concentrations.

Table 2-3C

Vogtle Electric Generating Plant

RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Gaseous Effluents - Ground Level Releases

Unit: Site
Starting: 1-Jan-2008 Ending: 31-Dec-2008

Batch Mode

Nuclides Released	Unit	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter
Fission Gases					
Ar-41	Curies	0.00E+00	0.00E+00	6.90E-04	0.00E+00
Xe-133	Curies	1.76E-02	0.00E+00	5.21E-02	7.68E-02
Total For Period	**Curies**	**1.76E-02**	**0.00E+00**	**5.28E-02**	**7.68E-02**
Iodines					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Particulates					
Co-58	Curies	0.00E+00	0.00E+00	1.10E-05	1.62E-05
Total For Period	**Curies**	**0.00E+00**	**0.00E+00**	**1.10E-05**	**1.62E-05**
Tritium					
H-3	Curies	9.03E-02	0.00E+00	1.05E-03	1.02E-03
Gross Alpha					
No Nuclides Found	Curies	0.00E+00	0.00E+00	0.00E+00	0.00E+00

If Not Detected, Nuclide is Not Reported. Zeroes in this table indicates that no radioactivity was present at detectable levels.
See Table 2-6 for typical minimum detectable concentrations.

Table 2-4A

Vogtle Electric Generating Plant
RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Air Doses Due to Gaseous Releases

Unit: 1
Starting: 1-Jan-2008 Ending: 31-Dec-2008

Cumulative Doses Per Quarter

Type of Radiation	ODCM Limit	Units	1ST Qtr	% ODCM	2ND Qtr	% ODCM	3RD Qtr	% ODCM	4TH Qtr	% ODCM
Gamma Air	5.00E+00	mRad	9.15E-06	1.83E-04	1.13E-04	2.26E-03	1.02E-05	2.03E-04	1.14E-05	2.28E-04
Beta Air	1.00E+01	mRad	7.04E-06	7.04E-05	4.04E-05	4.04E-04	3.63E-06	3.63E-05	4.32E-06	4.32E-05

Cumulative Doses Per Year

Type of Radiation	ODCM Limit	Units	Year to End Date	% ODCM	Receptor	Limit
Gamma Air	1.00E+01	mRad	1.44E-04	1.44E-03	Site Boundary / Child	Air Dose Gamma Annual 1.21
Beta Air	2.00E+01	mRad	5.54E-05	2.77E-04	Site Boundary / Child	Air Dose Beta Annual 1.21

Table 2-4B

Vogtle Electric Generating Plant
RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Air Doses Due to Gaseous Releases

Unit: 2
Starting: 1-Jan-2008 Ending: 31-Dec-2008

Cumulative Doses Per Quarter

Type of Radiation	ODCM Limit	Units	1ST Qtr	% ODCM	2ND Qtr	% ODCM	3RD Qtr	% ODCM	4TH Qtr	% ODCM
Gamma Air	5.00E+00	mRad	6.94E-04	1.39E-02	7.25E-04	1.45E-02	2.32E-03	4.63E-02	5.18E-04	1.04E-02
Beta Air	1.00E+01	mRad	1.86E-03	1.86E-02	1.93E-03	1.93E-02	5.31E-03	5.31E-02	1.18E-03	1.18E-02

Cumulative Doses Per Year

Type of Radiation	ODCM Limit	Units	Year to End Date	% ODCM	Receptor	Limit
Gamma Air	1.00E+01	mRad	4.25E-03	4.25E-02	Site Boundary / Child	Air Dose Gamma Annual 1.21
Beta Air	2.00E+01	mRad	1.03E-02	5.14E-02	Site Boundary / Child	Air Dose Beta Annual 1.21

Table 2-4C

Vogtle Electric Generating Plant
RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Air Doses Due to Gaseous Releases

Unit: Site
Starting: 1-Jan-2008 Ending: 31-Dec-2008

Cumulative Doses Per Quarter

Type of Radiation	ODCM Limit	Units	1ST Qtr	% ODCM	2ND Qtr	% ODCM	3RD Qtr	% ODCM	4TH Qtr	% ODCM
Gamma Air	5.00E+00	mRad	7.03E-04	1.41E-02	8.38E-04	1.68E-02	2.33E-03	4.65E-02	5.29E-04	1.06E-02
Beta Air	1.00E+01	mRad	1.87E-03	1.87E-02	1.97E-03	1.97E-02	5.31E-03	5.31E-02	1.19E-03	1.19E-02

Cumulative Doses Per Year

Type of Radiation	ODCM Limit	Units	Year to End Date	% ODCM	Receptor	Limit
Gamma Air	1.00E+01	mRad	4.40E-03	4.40E-02	Site Boundary / Child	Air Dose Gamma Annual 1.21
Beta Air	2.00E+01	mRad	1.03E-02	5.17E-02	Site Boundary / Child	Air Dose Beta Annual 1.21

Table 2-5A

Vogtle Electric Generating Plant
RADIOACTIVE EFFLUENT RELEASE REPORT - 2008

Doses To A Member Of The Public Due To Radioiodines, Tritium, and Particulates in Gaseous Releases

Unit: 1
Starting: 1-Jan-2008 Ending: 31-Dec-2008

Cumulative Doses Per Quarter

Organ	ODCM Limit	Units	1ST Qtr	% ODCM	2ND Qtr	% ODCM	3RD Qtr	% ODCM	4TH Qtr	% ODCM
Bone	7.50E+00	mRem	2.26E-08	3.02E-07	1.03E-06	1.37E-05	2.48E-07	3.31E-06	3.75E-07	4.99E-06
GI-Lli	7.50E+00	mRem	5.57E-05	7.43E-04	4.15E-05	5.54E-04	7.09E-05	9.45E-04	2.87E-05	3.83E-04
Kidney	7.50E+00	mRem	5.57E-05	7.43E-04	4.15E-05	5.53E-04	7.09E-05	9.45E-04	2.87E-05	3.83E-04
Liver	7.50E+00	mRem	5.57E-05	7.43E-04	4.15E-05	5.53E-04	7.09E-05	9.45E-04	2.87E-05	3.83E-04
Lung	7.50E+00	mRem	5.57E-05	7.43E-04	4.15E-05	5.53E-04	7.09E-05	9.45E-04	2.87E-05	3.83E-04
Thyroid	7.50E+00	mRem	6.21E-05	8.28E-04	4.15E-05	5.53E-04	7.09E-05	9.45E-04	2.99E-05	3.99E-04
Total Body	7.50E+00	mRem	5.57E-05	7.43E-04	4.15E-05	5.53E-04	7.09E-05	9.45E-04	2.87E-05	3.83E-04

Cumulative Doses per Year

Organ	ODCM Limit	Units	Year to Ending Date	% ODCM	Receptor	Limit
Bone	1.500E+01	mRem	1.671E-06	1.114E-05	Maximum Individual / Child	Iodine/Part Dose Annual 1.21
GI-Lli	1.500E+01	mRem	1.969E-04	1.312E-03	Maximum Individual / Child	Iodine/Part Dose Annual 1.21
Kidney	1.500E+01	mRem	1.968E-04	1.312E-03	Maximum Individual / Child	Iodine/Part Dose Annual 1.21
Liver	1.500E+01	mRem	1.968E-04	1.312E-03	Maximum Individual / Child	Iodine/Part Dose Annual 1.21
Lung	1.500E+01	mRem	1.968E-04	1.312E-03	Maximum Individual / Child	Iodine/Part Dose Annual 1.21
Thyroid	1.500E+01	mRem	2.044E-04	1.363E-03	Maximum Individual / Child	Iodine/Part Dose Annual 1.21
Total Body	1.500E+01	mRem	1.968E-04	1.312E-03	Maximum Individual / Child	Iodine/Part Dose Annual 1.21

Table 2-5B

Vogtle Electric Generating Plant
RADIOACTIVE EFFLUENT RELEASE REPORT - 2008

Doses To A Member Of The Public Due To Radioiodines, Tritium, and Particulates in Gaseous Releases

Unit: 2
Starting: 1-Jan-2008 Ending: 31-Dec-2008

Cumulative Doses Per Quarter

Organ	ODCM Limit	Units	1ST Qtr	% ODCM	2ND Qtr	% ODCM	3RD Qtr	% ODCM	4TH Qtr	% ODCM
Bone	7.50E+00	mRem	0.00E+00	0.00E+00	2.14E-07	2.86E-06	8.44E-07	1.13E-05	6.64E-07	8.85E-06
GI-Lli	7.50E+00	mRem	1.25E-06	1.67E-05	1.19E-05	1.59E-04	7.95E-05	1.06E-03	3.14E-05	4.19E-04
Kidney	7.50E+00	mRem	1.25E-06	1.67E-05	1.19E-05	1.59E-04	7.91E-05	1.05E-03	3.07E-05	4.10E-04
Liver	7.50E+00	mRem	1.25E-06	1.67E-05	1.19E-05	1.59E-04	7.92E-05	1.06E-03	3.08E-05	4.11E-04
Lung	7.50E+00	mRem	1.25E-06	1.67E-05	1.19E-05	1.59E-04	7.93E-05	1.06E-03	3.11E-05	4.14E-04
Thyroid	7.50E+00	mRem	1.25E-06	1.67E-05	1.19E-05	1.59E-04	8.29E-05	1.11E-03	3.41E-05	4.54E-04
Total Body	7.50E+00	mRem	1.25E-06	1.67E-05	1.19E-05	1.59E-04	7.93E-05	1.06E-03	3.11E-05	4.14E-04

Cumulative Doses per Year

Organ	ODCM Limit	Units	Year to Ending Date	% ODCM	Receptor	Limit
Bone	1.500E+01	mRem	1.723E-06	1.148E-05	Maximum Individual / Child	Iodine/Part Dose Annual 1.21
GI-Lli	1.500E+01	mRem	1.241E-04	8.274E-04	Maximum Individual / Child	Iodine/Part Dose Annual 1.21
Kidney	1.500E+01	mRem	1.230E-04	8.197E-04	Maximum Individual / Child	Iodine/Part Dose Annual 1.21
Liver	1.500E+01	mRem	1.231E-04	8.209E-04	Maximum Individual / Child	Iodine/Part Dose Annual 1.21
Lung	1.500E+01	mRem	1.235E-04	8.235E-04	Maximum Individual / Child	Iodine/Part Dose Annual 1.21
Thyroid	1.500E+01	mRem	1.301E-04	8.675E-04	Maximum Individual / Child	Iodine/Part Dose Annual 1.21
Total Body	1.500E+01	mRem	1.236E-04	8.237E-04	Maximum Individual / Child	Iodine/Part Dose Annual 1.21

Table 2-5C

Vogtle Electric Generating Plant
RADIOACTIVE EFFLUENT RELEASE REPORT - 2008

Doses To A Member Of The Public Due To Radioiodines, Tritium, and Particulates in Gaseous Releases

Unit: Site
Starting: 1-Jan-2008 Ending: 31-Dec-2008

Cumulative Doses Per Quarter

Organ	ODCM Limit	Units	1ST Qtr	% ODCM	2ND Qtr	% ODCM	3RD Qtr	% ODCM	4TH Qtr	% ODCM
Bone	7.50E+00	mRem	2.26E-08	3.02E-07	1.24E-06	1.65E-05	1.09E-06	1.46E-05	1.04E-06	1.38E-05
GI-Lli	7.50E+00	mRem	5.70E-05	7.60E-04	5.34E-05	7.12E-04	1.50E-04	2.01E-03	6.01E-05	8.01E-04
Kidney	7.50E+00	mRem	5.70E-05	7.60E-04	5.34E-05	7.12E-04	1.50E-04	2.00E-03	5.94E-05	7.92E-04
Liver	7.50E+00	mRem	5.70E-05	7.60E-04	5.34E-05	7.12E-04	1.50E-04	2.00E-03	5.95E-05	7.94E-04
Lung	7.50E+00	mRem	5.70E-05	7.59E-04	5.34E-05	7.12E-04	1.50E-04	2.00E-03	5.98E-05	7.97E-04
Thyroid	7.50E+00	mRem	6.34E-05	8.45E-04	5.34E-05	7.12E-04	1.54E-04	2.05E-03	6.40E-05	8.53E-04
Total Body	7.50E+00	mRem	5.70E-05	7.60E-04	5.34E-05	7.12E-04	1.50E-04	2.00E-03	5.98E-05	7.97E-04

Cumulative Doses per Year

Organ	ODCM Limit	Units	Year to Ending Date	% ODCM	Receptor	Limit
Bone	1.500E+01	mRem	3.393E-06	2.262E-05	Maximum Individual / Child	Iodine/Part Dose Annual 1.21
GI-Lli	1.500E+01	mRem	3.210E-04	2.140E-03	Maximum Individual / Child	Iodine/Part Dose Annual 1.21
Kidney	1.500E+01	mRem	3.198E-04	2.132E-03	Maximum Individual / Child	Iodine/Part Dose Annual 1.21
Liver	1.500E+01	mRem	3.199E-04	2.133E-03	Maximum Individual / Child	Iodine/Part Dose Annual 1.21
Lung	1.500E+01	mRem	3.203E-04	2.135E-03	Maximum Individual / Child	Iodine/Part Dose Annual 1.21
Thyroid	1.500E+01	mRem	3.345E-04	2.230E-03	Maximum Individual / Child	Iodine/Part Dose Annual 1.21
Total Body	1.500E+01	mRem	3.204E-04	2.136E-03	Maximum Individual / Child	Iodine/Part Dose Annual 1.21

Table 2-6
Vogtle Electric Generating Plant
RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
MINIMUM DETECTABLE CONCENTRATIONS - GASEOUS SAMPLE ANALYSES

Starting: 1-Jan-2008 Ending: 31-Dec-2008

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

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

* Based on an estimated sample volume of 5.7E+08 ml.

Table 2-7A

Vogtle Electric Generating Plant

RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Gaseous Effluents - Batch Release Summary

Unit: 1
Starting: 1-Jan-2008 Ending: 31-Dec-2008

Gaseous Releases	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Year Totals
1. Number of batch releases		45	35	36	36	152
2. Total time period for batch releases	(Minutes)	4.27E+04	4.38E+04	2.30E+03	2.55E+03	9.13E+04
3. Maximum time period for a batch release	(Minutes)	1.01E+04	1.01E+04	1.12E+02	1.40E+02	1.01E+04
4. Average time period for a batch release	(Minutes)	9.49E+02	1.25E+03	6.40E+01	7.08E+01	6.01E+02
5. Minimum time period for a batch release	(Minutes)	1.00E+00	1.00E+01	3.40E+01	2.10E+01	1.00E+00

Table 2-7B

Vogtle Electric Generating Plant

RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Gaseous Effluents - Batch Release Summary

Unit: 2
Starting: 1-Jan-2008 Ending: 31-Dec-2008

Gaseous Releases	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Year Totals
1. Number of batch releases		21	16	51	34	122
2. Total time period for batch releases	(Minutes)	1.80E+04	3.69E+03	7.44E+04	3.90E+04	1.35E+05
3. Maximum time period for a batch release	(Minutes)	7.91E+03	1.24E+03	8.08E+03	4.56E+03	8.08E+03
4. Average time period for a batch release	(Minutes)	8.57E+02	2.30E+02	1.46E+03	1.15E+03	1.11E+03
5. Minimum time period for a batch release	(Minutes)	3.50E+01	5.00E+00	9.00E+00	1.00E+00	1.00E+00

Table 2-7C

Vogtle Electric Generating Plant

RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Gaseous Effluents - Batch Release Summary

Unit: Site
Starting: 1-Jan-2008 Ending: 31-Dec-2008

Gaseous Releases	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Year Totals
1. Number of batch releases		66	51	87	70	274
2. Total time period for batch releases	(Minutes)	6.07E+04	4.74E+04	7.67E+04	4.16E+04	2.26E+05
3. Maximum time period for a batch release	(Minutes)	1.01E+04	1.01E+04	8.08E+03	4.56E+03	1.01E+04
4. Average time period for a batch release	(Minutes)	9.20E+02	9.30E+02	8.82E+02	5.94E+02	8.26E+02
5. Minimum time period for a batch release	(Minutes)	1.00E+00	5.00E+00	9.00E+00	1.00E+00	1.00E+00

Table 2-8A

Vogtle Electric Generating Plant

RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Gaseous Effluents – Abnormal Release Summary

Unit: 1
Starting: 1-Jan-2008 Ending: 31-Dec-2008

Gaseous Releases	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Year Totals
1. Number of Releases		0	0	0	0	0
2. Total Time For All Releases	(Minutes)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3. Maximum Time For A Release	(Minutes)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4. Average Time For A Release	(Minutes)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
5. Minimum Time For A Release	(Minutes)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
6. Total activity for all releases	(Curies)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Table 2-8B

Vogtle Electric Generating Plant

RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Gaseous Effluents – Abnormal Release Summary

Unit: 2

Starting: 1-Jan-2008 Ending: 31-Dec-2008

Gaseous Releases	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Year Totals
1. Number of Releases		0	0	0	0	0
2. Total Time For All Releases	(Minutes)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3. Maximum Time For A Release	(Minutes)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4. Average Time For A Release	(Minutes)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
5. Minimum Time For A Release	(Minutes)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
6. Total activity for all releases	(Curies)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Table 2-8C

Vogtle Electric Generating Plant

RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Gaseous Effluents - Abnormal Release Summary

Unit: Site
Starting: 1-Jan-2008 Ending: 31-Dec-2008

Gaseous Releases	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Year Totals
1. Number of Releases		0	0	0	0	0
2. Total Time For All Releases	(Minutes)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3. Maximum Time For A Release	(Minutes)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4. Average Time For A Release	(Minutes)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
5. Minimum Time For A Release	(Minutes)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
6. Total activity for all releases	(Curies)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

3.0 Solid Waste

3.1 Regulatory Requirements

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

3.1.1 Solid Radioactive Waste System

10.2.1 Process Control Program (PCP)

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

3.1.2 Reporting Requirements

12.1 PCP states in part:

The Radioactive Effluent Release Report, submitted in accordance with Technical Specification 5.6.3, shall include a summary of the quantities of solid radwaste released from the units, as outlined in Regulatory Guide 1.21.

3.2 Solid Waste Data

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

Table 3-1

Vogtle Electric Generating Plant
RADIOACTIVE EFFLUENT AND WASTE DISPOSAL REPORT - 2008
SOLID WASTE AND IRRADIATED FUEL SHIPMENTS
Units 1 and 2

JANUARY 1, 2008 THROUGH JUNE 30, 2008

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

1. Type of waste	Unit	6-month Period	Est. Total Error, %
a. Spent resins, filter sludges, evaporator bottoms, etc.	m3	NONE	
	Ci	NONE	N/A
b. Dry compressible waste, contaminated equip, etc.	m3	55.0	
	Ci	212.5	40
c. Irradiated components, control rods, etc.	m3	NONE	
	Ci	NONE	N/A
d. Other (describe)	m3	NONE	
	Ci	NONE	N/A

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

a.	N/A	%	N/A
	N/A	%	N/A
	N/A	%	N/A
	N/A	%	N/A
b.	Fe-55	%	47.70
	Ni-63	%	18.63
	Co-60	%	12.79
	All others	%	68.58
c.	N/A	%	N/A
	N/A	%	N/A
	N/A	%	N/A
	N/A	%	N/A
d.	N/A	%	N/A
	N/A	%	N/A

3. Solid Waste Disposition

Number of Shipments	Mode of Transportation	Destination
3	Tractor and Trailer, Cask	Studsvik, Johnson City, TN
8	Tractor and Trailer	Duratek, Oak Ridge, TN

TABLE 3-1
Vogtle Electric Generating Plant
RADIOACTIVE EFFLUENT AND WASTE DISPOSAL REPORT - 2008
SOLID WASTE AND IRRADIATED FUEL SHIPMENTS
Units 1 and 2

JANUARY 1, 2008 THROUGH JUNE 30, 2008

B. IRRADIATED FUEL SHIPMENTS (Disposition)

Number of Shipments	Mode of Transportation	Destination
None	None	None

ADDITIONAL INFORMATION REQUIRED BY ODCM:

Shipments Sent Directly to Disposal at Barnwell, SC.

Shipment No.	Waste Class	Type Container	Shipping Class	Solidification Agent	Volume (direct disposal only)
NONE					

Shipments to a Waste Processor:

Shipment No.	Waste Class	Type Container	Shipping Class	Solidification Agent	Processor
RVRS-08-001	B	USA DOT 7A Type A	LSA II	None Used	Studsvik
RVRS-08-002	A	Excepted Package	Limited Quantity	None Used	Duratek
RVRS-08-003	A	Excepted Package	LSA I	None Used	Duratek
RVRS-08-004	B	USA DOT 7A Type A	LSA II	None Used	Studsvik
RVRS-08-005	A	Excepted Package	LSA I	None Used	Duratek
RVRS-08-006	A	Expected Package	Limited Quantity	None Used	Duratek
RVRS-08-007	A	Excepted Package	LSA I	None Used	Duratek
RVRS-08-008	B	USA DOT 7A Type A	LSA II	None Used	Studsvik
RVRS-08-009	A	Excepted Package	LSA I	None Used	Duratek
RVRS-08-010	A	Excepted Package	LSA II	None Used	Duratek
RVRS-08-011	A	Excepted Package	Limited Quantity	None Used	Duratek

TABLE 3-1
Vogtle Electric Generating Plant
RADIOACTIVE EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT - 2008
SOLID WASTE AND IRRADIATED FUEL SHIPMENTS
Units 1 and 2

JULY 1, 2008 THROUGH DECEMBER 31, 2008

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

1. Type of waste	Unit	6-month Period	Est. Total Error, %
a. Spent resins, filter sludges, evaporator bottoms, etc.	m3 Ci	NONE NONE	N/A
b. Dry compressible waste, contaminated equip, etc.	m3 Ci	41.8 11.45	40
c. Irradiated components, control rods, etc.	m3 Ci	NONE NONE	N/A
d. Other (describe)	m3 Ci	NONE NONE	N/A

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

a.	N/A	%	N/A
	N/A	%	N/A
	N/A	%	N/A
	N/A	%	N/A
b.	Fe-55	%	71.99
	Ni-63	%	20.00
	Co-60	%	3.128
	All others	%	4.884
c.	N/A	%	N/A
	N/A	%	N/A
	N/A	%	N/A
	N/A	%	N/A
d.	N/A	%	N/A
	N/A	%	N/A

3. Solid Waste Disposition

Number of Shipments	Mode of Transportation	Destination
1	Cask/ Tractor/ Trailer	Energy Solutions, Oak Ridge, TN
8	Tractor / Trailer	Energy Solutions, Oak Ridge, TN

TABLE 3-1
Vogtle Electric Generating Plant
RADIOACTIVE EFFLUENT AND WASTE DISPOSAL REPORT - 2008
SOLID WASTE AND IRRADIATED FUEL SHIPMENTS
Units 1 and 2

July 1, 2008 THROUGH December 31, 2008

B. IRRADIATED FUEL SHIPMENTS (Disposition)

Number of Shipments	Mode of Transportation	Destination
None	None	None

ADDITIONAL INFORMATION REQUIRED BY ODCM:

Shipments Sent Directly to Disposal at Barnwell, SC.

Shipment No.	Waste Class	Type Container	Shipping Class	Solidification Agent	Volume (direct disposal only)
NONE					

Shipments to a Waste Processor:

Shipment No.	Waste Class	Type Container	Shipping Class	Solidification Agent	Processor
RVRS-08-012	AU	Expected Package	Limited Quantity	None Used	Energy Solutions
RVRS-08-013	AU	Expected Package	LSA I	None Used	Energy Solutions
RVRS-08-014	AS	Excepted Package	LSA II	None Used	Energy Solutions
RVRS-08-015	AU	Expected Package	LSA I	None Used	Energy Solutions
RVRS-08-016	AU	Expected Package	Limited Quantity	None Used	Energy Solutions
RVRS-08-017	AU	Excepted Package	LSA I	None Used	Energy Solutions
RVRS-08-018	AU	Expected Package	Limited Quantity	None Used	Energy Solutions
RVRS-08-019	AU	Excepted Package	LSA II	None Used	Energy Solutions
RVRS-08-020	AU	Excepted Package	Limited Qunatity	None Used	Energy Solutions

4.0 Doses to Members of the Public Inside the Site Boundary

4.1 Regulatory Requirements

ODCM 7.2.2.3 states in part:

"The report shall also include assessment of the radiation doses from radioactive liquid and gaseous effluents to MEMBERS OF THE PUBLIC due to their activities inside the SITE BOUNDARY during the report period; this assessment must be performed in accordance with Chapter 6. All assumptions used in making these assessments (i.e., specific activity, exposure time, and location) shall be included in the report".

4.2 Demonstration of Compliance

The location of concern within the site boundary is the Visitors Center. The activities at the Visitor Center consist of occasional attendance at meetings and/or short visits for informational purposes.

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

The source term is listed in Tables 2-2A, and 2-2B for the mixed mode releases. Similarly, it is listed in tables 2-3A and 2-3B for the ground level releases.

The maximum doses in units of mrem to a MEMBER OF THE PUBLIC due to their activities inside the site boundary during the reporting period are presented in Table 4-1.

Table 4-1

Vogtle Electric Generating Plant

RADIOACTIVE EFFLUENT RELEASE REPORT - 2008
Doses to a Member of the Public Due to Activities Inside the Site Boundary

Unit: Site
Starting: 1-Jan-2008 Ending: 31-Dec-2008

Location Name: Visitor's Center Receptor
Distance (kilometers): 4.47E-01
Sector: N
Occupancy Factor: 4.57E-04

Age Group: Child

Ground Level Release	Noble Gas	X/Q (sec/m3): 5.93E-06	
Ground Level Release	Particulate and Radioiodine	X/Q (sec/m3): 5.58E-06	D/Q (m-2): 2.28E-08
Mixed Mode Release	Noble Gas	X/Q (sec/m3): 7.12E-07	
Mixed Mode Release	Particulate and Radioiodine	X/Q (sec/m3): 6.74E-07	D/Q (m-2): 5.77E-09

	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Year
Bone	mRem	5.25E-11	6.18E-12	1.39E-09	2.03E-09	3.48E-09
Liver	mRem	5.42E-08	8.56E-08	9.22E-08	3.37E-08	2.66E-07
Total Body	mRem	5.42E-08	8.56E-08	9.22E-08	3.37E-08	2.66E-07
Thyroid	mRem	5.71E-08	8.56E-08	9.26E-08	3.41E-08	2.69E-07
Kidney	mRem	5.42E-08	8.56E-08	9.22E-08	3.37E-08	2.66E-07
Lung	mRem	5.42E-08	8.56E-08	9.32E-08	3.52E-08	2.68E-07
GI-Lli	mRem	5.42E-08	8.56E-08	9.23E-08	3.38E-08	2.66E-07
NG Total Body	mRem	4.20E-07	5.08E-07	1.42E-06	3.25E-07	2.67E-06
Whole Body Dose	mRem	4.74E-07	5.93E-07	1.51E-06	3.59E-07	2.94E-06

5.0 Total Dose from Uranium Fuel Cycle (40CFR190)

5.1 Regulatory Requirements

ODCM 5.1 states in part that 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.

5.2 Demonstration of Compliance

The requirements of 40CFR190 were met.

6.0 Meteorological Data

ODCM 7.2.2.2 states in part:

The Radioactive Effluent Release Report 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 of wind speed, wind direction, atmospheric stability, and precipitation (if measured) on magnetic tape; or in the form of joint frequency distributions of wind speed, wind direction and atmospheric stability.

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

7.0 Program Deviations

7.1 Inoperable Liquid or Gaseous Effluent Monitoring Instrumentation

7.1.1 Regulatory Requirement

ODCM 7.2.2.6 states in part that the report shall include deviations from the liquid and gaseous effluent monitoring instrumentation operability requirements included in Sections 2.1.1 and 3.1.1, respectively. The report shall include an explanation as to why the inoperability of liquid or gaseous effluent monitoring instrumentation was not corrected within the specified time requirement.

7.1.2 Description of Deviations

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

7.2 Tanks Exceeding Curie Content Limits

7.2.1 Regulatory Requirements

ODCM 7.2.2.6 states in part that the report shall include a description of the events leading to liquid holdup tanks or gas storage tanks exceeding the limits of Technical Specifications 5.5.12.

7.2.2 Description of Deviations

Limits for outdoor liquid hold-up tanks used for radioactive liquids were not exceeded during this reporting period.
Limits for the gas storage tanks were not exceeded during this reporting period.

8.0 Changes to the Vogtle Electric Generating Plant Offsite Dose Calculation Manual (ODCM)

8.1 Regulatory Requirements

ODCM 7.2.2.5 states in part that changes to the ODCM shall be submitted with the Radioactive Effluent Release Report. These changes may be due to changes in the radiological environmental monitoring program sampling locations as required by ODCM 4.1.1.2.3 or changes to dose calculation locations as required by ODCM 4.1.2.2.2. Land uses and dose calculation locations within five miles of VEGP must be determined by a land use census as required by ODCM 4.1.2.

8.2 Description of Changes

Changes were made to the Vogtle Electric Generating Plant ODCM for the period January 1, 2008 through December 31, 2008. Revision 24 became effective May 2008. A complete copy of the ODCM will be included with this report with changes identified by bars in the right hand margin of the document. Changes were made to Table 2-1 "Radioactive Liquid Effluent Monitoring Instrumentation", Table 3-7 "Attributes of the Controlling Receptor", Table 4-1 "REMP Samples", Figure 4-5 Groundwater Monitoring Locations, Figure 4-5 "Groundwater Monitoring Wells", Table 4-4 Radiological Monitoring Locations and Figure 4-2 Terrestrial Stations and Aquatic Stations, 0-5 miles..

The Land Use Census was conducted November 11, 2008 by Georgia Power Company Environmental Lab personnel. Due to the results of the census for 2008, no changes will be made to the REMP sampling locations and the dose calculation locations.

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

9.1 Regulatory Requirements

ODCM 7.2.2.7 states in part:

As required by Sections 2.1.5 and 3.1.6, licensee initiated MAJOR CHANGES TO RADIOACTIVE WASTE TREATMENT SYSTEMS (liquid and gaseous) shall be reported to the Nuclear Regulatory Commission in the Radioactive Effluent Release Report covering the period in which the change was reviewed and accepted for implementation.

Note 1: In lieu of inclusion in the Radioactive Effluents Release Report, this same information may be submitted as part of the annual FSAR update.

PCP 12.1 states in part:

Licensee major initiated changes to the solid radioactive waste treatment system shall be reported to the Nuclear Regulatory Commission in the Radioactive Effluent Release Report for the period in which the change was implemented.

9.2 Description of Major Changes

Gaseous Radwaste System

There were no major changes to the gaseous radwaste systems in the 2008 assessment period.

Liquid Radwaste System

Major changes to the liquid radwaste facilities are those that contribute to significant changes in release; i.e., either decreases or increases in release volume or activity/dose.
This is to indicate that no major changes to the liquid radwaste systems occurred during the 2008 assessment period.

Solid Radwaste System

There were no major changes to the solid radwaste systems in the 2008 assessment period.