

**FLORIDA POWER & LIGHT COMPANY
ST. LUCIE UNITS 1 AND 2
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
JANUARY 1, 2010 THROUGH DECEMBER 31, 2010**

L-2011-064

**COMBINED ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
FOR THE PERIOD
JANUARY 1, 2010 THROUGH DECEMBER 31, 2010**

(57 PAGES)

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1.0 PROGRAM DESCRIPTION

Regulatory Limits

The ODCM Radiological Effluent Control limits applicable to the release of radioactive material in liquid and gaseous effluents are described in the following sections.

Fission and Activation Gases (Noble Gases)

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 less than or equal to 500 mrem/yr to the whole body and less than or equal to 3000 mrem/yr to the skin. 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 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.

Iodine-131, Iodine-133, Tritium, Carbon-14 and Radioactive Material in Particulate Form

The dose rate due to iodine-131, iodine-133, tritium and all radionuclides in particulate form with half lives greater than 8 days, released in gaseous effluents from the site to areas at and beyond the site boundary, shall be limited to less than or equal to 1500 mrem/yr to any organ.

The dose to a MEMBER OF THE PUBLIC from iodine-131, iodine-133, tritium, carbon-14 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 mrem to any organ, and
- b. During any calendar year: Less than or equal to 15 mrem to any organ.

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Liquid Effluents

The concentration of radioactive material released in liquid effluents to unrestricted areas shall be limited to 10 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 2.0E-4 $\mu\text{Ci/ml}$ total activity. 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.

Total Dose

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

Effluent Concentration Limits

Gaseous Effluents

For gaseous effluents, effluent concentration limits (ECL) values are not directly used in release rate calculations since the applicable limits are expressed in terms of dose rate at the site boundary.

Liquid Effluents

The values specified in 10 CFR Part 20, Appendix B, Table 2, Column 2 are used as the ECL for liquid radioactive effluents released to unrestricted areas. A value of 2.0E-04 $\mu\text{Ci/ml}$ is used as the ECL for dissolved and entrained noble gases in liquid effluents.

Measurements and Approximations of Total Radioactivity

Measurements of total radioactivity in liquid and gaseous radioactive effluents were accomplished in accordance with the sampling and analysis requirements of Tables 4.11-1 and 4.11-2, respectively, of the St. Lucie ODCM. Estimates of errors are in accordance with Methodology Section 4.4, of the ODCM.

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Liquid Radioactive Effluents

Each batch release was sampled and analyzed for gamma emitting radionuclides using gamma spectroscopy, prior to release. Composite samples were analyzed monthly and quarterly for tritium and gross alpha radioactivity in the onsite laboratory using liquid scintillation and air ion chamber counting techniques, respectively. Composite samples were analyzed quarterly for Sr-89, Sr-90, Fe-55 and C-14 by a contract laboratory. The results of the composite analyses from the previous month or quarter were used to estimate the quantities of these radionuclides in liquid effluents during the current month or quarter.

The total radioactivity in liquid effluent releases was determined from the measured and estimated concentrations of each radionuclide present and the total volume of the effluent released during periods of discharge.

Gaseous Radioactive Effluents

Each gaseous batch, the release was sampled and analyzed for radioactivity prior to release. For releases from Gas Decay Tanks, noble gas grab samples were analyzed for gamma emitting radionuclides using gamma spectroscopy. For releases from the Containment Buildings, samples were taken of noble gas and tritium grab samples, and analyzed for gamma emitting radionuclides prior to each release. The results of the analyses and the total volume of effluent released were used to determine the total amount of radioactivity released in the batch mode.

For continuous effluent release pathways, noble gas and tritium grab samples were collected and analyzed weekly for gamma emitting radionuclides by gamma spectroscopy and liquid scintillation counting techniques, respectively. Continuous release pathways were continuously sampled using radioiodine adsorbers and particulate filters. The radioiodine adsorbers and particulate filters were analyzed weekly for gamma emitting radionuclides using gamma spectroscopy. Results of the noble gas and tritium grab samples, radioiodine adsorber and particulate filter analyses from the current week and the average effluent flow rate for the previous week were used to determine the total amount of radioactivity released in the continuous mode. Monthly composites of particulate filters were analyzed for gross alpha activity, in the onsite laboratory using the air ion chamber counting technique. Quarterly composites of particulate filters were analyzed for Sr-89 and Sr-90 by a contract laboratory.

Meteorological Monitoring Program

In accordance with ODCM Administrative Control 3.11.2.6.b., a summary of hourly meteorological data, collected during 2010, is retained onsite. This data is available for review by the NRC upon request. During 2010, the goal of >90% joint data recovery was met.

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Carbon-14 Dose Estimation

The estimate of carbon-14 (C-14) released from the St. Lucie Nuclear Plant was derived from the EPRI document, "Estimation of Carbon-14 in Nuclear Power Plant Gaseous Effluents", Report 1021106, issued December 2010.

The site specific source term values used in the St. Lucie calculations were taken from Section 4-28 of the report, and employed the proxy generation rate values for a Combustion Engineering reactor. The actual 2010 operating data for the units was employed for the calculations to derive the total curies released for each unit.

The total amount of C-14 released in 2010 for Unit 1 was 8.03 Ci, and the total amount of C-14 released in 2010 for Unit 2 was 10.12 Ci. The highest calculated dose is found to be "Bone Dose" to a "Child" through "Inhalation". The total combined dose, including C-14, through this pathway is 3.49E-02 mrem/yr.

Additionally, a "Child" consuming vegetables from the garden located at 4.25 miles in the SSW direction from the plant would have received a total combined "Bone Dose", including C-14, of 3.35E-02 mrem/yr.

Using the same release values, the dose to a visitor on site (Adult Lifeguard) is found to be 8.04E-03 mrem/yr.

All C-14 dose calculations are based on Regulatory Guide 1.109 values.

This is a small fraction of the 1 mrem annual whole body dose received to the average US citizen from natural occurring Carbon-14, primarily generated through cosmogenesis in the terrestrial biosphere. (Reference National Council of Radiation Protection Report 45, Natural Background Radiation in the United States.)

Note: Carbon-14 values are provided on this page and are not included in the Tables in Section 3.

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2.0 SUPPLEMENTAL INFORMATION

2.1 Abnormal Releases or Abnormal Discharges

One abnormal discharge from the site occurred on April 6, 2010. While Operations was re-aligning the Waste Gas Treatment System to the Plant Vent, a relief valve for the 1C Gas Decay Tank (GDT) lifted, resulting in a pressure loss of 39 pounds in a four hour period. Investigation revealed the most likely cause of the event to be leakage from V6701, the isolation valve for the gas analyzer from the 1C GDT relief valve.

Corrective actions included installation of a new bonnet and valve diaphragm. The 1C GDT passed post maintenance testing and was subsequently returned to service. No additional leaks have been identified since its return to service.

Release estimates are as follows:

Nuclide	uCi/cc concentration	uCi released
Kr-85m	2.11E-07	2.6
Xe-131m	3.87E-06	46.9
Xe-133m	1.60E-05	194.0
Xe-133	6.32E-04	7661.0
Xe-135	1.01E-04	1224.0
C-14	8.01E-09	0.1

Maximum Infant Dose for NW Site Boundary

Total Body - mRem	Skin - mRem	Gamma Air - mRad	Beta Air - mRad
2.29E-07	5.32E-07	2.60E-07	5.78E-07

2.2 Non-Routine Planned Discharges

No non-routine planned discharges were made during the report period.

2.3 Radioactive Waste Treatment System Changes

No changes were made to the waste treatment system during the report period.

2.4 Annual Land Use Census Changes

No changes were made to the land use census during the report period.

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2.5 Effluent Monitoring System Inoperability

The liquid radioactive waste discharge monitor and the Unit 1 gaseous waste discharge monitors were out of service for greater than 30 days in 2010. This was due to a plant change/modification (PC/M) to replace the Unit 1 containment airborne monitors, during the SL1-23 Refueling Outage. This PC/M required the electrical power to the radiation monitor cabinet in the Control Room be removed to provide a safe work environment for replacement of the monitors. The liquid radioactive waste discharge monitor and the Unit 1 gaseous waste discharge monitor were both returned to service after work was completed on the Unit 1 Containment Atmosphere Radiation Monitors.

2.6 Offsite Dose Calculation Manual Changes

One change was made to the St. Lucie ODCM during the report period. The change was to document an evaluation of potential tritium release from the east settling basin, located on site. The evaluation determined that liquid evaporation from the pond represents <1.0% of the total activity released via all gaseous release points, and does not qualify as a significant release point.

2.7 Process Control Program Changes

There were no changes to the Process Control Program during the report period.

2.8 Corrections to Previous Reports

The 2009 Annual Radioactive Effluent Report designated an isotope in the liquid effluent release tables as "Other". This isotope was actually nickel 63 (Ni-63). The "Other" designation conservatively reported the amount of Ni-63 released from the site.

2.9 Other

Two releases were made from the South Settling Basin to the Intake Canal during the year to lower the water level due to approaching severe weather. The first release took place during June, 2010, and the second took place during August, 2010. Both releases were analyzed according to the ODCM and site procedural requirements and were found to have no alpha, gamma, tritium or hard to detect isotopes. The volume for each release was estimated to be 4.32E06 gallons.

2.10 Groundwater Protection Program

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3.0 TABLES

3.1 Gaseous Effluents

3.2 Liquid Effluents

3.3 Solid Waste Storage and Shipments

3.4 Dose Assessments

Dose to a Member of the Public from Activities Inside the Site Boundary Assessment of radiation dose from radioactive effluents to MEMBERS OF THE PUBLIC due to their activities inside the SITE BOUNDARY assumes the VISITOR to be a lifeguard at the Walton Rocks Beach recreation area. The visitor is assumed to be onsite for 6 hours per day for 312 days per year at a distance of 1.6 kilometers in the South East Sector. The VISITOR received exposure from each of the two reactors on the site. Actual Met Data was used to calculate Visitor Dose for Calendar Year 2010.

VISITOR DOSE RESULTS FOR CALENDAR YEAR 2010 were:

Noble Gas Dose	mrad
Gamma Air Dose	3.80E-03
Beta Air Dose	2.24E-03

Gas, Particulate, Iodine, Carbon Dose	mrem
Bone	9.81E-03
Liver	1.77E-03
Thyroid	1.81E-03
Kidney	1.77E-03
Lung	2.24E-03
GI-LLI	1.80E-03
Total Body	7.17E-03

Table 5A and 5B - Regulatory Guide 1.21 (2010)
Batch Release Summary
Unit: Site

A. Liquid Releases	Units	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Year Totals
1. Number of batch releases	:	19	26	14	20	79
2. Total time period for Batch releases	(Minutes):	9.65E+03	2.38E+04	2.56E+04	9.21E+03	6.82E+04
3. Maximum time period for a batch release	(Minutes):	6.93E+02	8.28E+03	1.76E+04	7.14E+02	1.76E+04
4. Average time period for a batch release	(Minutes):	5.08E+02	9.14E+02	1.83E+03	4.61E+02	8.64E+02
5. Minimum time period for a batch release	(Minutes):	3.77E+02	3.84E+02	3.75E+02	2.20E+02	2.20E+02
6. Average stream flow during periods of release of liquid Effluent into a flowing stream	(LPM) :	3.86E+06	1.64E+06	2.09E+06	3.88E+06	2.16E+06

B. Gaseous Releases	Units	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Year Totals
1. Number of batch releases	:	26	31	32	39	128
2. Total time period for batch releases	(Minutes):	1.83E+03	3.77E+03	2.31E+03	6.10E+03	1.40E+04
3. Maximum time period for a batch release	(Minutes):	3.30E+02	6.00E+02	2.85E+02	5.60E+02	6.00E+02
4. Average time period for a batch release	(Minutes):	7.04E+01	1.22E+02	7.23E+01	1.56E+02	1.10E+02
5. Minimum time period for a batch release	(Minutes):	3.50E+01	5.50E+01	5.90E+01	4.70E+01	3.50E+01

END OF BATCH RELEASE SUMMARY REPORT

Table 1A - Regulatory Guide (2010)
Gaseous Effluents - Summation Of All Releases
Unit: Site

Type of Effluent	Units	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	% Est. Total Error
A. Fission And Activation Gases						
1. Total Release	Curies :	1.73E+01	1.07E+01	1.16E+01	1.31E+01	
2. Average Release rate for period	uCi/sec :	2.19E+00	1.36E+00	1.47E+00	1.66E+00	
3. Percent of Applicable Limit	%	*	*	*	*	
B. Radioiodines						
1. Total Iodine-131	Curies :	1.10E-05	1.26E-05	1.84E-05	1.76E-05	
2. Average Release rate for period	uCi/sec :	1.40E-06	1.60E-06	2.33E-06	2.23E-06	
3. Percent of Applicable Limit	%	*	*	*	*	
C. Particulates						
1. Particulates (Half-Lives > 8 Days)	Curies :	1.99E-05	1.32E-05	6.56E-03	3.40E-06	
2. Average Release rate for period	uCi/sec :	2.52E-06	1.67E-06	8.32E-04	4.309E-07	
3. Percent of Applicable Limit	%	*	*	*	*	
D. Tritium						
1. Total Release	Curies :	5.39E-02	1.99E-01	3.53E-01	1.15E+01	
2. Average Release rate for period	uCi/sec :	6.83E-03	2.53E-02	4.47E-02	1.45E+00	
3. Percent of Applicable Limit	%	*	*	*	*	
E. Gross Alpha						
1. Total Release	Curies :	2.26E-06	1.34E-07	1.15E-07	2.00E-07	
2. Average Release rate for period	uCi/sec :	2.86E-07	1.70E-08	1.46E-08	2.54E-08	

* Applicable limits are expressed in terms of dose.

Table 1C*
Annual Radioactive Effluent Release Report (2010)
Gaseous Effluents - Ground Level Releases
Reactor Unit: Site

Nuclides Released	Unit	Continuous Mode			
		1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Fission Gases					
Ar-41	Curies	7.47E-01	0.00E+00	6.30E+00	1.01E+00
Kr-85m	Curies	1.70E-01	3.11E-02	1.41E-01	5.11E-02
Kr-85	Curies	1.03E+01	0.00E+00	0.00E+00	0.00E+00
Kr-87	Curies	2.21E-01	1.10E-01	0.00E+00	5.84E-01
Kr-88	Curies	0.00E+00	1.43E+00	7.00E-03	4.66E-01
Xe-131m	Curies	1.24E+00	2.05E+00	2.13E+00	6.65E+00
Xe-133m	Curies	0.00E+00	2.94E-01	1.46E+00	1.65E+00
Xe-133	Curies	6.97E-01	5.35E-02	0.00E+00	0.00E+00
Xe-135m	Curies	0.00E+00	0.00E+00	0.00E+00	1.72E+00
Xe-135	Curies	0.00E+00	1.75E-01	2.95E-01	0.00E+00
Xe-138	Curies	3.62E+00	2.77E+00	8.61E-01	0.00E+00
Total For Period	Curies	1.70E+01	6.92E+00	1.12E+01	1.21E+01
Iodines					
I-131	Curies	1.10E-05	1.26E-05	1.84E-05	1.76E-05
I-133	Curies	1.49E-04	1.86E-04	2.43E-04	2.51E-04
Total For Period	Curies	1.60E-04	1.99E-04	2.61E-04	2.69E-04

Particulates

Cr-51	Curies	0.00E+00	6.22E-07	4.50E-06	0.00E+00
Co-57	Curies	1.28E-05	1.90E-07	1.60E-07	0.00E+00
Co-58	Curies	9.43E-07	4.95E-06	0.00E+00	0.00E+00
Co-60	Curies	0.00E+00	0.00E+00	1.78E-06	0.00E+00
Cs-134	Curies	0.00E+00	0.00E+00	1.53E-08	0.00E+00
Cs-137	Curies	5.08E-07	7.30E-06	8.07E-07	3.40E-06
Ce-141	Curies	0.00E+00	1.37E-07	0.00E+00	0.00E+00
Ce-144	Curies	5.66E-06	0.00E+00	9.10E-07	0.00E+00
Total For Period	Curies	1.99E-05	1.32E-05	8.17E-06	3.40E-06

Tritium

H-3	Curies	0.00E+00	0.00E+00	0.00E+00	1.14E+01
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Gross Alpha

G-Alpha	Curies	2.26E-06	1.34E-07	1.15E-07	2.00E-07
Total For Period	Curies	2.26E-06	1.34E-07	1.15E-07	2.00E-07

Table 1C*
Annual Radioactive Effluent Release Report (2010)
Gaseous Effluents - Ground Level Releases
Reactor Unit: Site

Nuclides Released	Unit	Batch Mode			
		1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Fission Gases					
Ar-41	Curies	2.25E-01	3.19E+00	2.64E-01	3.51E-01
Kr-85m	Curies	1.58E-05	2.56E-06	0.00E+00	5.94E-05
Kr-85	Curies	1.43E-02	1.86E-02	2.01E-02	0.00E+00
Kr-87	Curies	1.37E-04	0.00E+00	3.02E-04	0.00E+00
Kr-88	Curies	1.88E-04	1.29E-04	0.00E+00	0.00E+00
Xe-131m	Curies	6.82E-04	3.11E-04	0.00E+00	2.70E-03
Xe-133m	Curies	2.80E-04	1.94E-04	4.42E-04	7.27E-03
Xe-133	Curies	7.58E-02	5.60E-01	8.05E-02	5.64E-01
Xe-135m	Curies	2.79E-04	5.72E-04	4.38E-04	4.90E-04
Xe-135	Curies	1.27E-03	4.19E-03	1.65E-03	4.49E-03
Xe-138	Curies	0.00E+00	5.65E-05	0.00E+00	6.85E-04
Total For Period	Curies	3.18E-01	3.77E+00	3.68E-01	9.31E-01
Iodines					
No Nuclides Found		N/A	N/A	N/A	N/A
Particulates					
Ag-110m	Curies	0.00E+00	0.00E+00	6.55E-03	0.00E+00
Total For Period	Curies	0.00E+00	0.00E+00	6.55E-03	0.00E+00
Tritium					
Batch Mode					
Nuclides Released	Unit	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
H-3	Curies	5.39E-02	1.99E-01	3.53E-01	1.05E-01
Gross Alpha					
No Nuclides Found		N/A	N/A	N/A	N/A

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

END OF ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

**Table 1A - Regulatory Guide (2010)
Gaseous Effluents - Summation Of All Releases
Unit: PSL1**

Type of Effluent	Units	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	% Est. Total Error
A. Fission And Activation Gases						
1. Total Release	Curies	: 2.53E+00	5.83E+00	5.97E+00	8.01E+00	
2. Average Release rate for period	uCi/sec	: 3.22E-01	7.39E-01	7.58E-01	1.02E+00	
3. Percent of Applicable Limit	%	*	*	*	*	
B. Radioiodines						
1. Total Iodine-131	Curies	: 2.14E-07	6.38E-07	0.00E+00	0.00E+00	
2. Average Release rate for period	uCi/sec	: 2.71E-08	8.10E-08	0.00E+00	0.00E+00	
3. Percent of Applicable Limit	%	*	*	*	*	
C. Particulates						
1. Particulates (Half-Lives > 8 Days)	Curies	: 1.96E-06	4.58E-06	7.20E-06	0.00E+00	
2. Average Release rate for period	uCi/sec	: 2.49E-07	5.81E-07	9.14E-07	0.000E+00	
3. Percent of Applicable Limit	%	*	*	*	*	
D. Tritium						
1. Total Release	Curies	: 0.00E+00	0.00E+00	0.00E+00	1.14E+01	
2. Average Release rate for period	uCi/sec	: 0.00E+00	0.00E+00	0.00E+00	1.45E+00	
3. Percent of Applicable Limit	%	*	*	*	*	
E. Gross Alpha						
1. Total Release	Curies	: 5.45E-08	8.84E-08	8.96E-08	1.11E-07	
2. Average Release rate for period	uCi/sec	: 6.92E-09	1.12E-08	1.14E-08	1.40E-08	

* Applicable limits are expressed in terms of dose.

Table 1C*
Annual Radioactive Effluent Release Report (2010)
Gaseous Effluents - Ground Level Releases
Reactor Unit: PSL1

Nuclides Released	Unit	Continuous Mode			
		1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Fission Gases					
Ar-41	Curies	7.47E-01	0.00E+00	4.22E+00	1.01E+00
Kr-85m	Curies	1.42E-01	0.00E+00	0.00E+00	0.00E+00
Kr-87	Curies	2.21E-01	0.00E+00	0.00E+00	0.00E+00
Kr-88	Curies	0.00E+00	0.00E+00	7.00E-03	4.66E-01
Xe-131m	Curies	0.00E+00	2.05E+00	1.25E-05	4.99E+00
Xe-133m	Curies	0.00E+00	2.94E-01	1.46E+00	1.32E+00
Xe-133	Curies	0.00E+00	5.35E-02	0.00E+00	0.00E+00
Xe-135	Curies	0.00E+00	0.00E+00	2.71E-01	0.00E+00
Xe-138	Curies	1.42E+00	0.00E+00	0.00E+00	0.00E+00
Total For Period	Curies	2.53E+00	2.39E+00	5.96E+00	7.78E+00
Iodines					
I-131	Curies	2.14E-07	6.38E-07	0.00E+00	0.00E+00
Total For Period	Curies	2.14E-07	6.38E-07	0.00E+00	0.00E+00
Particulates					
Cr-51	Curies	0.00E+00	0.00E+00	4.50E-06	0.00E+00
Co-58	Curies	9.43E-07	2.44E-06	0.00E+00	0.00E+00
Co-60	Curies	0.00E+00	0.00E+00	1.78E-06	0.00E+00
Cs-137	Curies	2.85E-07	2.14E-06	1.94E-08	0.00E+00
Ce-144	Curies	7.31E-07	0.00E+00	9.10E-07	0.00E+00
Total For Period	Curies	1.96E-06	4.58E-06	7.20E-06	0.00E+00
Tritium					
H-3	Curies	0.00E+00	0.00E+00	0.00E+00	1.14E+01

Gross Alpha

G-Alpha	Curies	5.45E-08	8.84E-08	8.96E-08	1.11E-07
Total For Period	Curies	5.45E-08	8.84E-08	8.96E-08	1.11E-07

Table 1C*
Annual Radioactive Effluent Release Report (2010)
Gaseous Effluents - Ground Level Releases
Reactor Unit: PSL1

Nuclides Released	Unit	Batch Mode			
		1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Fission Gases					
Ar-41	Curies	0.00E+00	2.96E+00	1.83E-04	1.17E-01
Kr-85m	Curies	0.00E+00	2.56E-06	0.00E+00	0.00E+00
Xe-131m	Curies	0.00E+00	4.69E-05	0.00E+00	6.30E-04
Xe-133m	Curies	0.00E+00	1.94E-04	0.00E+00	5.63E-04
Xe-133	Curies	0.00E+00	4.76E-01	1.52E-02	1.05E-01
Xe-135	Curies	0.00E+00	1.22E-03	1.11E-05	0.00E+00
Xe-138	Curies	0.00E+00	5.65E-05	0.00E+00	6.85E-04
Total For Period	Curies	0.00E+00	3.44E+00	1.54E-02	2.24E-01

Iodines					
No Nuclides Found		N/A	N/A	N/A	N/A

Particulates					
No Nuclides Found		N/A	N/A	N/A	N/A

Tritium					
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Nuclides Released	Unit	Batch Mode			
		1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
H-3	Curies	0.00E+00	0.00E+00	0.00E+00	4.70E-02

Gross Alpha					
No Nuclides Found		N/A	N/A	N/A	N/A

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

END OF ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

**Table 1A - Regulatory Guide (2010)
Gaseous Effluents - Summation Of All Releases
Unit: PSL2**

Type of Effluent	Units	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	% Est. Total Error
A. Fission And Activation Gases						
1. Total Release	Curies :	1.47E+01	4.86E+00	5.58E+00	5.05E+00	
2. Average Release rate for period	uCi/sec :	1.87E+00	6.16E-01	7.08E-01	6.40E-01	
3. Percent of Applicable Limit	%	*	*	*	*	
B. Radioiodines						
1. Total Iodine-131	Curies :	1.08E-05	1.20E-05	1.84E-05	1.76E-05	
2. Average Release rate for period	uCi/sec :	1.37E-06	1.52E-06	2.33E-06	2.23E-06	
3. Percent of Applicable Limit	%	*	*	*	*	
C. Particulates						
1. Particulates (Half-Lives > 8 Days)	Curies :	1.79E-05	8.62E-06	6.55E-03	3.40E-06	
2. Average Release rate for period	uCi/sec :	2.27E-06	1.09E-06	8.31E-04	4.309E-07	
3. Percent of Applicable Limit	%	*	*	*	*	
D. Tritium						
1. Total Release	Curies :	5.39E-02	1.99E-01	3.53E-01	5.75E-02	
2. Average Release rate for period	uCi/sec :	6.83E-03	2.53E-02	4.47E-02	7.29E-03	
3. Percent of Applicable Limit	%	*	*	*	*	
E. Gross Alpha						
1. Total Release	Curies :	2.20E-06	4.59E-08	2.57E-08	8.96E-08	
2. Average Release rate for period	uCi/sec :	2.79E-07	5.82E-09	3.26E-09	1.14E-08	

* Applicable limits are expressed in terms of dose.

Table 1C*
Annual Radioactive Effluent Release Report (2010)
Gaseous Effluents - Ground Level Releases
Reactor Unit: PSL2

Nuclides Released	Unit	Continuous Mode			
		1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Fission Gases					
Ar-41	Curies	0.00E+00	0.00E+00	2.08E+00	0.00E+00
Kr-85m	Curies	2.82E-02	3.11E-02	1.41E-01	5.11E-02
Kr-85	Curies	1.03E+01	0.00E+00	0.00E+00	0.00E+00
Kr-87	Curies	0.00E+00	1.10E-01	0.00E+00	5.84E-01
Kr-88	Curies	0.00E+00	1.43E+00	0.00E+00	0.00E+00
Xe-131m	Curies	1.24E+00	0.00E+00	2.13E+00	1.66E+00
Xe-133m	Curies	0.00E+00	0.00E+00	0.00E+00	3.33E-01
Xe-133	Curies	6.97E-01	0.00E+00	0.00E+00	0.00E+00
Xe-135m	Curies	0.00E+00	0.00E+00	0.00E+00	1.72E+00
Xe-135	Curies	0.00E+00	1.75E-01	2.35E-02	0.00E+00
Xe-138	Curies	2.20E+00	2.77E+00	8.61E-01	0.00E+00
Total For Period	Curies	1.44E+01	4.53E+00	5.23E+00	4.34E+00
Iodines					
I-131	Curies	1.08E-05	1.20E-05	1.84E-05	1.76E-05
I-133	Curies	1.49E-04	1.86E-04	2.43E-04	2.51E-04
Total For Period	Curies	1.60E-04	1.98E-04	2.61E-04	2.69E-04

Particulates					
Cr-51	Curies	0.00E+00	6.22E-07	0.00E+00	0.00E+00
Co-57	Curies	1.28E-05	1.90E-07	1.60E-07	0.00E+00
Co-58	Curies	0.00E+00	2.51E-06	0.00E+00	0.00E+00
Cs-134	Curies	0.00E+00	0.00E+00	1.53E-08	0.00E+00
Cs-137	Curies	2.23E-07	5.16E-06	7.87E-07	3.40E-06
Ce-141	Curies	0.00E+00	1.37E-07	0.00E+00	0.00E+00
Ce-144	Curies	4.93E-06	0.00E+00	0.00E+00	0.00E+00
Total For Period	Curies	1.79E-05	8.62E-06	9.62E-07	3.40E-06
<hr/>					
Tritium					
No Nuclides Found		N/A	N/A	N/A	N/A
<hr/>					
Gross Alpha					
G-Alpha	Curies	2.20E-06	4.59E-08	2.57E-08	8.96E-08
Total For Period	Curies	2.20E-06	4.59E-08	2.57E-08	8.96E-08

Table 1C*
Annual Radioactive Effluent Release Report (2010)
Gaseous Effluents - Ground Level Releases
Reactor Unit: PSL2

Batch Mode

Nuclides Released	Unit	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Fission Gases					
Ar-41	Curies	2.25E-01	2.29E-01	2.64E-01	2.34E-01
Kr-85m	Curies	1.58E-05	0.00E+00	0.00E+00	5.94E-05
Kr-85	Curies	1.43E-02	1.86E-02	2.01E-02	0.00E+00
Kr-87	Curies	1.37E-04	0.00E+00	3.02E-04	0.00E+00
Kr-88	Curies	1.88E-04	1.29E-04	0.00E+00	0.00E+00
Xe-131m	Curies	6.82E-04	2.64E-04	0.00E+00	2.07E-03
Xe-133m	Curies	2.80E-04	0.00E+00	4.42E-04	6.71E-03
Xe-133	Curies	7.58E-02	8.35E-02	6.53E-02	4.59E-01
Xe-135m	Curies	2.79E-04	5.72E-04	4.38E-04	4.90E-04
Xe-135	Curies	1.27E-03	2.97E-03	1.64E-03	4.49E-03
Total For Period	Curies	3.18E-01	3.35E-01	3.52E-01	7.07E-01

Iodines

No Nuclides Found	N/A	N/A	N/A	N/A
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Particulates

Ag-110m	Curies	0.00E+00	0.00E+00	6.55E-03	0.00E+00
Total For Period	Curies	0.00E+00	0.00E+00	6.55E-03	0.00E+00

Tritium

Batch Mode

Nuclides Released	Unit	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
H-3	Curies	5.39E-02	1.99E-01	3.53E-01	5.75E-02

Gross Alpha

No Nuclides Found	N/A	N/A	N/A	N/A
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* Zeroes in this table indicate that no radioactivity was present at detectable levels.

END OF ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

Table 2A - Regulatory Guide 1.21 (2010)
Liquid Effluents - Summation Of All Releases
Unit: Site

Type of Effluent	Units	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	% Est. Total Error
A. Fission And Activation Products						
1. Total Release (not including tritium, gases, alpha)	Curies	3.02E-02	3.99E-02	1.28E-02	5.22E-02	
2. Average diluted concentration during period	uCi/ml	8.12E-10	1.02E-09	2.40E-10	1.46E-09	
3. Percent of Applicable Limit	%	*	*	*	*	
B. Tritium						
1. Total Release	Curies	5.96E+01	1.12E+02	3.31E+01	6.68E+01	
2. Average diluted Concentration during period	uCi/ml	1.60E-06	2.87E-06	6.20E-07	1.87E-06	
3. Percent of Applicable Limit	%	*	*	*	*	
C. Dissolved and Entrained Gases						
1. Total Release	Curies	1.82E-02	1.05E-02	7.39E-04	1.18E-02	
2. Average diluted Concentration during period	uCi/ml	4.88E-10	2.68E-10	1.38E-11	3.29E-10	
3. Percent of Applicable Limit	%	*	*	*	*	
D: Gross Alpha Radioactivity						
1. Total Release	Curies	0.00E+00	1.31E-05	0.00E+00	0.00E+00	
E: Waste Vol Release (Pre-Dilution)						
	Liters	1.59E+06	1.87E+07	2.54E+07	1.43E+06	
F. Volume of Dilution Water Used						
	Liters	3.73E+10	3.90E+10	5.34E+10	3.58E+10	

* Applicable limits are expressed in terms of dose.

**Table 2B - Regulatory Guide 1.21 (2010)
Annual Radioactive Effluent Release Report
Liquid Effluents
Reactor Unit: Site**

Nuclides Released	Unit	Continuous Mode			
		1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Fission & Activation Products					
No Nuclides Found		N/A	N/A	N/A	N/A
Tritium					
No Nuclides Found		N/A	N/A	N/A	N/A
Dissolved And Entrained Gases					
No Nuclides Found		N/A	N/A	N/A	N/A

If Not Detected, Nuclide is Not Reported

Table 2B - Regulatory Guide 1.21 (2010)
Annual Radioactive Effluent Release Report
Liquid Effluents
Reactor Unit: Site

Batch Mode

<u>Nuclides Released</u>	<u>Unit</u>	<u>1st Quarter</u>	<u>2nd Quarter</u>	<u>3rd Quarter</u>	<u>4th Quarter</u>
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Fission & Activation Products

Fe-55	Curies	9.53E-04	1.61E-02	3.46E-03	8.13E-03
Nb-97	Curies	6.56E-05	5.37E-04	1.14E-04	9.50E-06
I-133	Curies	0.00E+00	0.00E+00	0.00E+00	7.73E-06
C-14	Curies	2.53E-02	1.07E-02	4.42E-03	3.98E-02
Sn-113	Curies	1.13E-05	3.07E-05	0.00E+00	0.00E+00
Ag-110m	Curies	2.60E-04	1.08E-03	8.81E-04	9.00E-04
Sb-124	Curies	0.00E+00	4.13E-04	2.01E-04	0.00E+00
W-187	Curies	0.00E+00	0.00E+00	0.00E+00	1.24E-05
Co-57	Curies	6.11E-06	1.10E-05	7.79E-06	2.39E-06
Te-129m	Curies	0.00E+00	6.86E-04	0.00E+00	0.00E+00
Fe-59	Curies	7.75E-06	1.16E-03	7.64E-05	8.80E-05
Cs-136	Curies	0.00E+00	5.19E-06	3.06E-06	1.15E-05
Nb-95	Curies	7.26E-05	3.88E-04	3.10E-05	9.22E-05
Co-60	Curies	9.38E-04	1.21E-03	6.03E-04	1.21E-03
I-134	Curies	0.00E+00	8.63E-06	0.00E+00	3.50E-06
Cs-138	Curies	0.00E+00	5.36E-05	1.28E-05	1.02E-05
Sr-91	Curies	6.82E-06	2.29E-05	1.33E-05	0.00E+00
Cs-134	Curies	4.51E-06	7.78E-06	0.00E+00	0.00E+00
Sb-122	Curies	0.00E+00	2.60E-06	8.20E-06	0.00E+00
I-132	Curies	0.00E+00	3.10E-06	0.00E+00	0.00E+00
Zn-65	Curies	6.77E-06	4.15E-05	2.47E-05	6.41E-06
Tc-99m	Curies	0.00E+00	0.00E+00	0.00E+00	1.56E-06
Co-58	Curies	7.86E-04	3.74E-03	1.42E-03	1.08E-03
Zr-95	Curies	5.84E-05	2.66E-04	4.53E-05	9.43E-05
Br-82	Curies	1.17E-06	0.00E+00	0.00E+00	2.44E-06
I-135	Curies	0.00E+00	9.23E-06	0.00E+00	0.00E+00
Zr-97	Curies	4.60E-04	2.10E-04	1.02E-04	1.48E-04
La-140	Curies	0.00E+00	6.02E-06	0.00E+00	6.28E-06
Cs-137	Curies	1.63E-04	4.37E-05	6.89E-05	8.05E-05
Mn-54	Curies	1.59E-04	1.80E-04	9.38E-05	1.83E-04
I-131	Curies	3.92E-06	3.85E-06	8.43E-06	5.72E-06
Sr-89	Curies	0.00E+00	1.41E-04	0.00E+00	0.00E+00
Ru-103	Curies	3.52E-06	2.85E-06	3.74E-06	0.00E+00
Sb-125	Curies	9.49E-04	1.13E-03	1.18E-03	1.79E-04
Cr-51	Curies	2.78E-05	1.67E-03	0.00E+00	1.11E-04
Ba-140	Curies	3.69E-05	6.57E-06	0.00E+00	0.00E+00
Te-132	Curies	0.00E+00	6.89E-06	0.00E+00	0.00E+00

I-130	Curies	0.00E+00	0.00E+00	3.88E-06	0.00E+00
Total For Period	Curies	3.02E-02	3.99E-02	1.28E-02	5.22E-02
<hr/>					
Tritium					
H-3	Curies	5.96E+01	1.12E+02	3.31E+01	6.68E+01
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Dissolved And Entrained Gases					
Xe-135m	Curies	0.00E+00	1.84E-05	0.00E+00	0.00E+00
Ar-41	Curies	3.86E-06	0.00E+00	0.00E+00	0.00E+00
Xe-133	Curies	1.79E-02	1.01E-02	7.39E-04	1.16E-02
Xe-138	Curies	1.43E-05	0.00E+00	0.00E+00	1.59E-05
Xe-133m	Curies	2.03E-04	1.30E-04	0.00E+00	1.07E-04
Xe-135	Curies	1.60E-05	1.67E-04	0.00E+00	2.91E-06
Total For Period	Curies	1.82E-02	1.05E-02	7.39E-04	1.18E-02

If Not Detected, Nuclide is Not Reported

* Zeroes in this table indicate that no radioactivity was present at detectable levels.
See Table 2-7 for typical minimum detectable concentrations.

END OF ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

Table 2A - Regulatory Guide 1.21 (2010)
Liquid Effluents - Summation Of All Releases
Unit: PSL1

Type of Effluent	Units	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	% Est. Total Error
A. Fission And Activation Products						
1. Total Release (not including tritium, gases, alpha)	Curies	1.51E-02	2.00E-02	6.40E-03	2.61E-02	
2. Average diluted concentration during period	uCi/ml	8.12E-10	1.02E-09	2.40E-10	1.46E-09	
3. Percent of Applicable Limit	%	*	*	*	*	
B. Tritium						
1. Total Release	Curies	2.98E+01	5.61E+01	1.66E+01	3.34E+01	
2. Average diluted Concentration during period	uCi/ml	1.60E-06	2.87E-06	6.20E-07	1.87E-06	
3. Percent of Applicable Limit	%	*	*	*	*	
C. Dissolved and Entrained Gases						
1. Total Release	Curies	9.09E-03	5.23E-03	3.70E-04	5.88E-03	
2. Average diluted Concentration during period	uCi/ml	4.88E-10	2.68E-10	1.38E-11	3.29E-10	
3. Percent of Applicable Limit	%	*	*	*	*	
D: Gross Alpha Radioactivity						
1. Total Release	Curies	0.00E+00	6.53E-06	0.00E+00	0.00E+00	
E: Waste Vol Release (Pre-Dilution)						
	Liters	7.94E+05	9.35E+06	1.27E+07	7.15E+05	
F. Volume of Dilution Water Used						
	Liters	1.86E+10	1.95E+10	2.67E+10	1.79E+10	

* Applicable limits are expressed in terms of dose.

Table 2B - Regulatory Guide 1.21 (2010)
Annual Radioactive Effluent Release Report
Liquid Effluents
Reactor Unit: PSL1

<u>Nuclides Released</u>	<u>Unit</u>	<u>Continuous Mode</u>			
		<u>1st Quarter</u>	<u>2nd Quarter</u>	<u>3rd Quarter</u>	<u>4th Quarter</u>
Fission & Activation Products					
No Nuclides Found		N/A	N/A	N/A	N/A
Tritium					
No Nuclides Found		N/A	N/A	N/A	N/A
Dissolved And Entrained Gases					
No Nuclides Found		N/A	N/A	N/A	N/A

If Not Detected, Nuclide is Not Reported

Table 2B - Regulatory Guide 1.21 (2010)
Annual Radioactive Effluent Release Report
Liquid Effluents
Reactor Unit: PSL1

Batch Mode

<u>Nuclides Released</u>	<u>Unit</u>	<u>1st Quarter</u>	<u>2nd Quarter</u>	<u>3rd Quarter</u>	<u>4th Quarter</u>
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Fission & Activation Products

Zr-97	Curies	2.30E-04	1.05E-04	5.08E-05	7.41E-05
C-14	Curies	1.26E-02	5.37E-03	2.21E-03	1.99E-02
Zn-65	Curies	3.38E-06	2.08E-05	1.24E-05	3.20E-06
Sb-125	Curies	4.74E-04	5.64E-04	5.92E-04	8.94E-05
I-134	Curies	0.00E+00	4.32E-06	0.00E+00	1.75E-06
Sb-122	Curies	0.00E+00	1.30E-06	4.10E-06	0.00E+00
Sr-91	Curies	3.41E-06	1.15E-05	6.63E-06	0.00E+00
Ag-110m	Curies	1.30E-04	5.38E-04	4.40E-04	4.50E-04
Nb-95	Curies	3.63E-05	1.94E-04	1.55E-05	4.61E-05
Cs-136	Curies	0.00E+00	2.60E-06	1.53E-06	5.77E-06
Te-132	Curies	0.00E+00	3.45E-06	0.00E+00	0.00E+00
La-140	Curies	0.00E+00	3.01E-06	0.00E+00	3.14E-06
Co-57	Curies	3.05E-06	5.52E-06	3.90E-06	1.19E-06
Sb-124	Curies	0.00E+00	2.07E-04	1.00E-04	0.00E+00
Sr-89	Curies	0.00E+00	7.04E-05	0.00E+00	0.00E+00
I-132	Curies	0.00E+00	1.55E-06	0.00E+00	0.00E+00
Cs-134	Curies	2.25E-06	3.89E-06	0.00E+00	0.00E+00
Ba-140	Curies	1.85E-05	3.28E-06	0.00E+00	0.00E+00
I-133	Curies	0.00E+00	0.00E+00	0.00E+00	3.87E-06
Co-58	Curies	3.93E-04	1.87E-03	7.10E-04	5.42E-04
Cs-138	Curies	0.00E+00	2.68E-05	6.39E-06	5.09E-06
I-131	Curies	1.96E-06	1.92E-06	4.22E-06	2.86E-06
Ru-103	Curies	1.76E-06	1.43E-06	1.87E-06	0.00E+00
Co-60	Curies	4.69E-04	6.03E-04	3.02E-04	6.07E-04
I-130	Curies	0.00E+00	0.00E+00	1.94E-06	0.00E+00
Tc-99m	Curies	0.00E+00	0.00E+00	0.00E+00	7.79E-07
Mn-54	Curies	7.96E-05	9.02E-05	4.69E-05	9.14E-05
Nb-97	Curies	3.28E-05	2.68E-04	5.71E-05	4.75E-06
I-135	Curies	0.00E+00	4.62E-06	0.00E+00	0.00E+00
Zr-95	Curies	2.92E-05	1.33E-04	2.26E-05	4.72E-05
Te-129m	Curies	0.00E+00	3.43E-04	0.00E+00	0.00E+00
Fe-55	Curies	4.77E-04	8.06E-03	1.73E-03	4.06E-03
Fe-59	Curies	3.87E-06	5.82E-04	3.82E-05	4.40E-05
Sn-113	Curies	5.66E-06	1.53E-05	0.00E+00	0.00E+00
W-187	Curies	0.00E+00	0.00E+00	0.00E+00	6.18E-06
Cr-51	Curies	1.39E-05	8.34E-04	0.00E+00	5.57E-05
Br-82	Curies	5.87E-07	0.00E+00	0.00E+00	1.22E-06

Cs-137	Curies	8.16E-05	2.18E-05	3.44E-05	4.02E-05
Total For Period	Curies	1.51E-02	2.00E-02	6.40E-03	2.61E-02
<hr/>					
Tritium					
H-3	Curies	2.98E+01	5.61E+01	1.66E+01	3.34E+01
<hr/>					
Dissolved And Entrained Gases					
Xe-133	Curies	8.97E-03	5.07E-03	3.70E-04	5.82E-03
Xe-135	Curies	8.02E-06	8.37E-05	0.00E+00	1.46E-06
Xe-133m	Curies	1.01E-04	6.49E-05	0.00E+00	5.33E-05
Xe-138	Curies	7.17E-06	0.00E+00	0.00E+00	7.95E-06
Ar-41	Curies	1.93E-06	0.00E+00	0.00E+00	0.00E+00
Xe-135m	Curies	0.00E+00	9.21E-06	0.00E+00	0.00E+00
Total For Period	Curies	9.09E-03	5.23E-03	3.70E-04	5.88E-03

If Not Detected, Nuclide is Not Reported

* Zeroes in this table indicate that no radioactivity was present at detectable levels.
See Table 2-7 for typical minimum detectable concentrations.

END OF ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

Table 2A - Regulatory Guide 1.21 (2010)
Liquid Effluents - Summation Of All Releases
Unit: PSL2

Type of Effluent	Units	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	% Est. Total Error
A. Fission And Activation Products						
1. Total Release (not including tritium, gases, alpha)	Curies	1.51E-02	2.00E-02	6.40E-03	2.61E-02	
2. Average diluted concentration during period	uCi/ml	8.12E-10	1.02E-09	2.40E-10	1.46E-09	
3. Percent of Applicable Limit	%	*	*	*	*	
B. Tritium						
1. Total Release	Curies	2.98E+01	5.61E+01	1.66E+01	3.34E+01	
2. Average diluted Concentration during period	uCi/ml	1.60E-06	2.87E-06	6.20E-07	1.87E-06	
3. Percent of Applicable Limit	%	*	*	*	*	
C. Dissolved and Entrained Gases						
1. Total Release	Curies	9.09E-03	5.23E-03	3.70E-04	5.88E-03	
2. Average diluted Concentration during period	uCi/ml	4.88E-10	2.68E-10	1.38E-11	3.29E-10	
3. Percent of Applicable Limit	%	*	*	*	*	
D: Gross Alpha Radioactivity						
1. Total Release	Curies	0.00E+00	6.53E-06	0.00E+00	0.00E+00	
E: Waste Vol Release (Pre-Dilution)						
	Liters	7.94E+05	9.35E+06	1.27E+07	7.15E+05	
F. Volume of Dilution Water Used						
	Liters	1.86E+10	1.95E+10	2.67E+10	1.79E+10	

* Applicable limits are expressed in terms of dose.

**Table 2B - Regulatory Guide 1.21 (2010)
Annual Radioactive Effluent Release Report
Liquid Effluents
Reactor Unit: PSL2**

Nuclides Released	Unit	Continuous Mode			
		1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Fission & Activation Products					
No Nuclides Found		N/A	N/A	N/A	N/A
Tritium					
No Nuclides Found		N/A	N/A	N/A	N/A
Dissolved And Entrained Gases					
No Nuclides Found		N/A	N/A	N/A	N/A

If Not Detected, Nuclide is Not Reported

Table 2B - Regulatory Guide 1.21 (2010)
Annual Radioactive Effluent Release Report
Liquid Effluents
Reactor Unit: PSL2

<u>Nuclides Released</u>	<u>Unit</u>	<u>Batch Mode</u>			
		<u>1st Quarter</u>	<u>2nd Quarter</u>	<u>3rd Quarter</u>	<u>4th Quarter</u>

Fission & Activation Products

La-140	Curies	0.00E+00	3.01E-06	0.00E+00	3.14E-06
Zr-97	Curies	2.30E-04	1.05E-04	5.08E-05	7.41E-05
Sb-124	Curies	0.00E+00	2.07E-04	1.00E-04	0.00E+00
I-135	Curies	0.00E+00	4.62E-06	0.00E+00	0.00E+00
Fe-55	Curies	4.77E-04	8.06E-03	1.73E-03	4.06E-03
Ru-103	Curies	1.76E-06	1.43E-06	1.87E-06	0.00E+00
I-130	Curies	0.00E+00	0.00E+00	1.94E-06	0.00E+00
Cs-137	Curies	8.16E-05	2.18E-05	3.44E-05	4.02E-05
Co-58	Curies	3.93E-04	1.87E-03	7.10E-04	5.42E-04
Sr-89	Curies	0.00E+00	7.04E-05	0.00E+00	0.00E+00
Te-129m	Curies	0.00E+00	3.43E-04	0.00E+00	0.00E+00
Sb-122	Curies	0.00E+00	1.30E-06	4.10E-06	0.00E+00
Fe-59	Curies	3.87E-06	5.82E-04	3.82E-05	4.40E-05
W-187	Curies	0.00E+00	0.00E+00	0.00E+00	6.18E-06
I-133	Curies	0.00E+00	0.00E+00	0.00E+00	3.87E-06
Co-57	Curies	3.05E-06	5.52E-06	3.90E-06	1.19E-06
Cs-136	Curies	0.00E+00	2.60E-06	1.53E-06	5.77E-06
Nb-95	Curies	3.63E-05	1.94E-04	1.55E-05	4.61E-05
Ba-140	Curies	1.85E-05	3.28E-06	0.00E+00	0.00E+00
I-131	Curies	1.96E-06	1.92E-06	4.22E-06	2.86E-06
Sr-91	Curies	3.41E-06	1.15E-05	6.63E-06	0.00E+00
Cs-134	Curies	2.25E-06	3.89E-06	0.00E+00	0.00E+00
Cs-138	Curies	0.00E+00	2.68E-05	6.39E-06	5.09E-06
Zr-95	Curies	2.92E-05	1.33E-04	2.26E-05	4.72E-05
I-134	Curies	0.00E+00	4.32E-06	0.00E+00	1.75E-06
Tc-99m	Curies	0.00E+00	0.00E+00	0.00E+00	7.79E-07
Mn-54	Curies	7.96E-05	9.02E-05	4.69E-05	9.14E-05
Br-82	Curies	5.87E-07	0.00E+00	0.00E+00	1.22E-06
Zn-65	Curies	3.38E-06	2.08E-05	1.24E-05	3.20E-06
Nb-97	Curies	3.28E-05	2.68E-04	5.71E-05	4.75E-06
Te-132	Curies	0.00E+00	3.45E-06	0.00E+00	0.00E+00
C-14	Curies	1.26E-02	5.37E-03	2.21E-03	1.99E-02
Cr-51	Curies	1.39E-05	8.34E-04	0.00E+00	5.57E-05
I-132	Curies	0.00E+00	1.55E-06	0.00E+00	0.00E+00
Sb-125	Curies	4.74E-04	5.64E-04	5.92E-04	8.94E-05
Sn-113	Curies	5.66E-06	1.53E-05	0.00E+00	0.00E+00
Ag-110m	Curies	1.30E-04	5.38E-04	4.40E-04	4.50E-04

Co-60	Curies	4.69E-04	6.03E-04	3.02E-04	6.07E-04
Total For Period	Curies	1.51E-02	2.00E-02	6.40E-03	2.61E-02
<hr/>					
Tritium					
H-3	Curies	2.98E+01	5.61E+01	1.66E+01	3.34E+01
<hr/>					
Dissolved And Entrained Gases					
Ar-41	Curies	1.93E-06	0.00E+00	0.00E+00	0.00E+00
Xe-135m	Curies	0.00E+00	9.21E-06	0.00E+00	0.00E+00
Xe-135	Curies	8.02E-06	8.37E-05	0.00E+00	1.46E-06
Xe-133	Curies	8.97E-03	5.07E-03	3.70E-04	5.82E-03
Xe-133m	Curies	1.01E-04	6.49E-05	0.00E+00	5.33E-05
Xe-138	Curies	7.17E-06	0.00E+00	0.00E+00	7.95E-06
Total For Period	Curies	9.09E-03	5.23E-03	3.70E-04	5.88E-03

If Not Detected, Nuclide is Not Reported

* Zeroes in this table indicate that no radioactivity was present at detectable levels.
See Table 2-7 for typical minimum detectable concentrations.

END OF ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

Table A-2B, Liquid Effluents - Continuous Mode

Unit: Site

Starting: 1-Jan-2010 Ending: 31-Dec-2010

Nuclides Released	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Total
A. Particulates and Iodines						
No Nuclides Found	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
B. Dissolved and Entrained Gase						
No Nuclides Found	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
C. Tritium						
No Nuclides Found	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
D. Gross Alpha Activity						
No Nuclides Found	Ci	0.00E+00	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.

Table 6A and 6B - Regulatory Guide 1.21 (2010)
Annual Liquid Effluents - Abnormal Release Summary
Unit: Site

A. 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

B. Gaseous Releases	Units	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Year Totals
1. Number of Releases	:	0	1	0	0	1
2. Total Time For All Releases	(Minutes):	0.00E+00	2.40E+02	0.00E+00	0.00E+00	2.40E+02
3. Maximum Time For A Release	(Minutes):	0.00E+00	2.40E+02	0.00E+00	0.00E+00	2.40E+02
4. Average Time For A Release	(Minutes):	0.00E+00	2.40E+02	0.00E+00	0.00E+00	2.40E+02
5. Minimum Time For A Release	(Minutes):	0.00E+00	2.40E+02	0.00E+00	0.00E+00	2.40E+02
6. Total activity for all releases	(Curies) :	0.00E+00	9.13E-03	0.00E+00	0.00E+00	9.13E-03
End of Annual Liquid Effluents - Abnormal Release Summary						

NRC Regulatory Guide 1.21 Reports

Report Date : 2/17/2011

Solid Waste Shipped Offsite for Disposal and Estimates of Major Nuclides by Waste Class and Stream
 During Period From 01/01/2010 to 12/31/2010 Percent Cutoff: 1

Waste Stream : Resins, Filters, and Evap Bottoms
 U1 SRT in 8-120 Unit 2 SRT 2009

Waste Class	Volume		Curies Shipped	% Error (Ci)
	Ft ³	M ³		
A	3.27E+03	9.25E+01	5.04E+01	+/- 25%
B	2.72E+02	7.70E+00	2.13E+02	+/- 25%
C	9.80E+01	2.78E+00	9.76E+01	+/- 25%
All	3.64E+03	1.03E+02	3.61E+02	+/- 25%

Waste Stream : Dry Active Waste

Waste Class	Volume		Curies Shipped	%Error (Ci)
	Ft ³	M ³		
A	2.38E+04	6.74E+02	7.24E+00	+/-25%
B	0.00E+00	0.00E+00	0.00E+00	+/-25%
C	0.00E+00	0.00E+00	0.00E+00	+/-25%
All	2.38E+04	6.74E+02	7.24E+00	+/-25%

Waste Stream : Irradiated Components

Waste Class	Volume		Curies Shipped	% Error (Ci)
	Ft ³	M ³		
A	0.00E+00	0.00E+00	0.00E+00	+/-25%
B	0.00E+00	0.00E+00	0.00E+00	+/-25%
C	0.00E+00	0.00E+00	0.00E+00	+/-25%
All	0.00E+00	0.00E+00	0.00E+00	+/-25%

NRC Regulatory Guide 1.21 Reports

Report Date : 2/17/2011

Solid Waste Shipped Offsite for Disposal and Estimates of Major Nuclides by Waste Class and Stream
 During Period From 01/01/2010 to 12/31/2010 Percent Cutoff: 1

Waste Stream : Other Waste
 Combined Packages

Waste Class	Volume		Curies Shipped	% Error (Ci)
	Ft ³	M ³		
A	6.22E+03	1.76E+02	1.05E+01	+/-25%
B	0.00E+00	0.00E+00	0.00E+00	+/-25%
C	2.94E+01	8.33E-01	1.17E+02	+/-25%
All	6.25E+03	1.77E+02	1.27E+02	+/-25%

Waste Stream : Sum of All 4 Categories
 Combined Packages U1 SRT in 8-120 Unit 2 SRT 2009

Waste Class	Volume		Curies Shipped	% Error (Ci)
	Ft ³	M ³		
A	3.33E+04	9.43E+02	6.81E+01	+/-25%
B	2.72E+02	7.70E+00	2.13E+02	+/-25%
C	1.27E+02	3.61E+00	2.14E+02	+/-25%
All	3.37E+04	9.54E+02	4.96E+02	+/-25%

-Combined Waste Type Shipment, Major Volume Waste Type Shown

NRC Regulatory Guide 1.21 Reports

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Report Date : 2/17/2011

Solid Waste Shipped Offsite for Disposal and Estimates of Major Nuclides by Waste Class and Stream
During Period From 01/01/2010 to 12/31/2010

Number of Shipments	Mode of Transportation	Destination
2	Hittman Transport (SC)	EnergySolutions Bear Creek
18	Hittman Transport (TN)	EnergySolutions Bear Creek
1	Southern Pines Trucking	EnergySolutions Bear Creek
2	Hittman Transport (SC)	EnergySolutions LLC.
1	Hittman Transport (TN)	EnergySolutions LLC.
2	Hittman Transport (SC)	Studsvik Processing Facility LLC - Erwin
3	Hittman Transport (TN)	Studsvik Processing Facility LLC - Erwin

NRC Regulatory Guide 1.21 Reports

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Solid Waste Shipped Offsite for Disposal and Estimates of Major Nuclides by Waste Class and Stream
 During Period From 01/01/2010 to 12/31/2010 Percent Cutoff: 1

Resins, Filters, and Evap Bottom		
Waste Class A		
Nuclide Name	Percent Abundance	Curies
Mn-54	1.108%	5.58E-01
Fe-55	47.276%	2.38E+01
Co-60	26.600%	1.34E+01
Ni-63	21.552%	1.09E+01
Sb-125	1.065%	5.37E-01
Resins, Filters, and Evap Bottom		
Waste Class B		
Nuclide Name	Percent Abundance	Curies
H-3	1.125%	2.40E+00
Mn-54	3.350%	7.14E+00
Fe-55	14.920%	3.18E+01
Co-58	20.275%	4.32E+01
Co-60	6.731%	1.43E+01
Ni-63	36.300%	7.74E+01
Sb-125	1.095%	2.33E+00
Cs-134	1.282%	2.73E+00
Cs-137	8.951%	1.91E+01
Ce-144	5.158%	1.10E+01
Resins, Filters, and Evap Bottom		
Waste Class C		
Nuclide Name	Percent Abundance	Curies
H-3	1.085%	1.06E+00
Mn-54	2.540%	2.48E+00
Fe-55	16.107%	1.57E+01
Co-58	1.614%	1.58E+00
Co-60	6.871%	6.71E+00
Ni-63	16.139%	1.58E+01
Cs-134	2.373%	2.32E+00
Cs-137	33.893%	3.31E+01
Ce-144	17.833%	1.74E+01
Resins, Filters, and Evap Bottom		
Waste Class All		
Nuclide Name	Percent Abundance	Curies
Mn-54	2.818%	1.02E+01
Fe-55	19.757%	7.13E+01
Co-58	12.538%	4.53E+01
Co-60	9.542%	3.45E+01
Ni-63	28.793%	1.04E+02
Cs-134	1.398%	5.05E+00
Cs-137	14.451%	5.22E+01
Ce-144	7.898%	2.85E+01
Dry Active Waste		
Waste Class A		

NRC Regulatory Guide 1.21 Reports

Report Date : 2/17/2011

Solid Waste Shipped Offsite for Disposal and Estimates of Major Nuclides by Waste Class and Stream
During Period From 01/01/2010 to 12/31/2010 Percent Cutoff: 1

Nuclide Name	Percent Abundance	Curies
Cr-51	4.320%	3.13E-01
Fe-55	34.944%	2.53E+00
Co-58	23.267%	1.69E+00
Co-60	10.028%	7.26E-01
Ni-63	12.695%	9.19E-01
Zr-95	2.316%	1.68E-01
Nb-95	3.750%	2.72E-01
Sn-113	1.373%	9.94E-02
Cs-137	2.284%	1.65E-01
Dry Active Waste		
Waste Class All		
Nuclide Name	Percent Abundance	Curies
Cr-51	4.320%	3.13E-01
Fe-55	34.944%	2.53E+00
Co-58	23.267%	1.69E+00
Co-60	10.028%	7.26E-01
Ni-63	12.695%	9.19E-01
Zr-95	2.316%	1.68E-01
Nb-95	3.750%	2.72E-01
Sn-113	1.373%	9.94E-02
Cs-137	2.284%	1.65E-01
Other Waste		
Waste Class A		
Nuclide Name	Percent Abundance	Curies
H-3	4.080%	4.28E-01
Mn-54	1.577%	1.65E-01
Fe-55	29.193%	3.06E+00
Co-58	32.027%	3.36E+00
Co-60	10.100%	1.06E+00
Ni-63	13.066%	1.37E+00
Ag-110m	1.515%	1.59E-01
Sb-125	4.179%	4.38E-01
Ce-144	1.357%	1.42E-01
Other Waste		
Waste Class C		
Nuclide Name	Percent Abundance	Curies
Fe-55	40.155%	4.69E+01
Co-60	9.562%	1.12E+01
Ni-63	49.077%	5.73E+01
Other Waste		
Waste Class All		
Nuclide Name	Percent Abundance	Curies
Fe-55	39.252%	4.99E+01
Co-58	2.642%	3.36E+00
Co-60	9.607%	1.22E+01
Ni-63	46.109%	5.87E+01

NRC Regulatory Guide 1.21 Reports

Report Date : 2/17/2011

Solid Waste Shipped Offsite for Disposal and Estimates of Major Nuclides by Waste Class and Stream
During Period From 01/01/2010 to 12/31/2010 Percent Cutoff: 1

Sum of All 4 Categories		
Waste Class A		
Nuclide Name	Percent Abundance	Curies
Mn-54	1.138%	7.75E-01
Fe-55	43.182%	2.94E+01
Co-58	8.125%	5.54E+00
Co-60	22.299%	1.52E+01
Ni-63	19.305%	1.32E+01
Sb-125	1.530%	1.04E+00
Sum of All 4 Categories		
Waste Class B		
Nuclide Name	Percent Abundance	Curies
H-3	1.125%	2.40E+00
Mn-54	3.350%	7.14E+00
Fe-55	14.920%	3.18E+01
Co-58	20.275%	4.32E+01
Co-60	6.731%	1.43E+01
Ni-63	36.300%	7.74E+01
Sb-125	1.095%	2.33E+00
Cs-134	1.282%	2.73E+00
Cs-137	8.951%	1.91E+01
Ce-144	5.158%	1.10E+01
Sum of All 4 Categories		
Waste Class C		
Nuclide Name	Percent Abundance	Curies
Mn-54	1.235%	2.65E+00
Fe-55	29.206%	6.26E+01
Co-60	8.337%	1.79E+01
Ni-63	34.080%	7.30E+01
Cs-134	1.087%	2.33E+00
Cs-137	15.906%	3.41E+01
Ce-144	8.128%	1.74E+01
Sum of All 4 Categories		
Waste Class All		
Nuclide Name	Percent Abundance	Curies
Mn-54	2.131%	1.06E+01
Fe-55	24.984%	1.24E+02
Co-58	10.154%	5.03E+01
Co-60	9.566%	4.74E+01
Ni-63	33.004%	1.64E+02
Cs-134	1.022%	5.07E+00
Cs-137	10.789%	5.35E+01
Ce-144	5.800%	2.87E+01

Period: Ann, 2010

Site/Unit/Discharge Point: Site

Site Boundary NNG Doserate Summary - Note: All Doses in mRem/yr

Receptor	Agegroup	Bone	Liver	Total Body	Thyroid	Kidney	Lung	GI-Li	Skin
NW Site Boundary - In	Infant	1.215E-03	1.860E-03	1.739E-03	5.643E-03	1.383E-03	1.783E-03	2.581E-03	0.000E+00
WNW Site Boundary - I	Infant	1.059E-03	1.059E-03	1.059E-03	1.059E-03	1.059E-03	1.059E-03	1.059E-03	0.000E+00
Maximum Doserate by Organ:		1.215E-03	1.860E-03	1.739E-03	5.643E-03	1.383E-03	1.783E-03	2.581E-03	0.000E+00

Maximum Organ Doserate (mRem/yr): 5.643E-03

Maximum Total Body Doserate (mRem/yr): 1.739E-03

Site Boundary NG Doserate Summary

Gas Receptor Location	Gamma (mRad/yr)	Beta (mRad/yr)	Total Body (mRem/yr)	Skin (mRem/yr)
NW Site Boundary	2.228E-03	2.228E-03	2.117E-03	3.463E-03
WNW Site Boundary	1.919E-03	1.919E-03	1.824E-03	2.983E-03

Period: Ann, 2010

Site/Unit/Discharge Point: Site

Maximum Individual NNG Dose Summary - Note: All Doses in mRem

Receptor	Agegroup	Bone	Liver	Total Body	Thyroid	Kidney	Lung	GI-LI	Skin
SE Nearest Res - Adult	Adult	2.062E-03	2.062E-03	2.061E-03	2.119E-03	2.063E-03	2.634E-03	2.098E-03	0.000E+00
SE Nearest Res - Child	Child	2.061E-03	2.061E-03	2.061E-03	2.156E-03	2.062E-03	2.328E-03	2.078E-03	0.000E+00
SE Nearest Res - Infant	Infant	2.061E-03	2.061E-03	2.061E-03	2.149E-03	2.061E-03	2.162E-03	2.067E-03	0.000E+00
SE Nearest Res - Teenager	Teenager	2.062E-03	2.062E-03	2.061E-03	2.136E-03	2.063E-03	2.635E-03	2.098E-03	0.000E+00
SE Visitor - Adult	Adult	9.577E-04	9.576E-04	9.572E-04	9.826E-04	9.581E-04	1.207E-03	9.732E-04	0.000E+00
SSW Near Garden - Adult	Adult	1.597E-04	1.597E-04	1.597E-04	1.637E-04	1.598E-04	1.990E-04	1.622E-04	0.000E+00
SSW Near Garden - Child	Child	1.597E-04	1.597E-04	1.596E-04	1.662E-04	1.597E-04	1.779E-04	1.608E-04	0.000E+00
SSW Near Garden - Teenager	Teenager	1.597E-04	1.597E-04	1.597E-04	1.648E-04	1.598E-04	1.990E-04	1.622E-04	0.000E+00
WSW Near Milk - Adult	Adult	3.743E-04	3.760E-04	3.734E-04	5.521E-04	3.734E-04	4.394E-04	6.438E-04	0.000E+00
WSW Near Milk - Child	Child	3.887E-04	3.882E-04	3.730E-04	9.225E-04	3.735E-04	4.033E-04	6.587E-04	0.000E+00
WSW Near Milk - Infant	Infant	4.094E-04	4.145E-04	3.739E-04	1.688E-03	3.734E-04	3.862E-04	6.574E-04	0.000E+00
WSW Near Milk - Teenager	Teenager	9.578E-06	1.234E-05	4.865E-06	2.802E-04	6.641E-06	7.131E-05	5.073E-04	0.000E+00
Maximum Dose by Organ:		2.062E-03	2.062E-03	2.061E-03	2.156E-03	2.063E-03	2.635E-03	2.098E-03	0.000E+00

Maximum Organ Dose (mRem): 2.635E-03

Maximum Total Body Dose (mRem): 2.061E-03

Maximum Individual NG Dose Summary

Gas Receptor Location	Gamma (mRad)	Beta (mRad)	Total Body (mRem)	Skin (mRem)
SSW Near Gard 4.4 mi 207 deg	3.854E-04	2.279E-04	3.663E-04	5.990E-04
SE Nearest Res 1.52 mi 142 deg	5.080E-03	3.005E-03	4.829E-03	7.896E-03
SE Visitor	2.200E-03	1.301E-03	2.091E-03	3.419E-03
WSW Near Milk 3.43 mi 248 deg	6.841E-04	4.046E-04	6.502E-04	1.063E-03

Period: Ann, 2010

Site/Unit/Discharge Point: PSL1

Site Boundary NNG Doserate Summary - Note: All Doses in mRem/yr

Receptor	Agegroup	Bone	Liver	Total Body	Thyroid	Kidney	Lung	GI-Lli	Skin
WNW Site Boundary - I	Infant	1.595E-06	1.595E-06	1.595E-06	1.595E-06	1.595E-06	1.595E-06	1.595E-06	0.000E+00
NW Site Boundary - In	Infant	6.233E-05	1.550E-03	1.492E-03	1.606E-03	6.566E-04	1.497E-03	1.489E-03	0.000E+00
Maximum Doserate by Organ:		6.233E-05	1.550E-03	1.492E-03	1.606E-03	6.566E-04	1.497E-03	1.489E-03	0.000E+00

Maximum Organ Doserate (mRem/yr): 1.606E-03

Maximum Total Body Doserate (mRem/yr): 1.492E-03

Site Boundary NG Doserate Summary

Gas Receptor Location	Gamma (mRad/yr)	Beta (mRad/yr)	Total Body (mRem/yr)	Skin (mRem/yr)
NW Site Boundary	2.683E-03	2.683E-03	2.541E-03	3.957E-03
WNW Site Boundary	2.311E-03	2.311E-03	2.189E-03	3.409E-03

Period: Ann, 2010

Site/Unit/Discharge Point: PSL1

Maximum Individual NNG Dose Summary - Note: All Doses in mRem

Receptor	Agegroup	Bone	Liver	Total Body	Thyroid	Kidney	Lung	GI-Lli	Skin
SE Nearest Res - Adult	Adult	5.796E-06	5.741E-06	5.694E-06	5.858E-06	5.705E-06	6.172E-06	5.709E-06	0.000E+00
SE Nearest Res - Child	Child	5.726E-06	5.710E-06	5.674E-06	5.914E-06	5.684E-06	6.356E-06	5.685E-06	0.000E+00
SE Nearest Res - Infant	Infant	5.714E-06	5.707E-06	5.670E-06	5.894E-06	5.674E-06	6.307E-06	5.674E-06	0.000E+00
SE Nearest Res - Teenager	Teenager	5.710E-06	5.711E-06	5.682E-06	5.890E-06	5.705E-06	6.475E-06	5.708E-06	0.000E+00
SE Visitor - Adult	Adult	2.688E-06	2.664E-06	2.643E-06	2.715E-06	2.648E-06	2.852E-06	2.650E-06	0.000E+00
SSW Near Garden - Adult	Adult	4.478E-07	4.441E-07	4.408E-07	4.521E-07	4.416E-07	4.736E-07	4.419E-07	0.000E+00
SSW Near Garden - Child	Child	4.430E-07	4.420E-07	4.395E-07	4.560E-07	4.402E-07	4.863E-07	4.403E-07	0.000E+00
SSW Near Garden -	Teenager	4.420E-07	4.420E-07	4.401E-07	4.543E-07	4.416E-07	4.944E-07	4.418E-07	0.000E+00
WSW Near Milk - Adult	Adult	1.884E-06	2.189E-06	1.783E-06	3.260E-06	1.425E-06	1.207E-06	1.048E-06	0.000E+00
WSW Near Milk - Child	Child	4.571E-06	4.456E-06	1.540E-06	7.618E-06	1.450E-06	1.500E-06	1.043E-06	0.000E+00
WSW Near Milk - Infant	Infant	8.443E-06	9.330E-06	1.519E-06	1.688E-05	1.448E-06	2.091E-06	1.042E-06	0.000E+00
WSW Near Milk - Teenager	Teenager	1.509E-06	2.029E-06	7.193E-07	3.400E-06	5.377E-07	3.650E-07	7.585E-08	0.000E+00
Maximum Dose by Organ:		8.443E-06	9.330E-06	5.694E-06	1.688E-05	5.705E-06	6.475E-06	5.709E-06	0.000E+00

Maximum Organ Dose (mRem): 1.688E-05

Maximum Total Body Dose (mRem): 5.694E-06

Maximum Individual NG Dose Summary

Gas Receptor Location	Gamma (mRad)	Beta (mRad)	Total Body (mRem)	Skin (mRem)
WSW Near Milk 3.43 mi 248 deg	3.312E-04	1.646E-04	3.137E-04	4.884E-04
SSW Near Gard 4.4 mi 207 deg	1.866E-04	9.270E-05	1.767E-04	2.752E-04
SE Visitor	1.065E-03	5.291E-04	1.009E-03	1.571E-03
SE Nearest Res 1.52 mi 142 deg	2.459E-03	1.222E-03	2.329E-03	3.627E-03

Period: Ann, 2010

Site/Unit/Discharge Point: PSL2

Site Boundary NNG Doserate Summary - Note: All Doses in mRem/yr

Receptor	Agegroup	Bone	Liver	Total Body	Thyroid	Kidney	Lung	GI-Li	Skin
WNW Site Boundary - I	Infant	1.769E-03	1.769E-03	1.769E-03	1.769E-03	1.769E-03	1.769E-03	1.769E-03	0.000E+00
NW Site Boundary - In	Infant	1.989E-03	2.068E-03	1.905E-03	8.357E-03	1.871E-03	1.975E-03	3.315E-03	0.000E+00
Maximum Doserate by Organ:		1.989E-03	2.068E-03	1.905E-03	8.357E-03	1.871E-03	1.975E-03	3.315E-03	0.000E+00

Maximum Organ Doserate (mRem/yr): 8.357E-03

Maximum Total Body Doserate (mRem/yr): 1.905E-03

Site Boundary NG Doserate Summary

Gas Receptor Location	Gamma (mRad/yr)	Beta (mRad/yr)	Total Body (mRem/yr)	Skin (mRem/yr)
WNW Site Boundary	1.656E-03	1.656E-03	1.579E-03	2.697E-03
NW Site Boundary	1.922E-03	1.922E-03	1.833E-03	3.130E-03

Period: Ann, 2010

Site/Unit/Discharge Point: PSL2

Maximum Individual NNG Dose Summary - Note: All Doses in mRem

Receptor	Agegroup	Bone	Liver	Total Body	Thyroid	Kidney	Lung	GI-LI	Skin
SE Nearest Res - Adult	Adult	2.056E-03	2.056E-03	2.056E-03	2.114E-03	2.058E-03	2.628E-03	2.092E-03	0.000E+00
SE Nearest Res - Child	Child	2.056E-03	2.056E-03	2.055E-03	2.150E-03	2.056E-03	2.321E-03	2.072E-03	0.000E+00
SE Nearest Res - Infant	Infant	2.055E-03	2.055E-03	2.055E-03	2.143E-03	2.055E-03	2.156E-03	2.061E-03	0.000E+00
SE Nearest Res - Teenager	Teenager	2.056E-03	2.056E-03	2.056E-03	2.130E-03	2.058E-03	2.629E-03	2.092E-03	0.000E+00
SE Visitor - Adult	Adult	9.550E-04	9.549E-04	9.546E-04	9.799E-04	9.555E-04	1.205E-03	9.705E-04	0.000E+00
SSW Near Garden - Adult	Adult	1.593E-04	1.593E-04	1.592E-04	1.632E-04	1.594E-04	1.985E-04	1.617E-04	0.000E+00
SSW Near Garden - Child	Child	1.592E-04	1.592E-04	1.592E-04	1.657E-04	1.593E-04	1.774E-04	1.604E-04	0.000E+00
SSW Near Garden - Teenager	Teenager	1.593E-04	1.593E-04	1.592E-04	1.643E-04	1.594E-04	1.985E-04	1.617E-04	0.000E+00
WSW Near Milk - Adult	Adult	3.725E-04	3.738E-04	3.716E-04	5.489E-04	3.720E-04	4.382E-04	6.427E-04	0.000E+00
WSW Near Milk - Child	Child	3.841E-04	3.837E-04	3.715E-04	9.149E-04	3.721E-04	4.018E-04	6.577E-04	0.000E+00
WSW Near Milk - Infant	Infant	4.009E-04	4.052E-04	3.724E-04	1.671E-03	3.720E-04	3.841E-04	6.564E-04	0.000E+00
WSW Near Milk - Teenager	Teenager	8.069E-06	1.031E-05	4.145E-06	2.768E-04	6.103E-06	7.095E-05	5.072E-04	0.000E+00
Maximum Dose by Organ:		2.056E-03	2.056E-03	2.056E-03	2.150E-03	2.058E-03	2.629E-03	2.092E-03	0.000E+00

Maximum Organ Dose (mRem): 2.629E-03

Maximum Total Body Dose (mRem): 2.056E-03

Maximum Individual NG Dose Summary

Gas Receptor Location	Gamma (mRad)	Beta (mRad)	Total Body (mRem)	Skin (mRem)
WSW Near Milk 3.43 mi 248 deg	3.530E-04	2.401E-04	3.366E-04	5.749E-04
SSW Near Gard 4.4 mi 207 deg	1.988E-04	1.352E-04	1.896E-04	3.239E-04
SE Nearest Res 1.52 mi 142 deg	2.621E-03	1.783E-03	2.499E-03	4.269E-03
SE Visitor	1.135E-03	7.719E-04	1.082E-03	1.848E-03

Period: Ann, 2010

Site/Unit/Discharge Point: Site

Liquid Dose Summary - Note: All Doses in mRem

<u>Receptor</u>	<u>Agegroup</u>	<u>Bone</u>	<u>Liver</u>	<u>Total Body</u>	<u>Thyroid</u>	<u>Kidney</u>	<u>Lung</u>	<u>GI-Li</u>	<u>Skin</u>
Liquid Receptor - Teenager	Teenager	5.112E-02	2.152E-01	6.081E-02	4.234E-03	4.350E-03	2.442E-01	1.425E-01	0.000E+00
Liquid Receptor - Child	Child	2.532E-02	9.804E-02	3.017E-02	5.009E-03	1.891E-03	1.110E-01	6.449E-02	0.000E+00
Maximum Dose by Organ:		5.112E-02	2.152E-01	6.081E-02	5.009E-03	4.350E-03	2.442E-01	1.425E-01	0.000E+00

Maximum Organ Dose (mRem): 2.442E-01

Maximum Total Body Dose (mRem): 6.081E-02

Period: Ann, 2010

Site/Unit/Discharge Point: PSL1

Liquid Dose Summary - Note: All Doses in mRem

<u>Receptor</u>	<u>Agegroup</u>	<u>Bone</u>	<u>Liver</u>	<u>Total Body</u>	<u>Thyroid</u>	<u>Kidney</u>	<u>Lung</u>	<u>GI-Li</u>	<u>Skin</u>
Liquid Receptor - Child	Child	1.266E-02	4.902E-02	1.509E-02	2.505E-03	9.455E-04	5.552E-02	3.224E-02	0.000E+00
Liquid Receptor - Teenager	Teenager	2.556E-02	1.076E-01	3.041E-02	2.117E-03	2.175E-03	1.221E-01	7.127E-02	0.000E+00
Maximum Dose by Organ:		2.556E-02	1.076E-01	3.041E-02	2.505E-03	2.175E-03	1.221E-01	7.127E-02	0.000E+00

Maximum Organ Dose (mRem): 1.221E-01

Maximum Total Body Dose (mRem): 3.041E-02

Period: Ann, 2010

Site/Unit/Discharge Point: PSL2

Liquid Dose Summary - Note: All Doses in mRem

<u>Receptor</u>	<u>Agegroup</u>	<u>Bone</u>	<u>Liver</u>	<u>Total Body</u>	<u>Thyroid</u>	<u>Kidney</u>	<u>Lung</u>	<u>GI-LI</u>	<u>Skin</u>
Liquid Receptor - Teenager	Teenager	2.556E-02	1.076E-01	3.041E-02	2.117E-03	2.175E-03	1.221E-01	7.127E-02	0.000E+00
Liquid Receptor - Child	Child	1.266E-02	4.902E-02	1.509E-02	2.505E-03	9.455E-04	5.552E-02	3.224E-02	0.000E+00
Maximum Dose by Organ:		2.556E-02	1.076E-01	3.041E-02	2.505E-03	2.175E-03	1.221E-01	7.127E-02	0.000E+00

Maximum Organ Dose (mRem): 1.221E-01

Maximum Total Body Dose (mRem): 3.041E-02

**FLORIDA POWER & LIGHT COMPANY
ST. LUCIE UNITS 1 AND 2
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
JANUARY 1, 2010 THROUGH DECEMBER 31, 2010**

L-2011-064

ENCLOSURE 1
INFORMATION FOR GROUND WATER PROTECTION PROGRAM
(1 PAGE)

