



February 28, 2013

L-2013-078
10 CFR 50.36
10 CFR 50.36a

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

Re: St. Lucie Units 1 and 2
Docket Nos. 50-335 and 50-389
2012 Annual Radioactive Effluent Release Report

Pursuant to 10 CFR 50.36a(a)(2) and Technical Specification (TS) 6.9.1.7, enclosed is the 2012 Annual Radioactive Effluent Release Report for St. Lucie Units 1 and 2. The report provides information for the 12-month period beginning January 1, 2012 and ending December 31, 2012.

Enclosure 1 includes the Combined Annual Radioactive Effluent Release Report.
Enclosure 2 is a copy of *C-200, Offsite Dose Calculation Manual (ODCM), Revision 38*.
Enclosure 3 is a copy of the marked up pages from Revisions 36, 37 and 38 of the ODCM.

Please contact us with any questions regarding this submittal.

Sincerely,

Eric S. Katzman
Licensing Manager
St. Lucie Plant

ESK/tlt

Enclosures

A009
TE48
KRR

**FLORIDA POWER & LIGHT COMPANY
ST. LUCIE UNITS 1 AND 2
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
JANUARY 1, 2012 THROUGH DECEMBER 31, 2012**

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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 $2.0\text{E-}4$ $\mu\text{Ci/ml}$ 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 mrem to the whole 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 whole body and to less than or equal to 10 mrem 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 mrem to the whole body or any organ, except the thyroid, which shall be limited to less than or equal to 75 mrem.

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 $2.0\text{E-}04$ $\mu\text{Ci/ml}$ is used as the ECL for dissolved and entrained noble gases in liquid effluents.

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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.

The estimate of errors associated with values reported is as follows:

<u>Error Topic</u>	<u>LIQUID</u>		<u>GASEOUS</u>	
	<u>Avg. %</u>	<u>Max. %</u>	<u>Avg. %</u>	<u>Max. %</u>
Release Point Mixing	2	5	NA	NA
Sampling	1	5	2	5
Sample Preparation	1	5	1	5
Sample Analysis	3	10	3	10
Release Volume	2	5	4	15
Total %	9	30	10	35

(above values are examples only)

The predictability of error for radioactive releases can only be applied to nuclides that is predominant in sample spectrums. Nuclides that are near background relative to the predominant nuclides in a given sample could easily have errors greater than the above listed maximums.

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 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, Ni-63 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.

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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 2012, is retained onsite. This data is available for review by the NRC upon request. During 2012, the goal of >90% joint data recovery was met. Actual meteorological collected during the year was used in the offsite dose calculations in this report.

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 2012 operating data for the units was employed for the calculations to derive the total curies released for each unit.

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Carbon-14 Dose Estimation (continued)

The total amount of C-14 released in 2012 for Unit 1 was 6.68 Ci, and the total amount of C-14 released in 2012 for Unit 2 was 7.53 Ci. The highest calculated dose is found to be "Bone Dose" to a "Child" through "Inhalation". The total combined dose from C-14 through this pathway is 1.01E-01 mrem/yr.

Additionally, a "Child" consuming vegetables from the garden located at 2.0 miles in the WSW direction from the plant would have received a total combined "Bone Dose", including C-14, of 1.01E-1 mrem/yr.

Using the same release values, the dose to a visitor on site (Adult Lifeguard) is found to be 4.35E-01 mrem/yr, Total Body dose.

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

This is a 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).

2.0 SUPPLEMENTAL INFORMATION

2.1 Abnormal Releases or Abnormal Discharges

There were two abnormal (unplanned) releases or discharges from the site during the report period. Both releases were due to leaks associated with the gas analyzer in the Unit 1 Waste Gas Decay Tank system. In both cases, the equipment deficiencies were corrected and the gas analyzer was returned to service. Both of the unplanned releases were monitored by the Plant Vent Monitor that is installed on the Plant Vent Stack. Neither release challenged or exceeded site release or dose limits. Both releases are included in the gaseous portion of the tables, and are included in the site's dose calculations for the year.

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

There were no changes to the Land Use Census during 2012.

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2.5 Effluent Monitoring System Inoperability

There were no effluent monitors out of service for greater than 30 days.

2.6 Offsite Dose Calculation Manual Changes

Three revisions were made to the St. Lucie ODCM during the report period. The first revision was to change a procedure reference number to the new number used by the site. The second revision was to change the stated thermal megawatt output for Unit 1 after the power up-rate project. The third revision was to change the stated thermal megawatt output for Unit 2 after its power up-rate project.

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

None

2.9 Other

Ten batch 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. All ten 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 releases are listed below:

<u>Release start date</u>	<u>Volume of release</u>
May 17	5.97E6 gallons
June 1	1.05E7 gallons
June 12	1.05E7 gallons
June 25	1.07E7 gallons
August 22	1.94E7 gallons
September 15	4.60E6 gallons
September 22	6.97E6 gallons
October 19	5.26E6 gallons
November 13	2.92E6 gallons
December 12	3.19E5 gallons

A modification was made in the fourth quarter of 2012 to the discharge point for the South Settling Basin. A manual valve and flow measuring device were installed to more accurately control and account for the discharges from this pathway. The last discharge of the year was made to perform post maintenance testing of the new system to ensure satisfactory operation of the newly installed components.

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2.10 Groundwater Protection Program

Sentinel Well ID	H3 Jan 2012	H3 Feb 2012	H3 Mar 2012	H3 Apr 2012	H3 May 2012	H3 June 2012	H3 July 2012	H3 Aug 2012	H3 Sept 2012	H3 Oct 2012	H3 Nov 2012	H3 Dec 2012
Diesel - Unit 1 & 2	pCi/l	pCi/l	pCi/l	pCi/l	pCi/l	pCi/l	pCi/l	pCi/l	pCi/l	pCi/l	pCi/l	pCi/l
MW-3		552			359			385			794	
MW-4	996	2930		13400	7920	1980	499	426	497 / 594	532	486	532
MW-5	<MDC	<MDC			<MDC			<MDC			<MDC	
MW-6	904	825	752	1040	876	1300	1040	1000	978	789	1150	1410
MW-7	274	<MDC			235			357			271	
MW-15	313	349			364			306			1660	
MW-16	253	<MDC			231			1020			486	
MW-17	451	320	374	432	689	832	1400	2310	496	3570	3000	1510
MW-18D	955	955	753	881	718	807	882	1450	1520	1280	1470	1370
MW-19		308			<MDC			<MDC			<MDC	
MW-22D	200	190			<MDC			386			262	
MW-26		<MDC			<MDC			<MDC			<MDC	
RW-2	1550	1890	3440	5580	3890	2520	1220	911	584	478	418	558
RW-4	273	<MDC			<MDC	<MDC	<MDC	<MDC	187	<MDC	<MDC	
RW-5		<MDC			<MDC			227			<MDC	
MW-30		<MDC			327			289			300	
MW-31	418	478			499			501			347	
MW-32		526			372			361			468	
MW-33	1360	1190	1630	937	732	1100	1190	1420	1020	1000	1240	1010

Monitor Well ID	H3 Jan 2012	H3 Feb 2012	H3 Mar 2012	H3 Apr 2012	H3 May 2012	H3 June 2012	H3 July 2012	H3 Aug 2012	H3 Sept 2012	H3 Oct 2012	H3 Nov 2012	H3 Dec 2012
TLO Wells	pCi/l	pCi/l	pCi/l	pCi/l	pCi/l	pCi/l	pCi/l	pCi/l	pCi/l	pCi/l	pCi/l	pCi/l
Unit 1 - MW001	290	221	192	509	336	408	687	274	519	2090	1330	906
Unit 1 - MW002	506	584	<MDC	299	421	453	364	465	217	<MDC	215	<MDC
Unit 1 - MW003		212		271	285			490			201	
Unit 1 - MW004					663			593			329	472
Unit 1-MW005	809	691	571	519	462	1940	692	769	1280	433	610	693
Unit 2 - MW001	493	1780	852	1260	3080	3090	1740	657	65	251	<MDC	<MDC
Unit 2 - MW002	687	763	642	1390	1300	1040	501	254	<MDC	<MDC	<MDC	<MDC
Unit 2 - MW003	849	1080	732	801	403	692	595	653	423	592	518	688
Unit 2- MW004		1020	1140	1010	1150	1070		1190		1230	904	

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3.1 Gaseous Effluents & Liquid Effluents

3.2 Solid Waste Storage and Shipments

3.3 Dose Assessments

3.4 Visitor Dose

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ENCLOSURE 1
COMBINED ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
(50 PAGES)

3.0 TABLES

3.1 Gaseous Effluents & Liquid Effluents

3.2 Solid Waste Storage and Shipments

3.3 Dose Assessments

3.4 Visitor Dose

Reg. Guide 1.21, Table 5A and 5B - Liquid and Gas Batch Release Summary

Unit: Site

Starting: 1-Jan-2012 Ending: 31-Dec-2012

A. Liquid Batch Release Totals	Units	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Year Totals
1. Number of Batch Releases		13	27	33	17	90
2. Total duration of batch releases	min	7.54E+03	5.73E+04	3.35E+04	2.49E+04	1.23E+05
3. Maximum batch release duration	min	7.43E+02	1.63E+04	1.01E+04	1.47E+04	1.63E+04
4. Average batch release duration	min	5.80E+02	2.12E+03	1.02E+03	1.46E+03	1.37E+03
5. Minimum batch release duration	min	3.59E+02	2.02E+02	3.12E+02	4.85E+02	2.02E+02
B. Gas Batch Release Totals	Units	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Year Totals
1. Number of Batch Releases		35	53	46	51	185
2. Total duration of batch releases	min	6.51E+03	1.64E+04	1.66E+04	1.10E+04	5.05E+04
3. Maximum batch release duration	min	1.21E+03	1.44E+03	2.97E+03	5.69E+02	2.97E+03
4. Average batch release duration	min	1.86E+02	3.10E+02	3.60E+02	2.15E+02	2.73E+02
5. Minimum batch release duration	min	2.80E+01	3.10E+01	1.80E+01	1.20E+01	1.20E+01

Reg. Guide 1.21, Table 6A and 6B - Liquid and Gas Abnormal Release Summary

Unit: Site

Starting: 1-Jan-2012 Ending: 31-Dec-2012

A. Liquid Abnormal Release Totals		Units	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Year Totals
1. Number of Abnormal Releases			0	0	0	0	0
2. Total Activity of abnormal releases	Cl		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
B. Gas Abnormal Release Totals		Units	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Year Totals
1. Number of Abnormal Releases			0	1	1	0	2
2. Total Activity of abnormal releases	Cl		0.00E+00	1.82E-02	1.32E-02	0.00E+00	3.14E-02

Reg. Guide 1.21, Table 6A and 6B - Liquid and Gas Abnormal Release Summary

Unit: PSL1

Starting: 1-Jan-2012 Ending: 31-Dec-2012

A. Liquid Abnormal Release Totals	Units	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Year Totals
1. Number of Abnormal Releases		0	0	0	0	0
2. Total Activity of abnormal releases	Cl	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
B. Gas Abnormal Release Totals	Units	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Year Totals
1. Number of Abnormal Releases		0	1	1	0	2
2. Total Activity of abnormal releases	Cl	0.00E+00	1.82E-02	1.32E-02	0.00E+00	3.14E-02

Reg. Guide 1.21, Table 6A and 6B - Liquid and Gas Abnormal Release Summary

Unit: PSL2

Starting: 1-Jan-2012 Ending: 31-Dec-2012

A. Liquid Abnormal Release Totals		Units	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Year Totals
1. Number of Abnormal Releases			0	0	0	0	0
2. Total Activity of abnormal releases	Cl		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
B. Gas Abnormal Release Totals		Units	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Year Totals
1. Number of Abnormal Releases			0	0	0	0	0
2. Total Activity of abnormal releases	Cl		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Reg. Guide 1.21, Table 1A, Gaseous Effluents - Summation of All Releases

Unit: Site

Starting: 1-Jan-2012 Ending: 31-Dec-2012

Total Release	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Annual	Uncertainty
A. Fission and Activation Gases							
1. Total Release	Ci	5.20E-01	3.03E+00	3.86E+00	6.53E-01	8.06E+00	
2. Average Release Rate for Period	uCi/s	6.62E-02	3.85E-01	4.86E-01	8.21E-02	2.55E-01	
3. Percent of Limit	%						
B. Iodines and Halogens							
1. Total Release	Ci	0.00E+00	0.00E+00	3.68E-07	3.13E-07	6.81E-07	
2. Average Release Rate for Period	uCi/s	0.00E+00	0.00E+00	4.63E-08	3.94E-08	2.15E-08	
3. Percent of Limit	%						
C. Particulates							
1. Total Release	Ci	2.62E-07	9.03E-06	1.31E-05	0.00E+00	2.24E-05	
2. Average Release Rate for Period	uCi/s	3.34E-08	1.15E-06	1.65E-06	0.00E+00	7.08E-07	
3. Percent of Limit	%						
D. Tritium							
1. Total Release	Ci	1.25E+01	3.67E+00	3.98E+01	2.23E+01	7.83E+01	
2. Average Release Rate for Period	uCi/s	1.59E+00	4.67E-01	5.01E+00	2.81E+00	2.48E+00	
3. Percent of Limit	%						
E. Gross Alpha							
1. Total Release	Ci	4.71E-08	1.16E-07	7.20E-08	5.11E-08	2.86E-07	
F. Carbon-14							
1. Total Release	Ci	3.19E+00	4.91E+00	3.63E+00	2.48E+00	1.42E+01	
2. Average Release Rate for Period	uCi/s	4.06E-01	6.25E-01	4.56E-01	3.12E-01	4.50E-01	
3. Percent of Limit	%						

Reg. Guide 1.21, Table 1B, Gaseous Effluents - Ground Level Release - Continuous Mode

Unit: Site

Starting: 1-Jan-2012 Ending: 31-Dec-2012

Nuclides Released	Units	Continuous Mode				
		1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Annual
A. Fission and Activation Gases						
Kr-88	Ci	0.00E+00	2.01E-01	1.33E+00	0.00E+00	1.53E+00
Xe-131m	Ci	0.00E+00	0.00E+00	1.25E+00	0.00E+00	1.25E+00
Xe-133m	Ci	0.00E+00	2.33E-01	0.00E+00	0.00E+00	2.33E-01
Xe-133	Ci	0.00E+00	1.14E+00	0.00E+00	1.23E-01	1.26E+00
Xe-135	Ci	2.52E-01	5.09E-02	0.00E+00	0.00E+00	3.03E-01
Total For Period	Ci	2.52E-01	1.63E+00	2.58E+00	1.23E-01	4.58E+00
B. Iodines and Halogens						
I-131	Ci	0.00E+00	0.00E+00	3.68E-07	3.13E-07	6.81E-07
C. Particulates						
Co-60	Ci	0.00E+00	1.66E-06	6.08E-06	0.00E+00	7.74E-06
Cs-137	Ci	2.62E-07	6.41E-06	6.60E-06	0.00E+00	1.33E-05
Ce-144	Ci	0.00E+00	9.65E-07	4.10E-07	0.00E+00	1.38E-06
Total For Period	Ci	2.62E-07	9.03E-06	1.31E-05	0.00E+00	2.24E-05
D. Tritium						
H-3	Ci	1.24E+01	3.55E+00	3.93E+01	2.22E+01	7.74E+01
E. Gross Alpha						
G-Alpha	Ci	4.71E-08	1.16E-07	7.20E-08	5.11E-08	2.86E-07

If Not Detected, Nuclide is Not Reported. Zeroes in this table indicates that no radioactivity was present at detectable levels.

User: Al Locke

[Server]: PSLSA37 [Database]: NEPSOEMP

Reg. Guide 1.21, Table 1B, Gaseous Effluents - Ground Level Release - Continuous Mode**Unit: Site****Starting: 1-Jan-2012 Ending: 31-Dec-2012**

Nuclides Released	Units	Continuous Mode				
		1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Annual
F. Carbon-14						
C-14	CI	3.19E+00	4.91E+00	3.63E+00	2.48E+00	1.42E+01

If Not Detected, Nuclide is Not Reported. Zeroes in this table indicates that no radioactivity was present at detectable levels.

User: Al Locke

[Server]: PSLSA37 [Database]: NEPSOEMP

Reg. Guide 1.21, Table 1B, Gaseous Effluents - Ground Level Release - Batch Mode**Unit: Site****Starting: 1-Jan-2012 Ending: 31-Dec-2012**

Nuclides Released	Units	Batch Mode				
		1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Annual
A. Fission and Activation Gases						
Ar-41	Ci	2.00E-01	1.26E+00	5.97E-01	3.75E-01	2.43E+00
Kr-85m	Ci	0.00E+00	0.00E+00	1.79E-04	0.00E+00	1.79E-04
Kr-85	Ci	0.00E+00	0.00E+00	0.00E+00	1.06E-04	1.06E-04
Kr-87	Ci	1.72E-04	1.56E-04	0.00E+00	0.00E+00	3.28E-04
Kr-88	Ci	0.00E+00	0.00E+00	1.15E-04	6.64E-04	7.78E-04
Kr-89	Ci	0.00E+00	2.94E-02	3.92E-01	1.89E-02	4.40E-01
Xe-131m	Ci	4.75E-05	5.01E-05	3.61E-05	1.13E-03	1.26E-03
Xe-133m	Ci	6.22E-04	5.28E-04	1.94E-03	9.93E-04	4.08E-03
Xe-133	Ci	4.00E-02	1.06E-01	2.04E-01	1.07E-01	4.57E-01
Xe-135m	Ci	0.00E+00	2.26E-04	1.38E-03	0.00E+00	1.61E-03
Xe-135	Ci	1.50E-04	1.88E-03	4.61E-03	3.60E-03	1.02E-02
Xe-137	Ci	2.77E-02	0.00E+00	8.46E-02	2.17E-02	1.34E-01
Xe-138	Ci	0.00E+00	5.81E-04	1.59E-04	3.93E-04	1.13E-03
Total For Period	Ci	2.69E-01	1.40E+00	1.29E+00	5.30E-01	3.48E+00
B. Iodines and Halogens						
No Nuclides Found	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
C. Particulates						
No Nuclides Found	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
D. Tritium						
H-3	Ci	5.64E-02	1.28E-01	5.65E-01	1.62E-01	9.12E-01

If Not Detected, Nuclide is Not Reported. Zeroes in this table indicates that no radioactivity was present at detectable levels.

User: Al Locke

[Server]: PLSA37 [Database]: NEPSOEMP

Reg. Guide 1.21, Table 1B, Gaseous Effluents - Ground Level Release - Batch Mode**Unit: Site****Starting: 1-Jan-2012 Ending: 31-Dec-2012**

Nuclides Released	Units	Batch Mode				
		1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Annual
E. Gross Alpha						
No Nuclides Found	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
F. Carbon-14						
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.

User: Al Locke

[Server]: PSLSA37 [Database]: NEPSOEMP

Reg. Guide 1.21, Table 1A, Gaseous Effluents - Summation of All Releases

Unit: PSL1

Starting: 1-Jan-2012 Ending: 31-Dec-2012

Total Release	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Annual	Uncertainty
A. Fission and Activation Gases							
1. Total Release	Ci	6.70E-04	1.51E+00	1.35E+00	4.59E-01	3.32E+00	
2. Average Release Rate for Period	uCi/s	8.53E-05	1.93E-01	1.70E-01	5.77E-02	1.05E-01	
3. Percent of Limit	%						
B. Iodines and Halogens							
1. Total Release	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
2. Average Release Rate for Period	uCi/s	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
3. Percent of Limit	%						
C. Particulates							
1. Total Release	Ci	0.00E+00	6.47E-06	1.27E-05	0.00E+00	1.91E-05	
2. Average Release Rate for Period	uCi/s	0.00E+00	8.23E-07	1.60E-06	0.00E+00	6.06E-07	
3. Percent of Limit	%						
D. Tritium							
1. Total Release	Ci	4.62E+00	1.36E+00	2.61E+01	1.86E+01	5.07E+01	
2. Average Release Rate for Period	uCi/s	5.88E-01	1.74E-01	3.29E+00	2.34E+00	1.60E+00	
3. Percent of Limit	%						
E. Gross Alpha							
1. Total Release	Ci	2.56E-08	3.27E-08	2.40E-08	2.01E-08	1.03E-07	
F. Carbon-14							
1. Total Release	Ci	0.00E+00	1.72E+00	2.48E+00	2.48E+00	6.69E+00	
2. Average Release Rate for Period	uCi/s	0.00E+00	2.19E-01	3.12E-01	3.12E-01	2.11E-01	
3. Percent of Limit	%						

Reg. Guide 1.21, Table 1B, Gaseous Effluents - Ground Level Release - Continuous Mode

Unit: PSL1

Starting: 1-Jan-2012 Ending: 31-Dec-2012

Nuclides Released	Units	Continuous Mode				
		1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Annual
A. Fission and Activation Gases						
Kr-88	Ci	0.00E+00	0.00E+00	5.48E-01	0.00E+00	5.48E-01
Xe-133m	Ci	0.00E+00	2.33E-01	0.00E+00	0.00E+00	2.33E-01
Xe-133	Ci	0.00E+00	1.14E+00	0.00E+00	0.00E+00	1.14E+00
Total For Period	Ci	0.00E+00	1.38E+00	5.48E-01	0.00E+00	1.92E+00
B. Iodines and Halogens						
No Nuclides Found	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
C. Particulates						
Co-60	Ci	0.00E+00	1.66E-06	6.08E-06	0.00E+00	7.74E-06
Cs-137	Ci	0.00E+00	4.81E-06	6.60E-06	0.00E+00	1.14E-05
Total For Period	Ci	0.00E+00	6.47E-06	1.27E-05	0.00E+00	1.91E-05
D. Tritium						
H-3	Ci	4.61E+00	1.34E+00	2.60E+01	1.85E+01	5.04E+01
E. Gross Alpha						
G-Alpha	Ci	2.56E-08	3.27E-08	2.40E-08	2.01E-08	1.03E-07
F. Carbon-14						
C-14	Ci	0.00E+00	1.72E+00	2.48E+00	2.48E+00	6.69E+00

If Not Detected, Nuclide is Not Reported. Zeroes in this table indicates that no radioactivity was present at detectable levels.

User: Al Locke

[Server]: PSLSA37 [Database]: NEPSOEMP

Reg. Guide 1.21, Table 1B, Gaseous Effluents - Ground Level Release - Batch Mode**Unit: PSL1****Starting: 1-Jan-2012 Ending: 31-Dec-2012**

Nuclides Released	Units	Batch Mode				
		1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Annual
A. Fission and Activation Gases						
Ar-41	CI	0.00E+00	1.23E-01	3.12E-01	3.23E-01	7.58E-01
Kr-85m	CI	0.00E+00	0.00E+00	1.79E-04	0.00E+00	1.79E-04
Kr-85	CI	0.00E+00	0.00E+00	0.00E+00	1.06E-04	1.06E-04
Kr-88	CI	0.00E+00	0.00E+00	1.15E-04	6.64E-04	7.78E-04
Kr-89	CI	0.00E+00	0.00E+00	3.92E-01	1.89E-02	4.11E-01
Xe-131m	CI	4.75E-05	5.01E-05	3.61E-05	1.13E-03	1.26E-03
Xe-133m	CI	0.00E+00	5.28E-04	1.94E-03	9.93E-04	3.46E-03
Xe-133	CI	5.59E-04	1.33E-02	7.40E-02	8.92E-02	1.77E-01
Xe-135m	CI	0.00E+00	2.26E-04	1.38E-03	0.00E+00	1.61E-03
Xe-135	CI	6.44E-05	1.46E-03	4.61E-03	3.27E-03	9.40E-03
Xe-137	CI	0.00E+00	0.00E+00	1.35E-02	2.17E-02	3.52E-02
Xe-138	CI	0.00E+00	0.00E+00	1.59E-04	1.11E-05	1.70E-04
Total For Period	CI	6.70E-04	1.39E-01	8.00E-01	4.59E-01	1.40E+00
B. Iodines and Halogens						
No Nuclides Found	CI	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
C. Particulates						
No Nuclides Found	CI	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
D. Tritium						
H-3	CI	5.69E-03	2.76E-02	1.60E-01	1.52E-01	3.46E-01
E. Gross Alpha						
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.

User: Al Locke

[Server]: PSLSA37 [Database]: NEPSOEMP

Reg. Guide 1.21, Table 1B, Gaseous Effluents - Ground Level Release - Batch Mode**Unit: PSL1****Starting: 1-Jan-2012 Ending: 31-Dec-2012**

Nuclides Released	Units	Batch Mode				
		1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Annual
F. Carbon-14						
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.

User: Al Locke

[Server]: PSLSA37 [Database]: NEPSOEMP

Reg. Guide 1.21, Table 1A, Gaseous Effluents - Summation of All Releases

Unit: PSL2

Starting: 1-Jan-2012 Ending: 31-Dec-2012

Total Release	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Annual	Uncertainty
A. Fission and Activation Gases							
1. Total Release	CI	5.20E-01	1.51E+00	2.51E+00	1.94E-01	4.74E+00	
2. Average Release Rate for Period	uCi/s	6.61E-02	1.92E-01	3.16E-01	2.44E-02	1.50E-01	
3. Percent of Limit	%						
B. Iodines and Halogens							
1. Total Release	CI	0.00E+00	0.00E+00	3.68E-07	3.13E-07	6.81E-07	
2. Average Release Rate for Period	uCi/s	0.00E+00	0.00E+00	4.63E-08	3.94E-08	2.15E-08	
3. Percent of Limit	%						
C. Particulates							
1. Total Release	CI	2.62E-07	2.56E-06	4.10E-07	0.00E+00	3.23E-06	
2. Average Release Rate for Period	uCi/s	3.34E-08	3.26E-07	5.16E-08	0.00E+00	1.02E-07	
3. Percent of Limit	%						
D. Tritium							
1. Total Release	CI	7.85E+00	2.31E+00	1.37E+01	3.71E+00	2.75E+01	
2. Average Release Rate for Period	uCi/s	9.98E-01	2.94E-01	1.72E+00	4.67E-01	8.71E-01	
3. Percent of Limit	%						
E. Gross Alpha							
1. Total Release	CI	2.15E-08	8.35E-08	4.80E-08	3.09E-08	1.84E-07	
F. Carbon-14							
1. Total Release	CI	3.19E+00	3.19E+00	1.14E+00	0.00E+00	7.53E+00	
2. Average Release Rate for Period	uCi/s	4.06E-01	4.06E-01	1.44E-01	0.00E+00	2.38E-01	
3. Percent of Limit	%						

Reg. Guide 1.21, Table 1B, Gaseous Effluents - Ground Level Release - Continuous Mode

Unit: PSL2

Starting: 1-Jan-2012 Ending: 31-Dec-2012

Nuclides Released	Units	Continuous Mode				
		1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Annual
A. Fission and Activation Gases						
Kr-88	Ci	0.00E+00	2.01E-01	7.81E-01	0.00E+00	9.82E-01
Xe-131m	Ci	0.00E+00	0.00E+00	1.25E+00	0.00E+00	1.25E+00
Xe-133	Ci	0.00E+00	0.00E+00	0.00E+00	1.23E-01	1.23E-01
Xe-135	Ci	2.52E-01	5.09E-02	0.00E+00	0.00E+00	3.03E-01
Total For Period	Ci	2.52E-01	2.51E-01	2.03E+00	1.23E-01	2.65E+00
B. Iodines and Halogens						
I-131	Ci	0.00E+00	0.00E+00	3.68E-07	3.13E-07	6.81E-07
C. Particulates						
Cs-137	Ci	2.62E-07	1.60E-06	0.00E+00	0.00E+00	1.86E-06
Ce-144	Ci	0.00E+00	9.65E-07	4.10E-07	0.00E+00	1.38E-06
Total For Period	Ci	2.62E-07	2.56E-06	4.10E-07	0.00E+00	3.23E-06
D. Tritium						
H-3	Ci	7.80E+00	2.21E+00	1.33E+01	3.70E+00	2.70E+01
E. Gross Alpha						
G-Alpha	Ci	2.15E-08	8.35E-08	4.80E-08	3.09E-08	1.84E-07
F. Carbon-14						
C-14	Ci	3.19E+00	3.19E+00	1.14E+00	0.00E+00	7.53E+00

If Not Detected, Nuclide is Not Reported. Zeroes in this table indicates that no radioactivity was present at detectable levels.

User: Al Locke

[Server]: PSLSA37 [Database]: NEPSOEMP

Reg. Guide 1.21, Table 1B, Gaseous Effluents - Ground Level Release - Batch Mode**Unit: PSL2****Starting: 1-Jan-2012 Ending: 31-Dec-2012**

Nuclides Released	Units	Batch Mode				
		1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Annual
A. Fission and Activation Gases						
Ar-41	CI	2.00E-01	1.14E+00	2.85E-01	5.24E-02	1.67E+00
Kr-87	CI	1.72E-04	1.56E-04	0.00E+00	0.00E+00	3.28E-04
Kr-89	CI	0.00E+00	2.94E-02	0.00E+00	0.00E+00	2.94E-02
Xe-133m	CI	6.22E-04	0.00E+00	0.00E+00	0.00E+00	6.22E-04
Xe-133	CI	3.95E-02	9.29E-02	1.30E-01	1.81E-02	2.80E-01
Xe-135	CI	8.58E-05	4.27E-04	0.00E+00	3.29E-04	8.41E-04
Xe-137	CI	2.77E-02	0.00E+00	7.11E-02	0.00E+00	9.87E-02
Xe-138	CI	0.00E+00	5.81E-04	0.00E+00	3.82E-04	9.63E-04
Total For Period	CI	2.68E-01	1.26E+00	4.86E-01	7.12E-02	2.09E+00
B. Iodines and Halogens						
No Nuclides Found	CI	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
C. Particulates						
No Nuclides Found	CI	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
D. Tritium						
H-3	CI	5.07E-02	1.01E-01	4.05E-01	9.85E-03	5.66E-01
E. Gross Alpha						
No Nuclides Found	CI	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
F. Carbon-14						
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.

User: Al Locke

[Server]: PSLSA37 [Database]: NEPSOEMP

Reg. Guide 1.21, Table 2A, Liquid Effluents - Summation of All Releases

Unit: Site

Starting: 1-Jan-2012 Ending: 31-Dec-2012

Total Release	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Annual	Uncertainty
A. Fission and Activation Products							
1. Total Release	CI	2.06E-02	2.94E-02	1.80E-02	6.86E-03	7.49E-02	
2. Average Concentration	uCi/mL	1.28E-09	1.15E-10	2.59E-10	1.25E-10	1.89E-10	
3. Percent of Limit	%						
B. Tritium							
1. Total Release	CI	2.30E+01	4.24E+01	7.90E+01	7.78E+01	2.22E+02	
2. Average Concentration	uCi/mL	1.43E-06	1.66E-07	1.14E-06	1.42E-06	5.61E-07	
3. Percent of Limit	%						
C. Dissolved and Entrained Gases							
1. Total Release	CI	0.00E+00	4.02E-03	1.44E-03	4.35E-04	5.89E-03	
2. Average Concentration	uCi/mL	0.00E+00	1.57E-11	2.07E-11	7.94E-12	1.49E-11	
3. Percent of Limit	%						
D. Gross Alpha Activity							
1. Total Release	CI	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
2. Average Concentration	uCi/mL	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
E. Primary Liquid Release Volume							
1. Total Release	Liters	1.13E+06	1.44E+08	1.20E+08	2.14E+07	2.87E+08	
F. Dilution Volume							
1. Total Release	Liters	1.61E+10	2.56E+11	6.96E+10	5.48E+10	3.96E+11	
G. Average Stream Flow							
1. Total Release	m ³ /s	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	

Reg. Guide 1.21, Table 2A, Liquid Effluents - Summation of All Releases

Unit: PSL1

Starting: 1-Jan-2012 Ending: 31-Dec-2012

Total Release	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Annual	Uncertainty
A. Fission and Activation Products							
1. Total Release	Ci	1.03E-02	1.47E-02	9.01E-03	3.43E-03	3.74E-02	
2. Average Concentration	uCi/mL	1.28E-09	1.15E-10	2.59E-10	1.25E-10	1.89E-10	
3. Percent of Limit	%						
B. Tritium							
1. Total Release	Ci	1.15E+01	2.12E+01	3.95E+01	3.89E+01	1.11E+02	
2. Average Concentration	uCi/mL	1.43E-06	1.66E-07	1.14E-06	1.42E-06	5.61E-07	
3. Percent of Limit	%						
C. Dissolved and Entrained Gases							
1. Total Release	Ci	0.00E+00	2.01E-03	7.22E-04	2.18E-04	2.95E-03	
2. Average Concentration	uCi/mL	0.00E+00	1.57E-11	2.07E-11	7.94E-12	1.49E-11	
3. Percent of Limit	%						
D. Gross Alpha Activity							
1. Total Release	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
2. Average Concentration	uCi/mL	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
E. Primary Liquid Release Volume							
1. Total Release	Liters	5.64E+05	7.22E+07	5.99E+07	1.07E+07	1.43E+08	
F. Dilution Volume							
1. Total Release	Liters	8.04E+09	1.28E+11	3.48E+10	2.74E+10	1.98E+11	
G. Average Stream Flow							
1. Total Release	m ³ /s	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	

Reg. Guide 1.21, Table 2A, Liquid Effluents - Summation of All Releases

Unit: PSL2

Starting: 1-Jan-2012 Ending: 31-Dec-2012

Total Release	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Annual	Uncertainty
A. Fission and Activation Products							
1. Total Release	CI	1.03E-02	1.47E-02	9.01E-03	3.43E-03	3.74E-02	
2. Average Concentration	uCi/mL	1.28E-09	1.15E-10	2.59E-10	1.25E-10	1.89E-10	
3. Percent of Limit	%						
B. Tritium							
1. Total Release	CI	1.15E+01	2.12E+01	3.95E+01	3.89E+01	1.11E+02	
2. Average Concentration	uCi/mL	1.43E-06	1.66E-07	1.14E-06	1.42E-06	5.61E-07	
3. Percent of Limit	%						
C. Dissolved and Entrained Gases							
1. Total Release	CI	0.00E+00	2.01E-03	7.22E-04	2.18E-04	2.95E-03	
2. Average Concentration	uCi/mL	0.00E+00	1.57E-11	2.07E-11	7.94E-12	1.49E-11	
3. Percent of Limit	%						
D. Gross Alpha Activity							
1. Total Release	CI	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
2. Average Concentration	uCi/mL	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
E. Primary Liquid Release Volume							
1. Total Release	Liters	5.64E+05	7.22E+07	5.99E+07	1.07E+07	1.43E+08	
F. Dilution Volume							
1. Total Release	Liters	8.04E+09	1.28E+11	3.48E+10	2.74E+10	1.98E+11	
G. Average Stream Flow							
1. Total Release	m^3/s	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	

Reg. Guide 1.21, Table 2B, Liquid Effluents - Batch Mode**Unit: PSL1****Starting: 1-Jan-2012 Ending: 31-Dec-2012**

Nuclides Released	Units	Batch Mode				
		1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Annual
A. Fission and Activation Products						
C-14	Ci	7.05E-03	1.08E-02	2.67E-03	9.36E-04	2.14E-02
Na-24	Ci	0.00E+00	0.00E+00	4.98E-06	0.00E+00	4.98E-06
Cr-51	Ci	1.42E-04	4.23E-05	5.41E-04	2.96E-04	1.02E-03
Mn-54	Ci	1.80E-05	1.04E-04	8.52E-05	5.81E-05	2.65E-04
Fe-55	Ci	1.67E-03	1.03E-03	0.00E+00	0.00E+00	2.70E-03
Fe-59	Ci	2.35E-05	3.06E-05	3.66E-05	1.13E-05	1.02E-04
Co-57	Ci	0.00E+00	1.83E-06	1.10E-05	2.65E-06	1.54E-05
Co-58	Ci	3.66E-04	4.38E-04	6.85E-04	9.16E-04	2.41E-03
Co-60	Ci	1.65E-04	7.43E-04	5.96E-04	3.64E-04	1.87E-03
Zn-65	Ci	4.74E-06	7.77E-06	3.28E-05	1.97E-06	4.73E-05
Br-82	Ci	2.13E-06	1.22E-06	3.81E-06	9.11E-07	8.07E-06
Sr-91	Ci	0.00E+00	1.45E-05	2.35E-05	0.00E+00	3.80E-05
Zr-95	Ci	7.50E-05	1.42E-04	8.72E-05	7.34E-05	3.78E-04
Zr-97	Ci	6.09E-05	0.00E+00	1.59E-04	5.35E-05	2.73E-04
Nb-95	Ci	1.49E-04	2.65E-04	1.49E-04	1.24E-04	6.87E-04
Nb-97	Ci	2.33E-04	3.88E-04	4.30E-04	1.45E-04	1.20E-03
Tc-99m	Ci	0.00E+00	0.00E+00	1.38E-06	0.00E+00	1.38E-06
Ru-103	Ci	1.22E-06	0.00E+00	2.40E-06	0.00E+00	3.62E-06
Ag-110m	Ci	1.88E-04	3.51E-04	3.48E-04	1.16E-04	1.00E-03
Sn-113	Ci	0.00E+00	1.80E-06	1.25E-05	3.19E-06	1.74E-05
Sb-122	Ci	0.00E+00	0.00E+00	3.44E-05	0.00E+00	3.44E-05
Sb-124	Ci	3.27E-05	1.32E-05	6.08E-04	2.34E-05	6.77E-04
Sb-125	Ci	1.04E-04	3.51E-04	2.27E-03	1.93E-04	2.92E-03
Te-129m	Ci	0.00E+00	0.00E+00	1.56E-04	8.54E-05	2.41E-04
Te-132	Ci	0.00E+00	0.00E+00	1.41E-05	0.00E+00	1.41E-05
I-131	Ci	0.00E+00	0.00E+00	4.29E-06	3.96E-06	8.25E-06

If Not Detected, Nuclide is Not Reported. Zeroes in this table indicates that no radioactivity was present at detectable levels.

User: Al Locke

[Server]: PSLSA37 [Database]: NEPSOEMP

Reg. Guide 1.21, Table 2B, Liquid Effluents - Batch Mode**Unit: PSL1****Starting: 1-Jan-2012 Ending: 31-Dec-2012**

Nuclides Released	Units	Batch Mode				
		1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Annual
I-132	CI	0.00E+00	0.00E+00	7.63E-06	0.00E+00	7.63E-06
I-133	CI	0.00E+00	0.00E+00	1.18E-05	0.00E+00	1.18E-05
I-134	CI	0.00E+00	0.00E+00	1.69E-06	0.00E+00	1.69E-06
Cs-136	CI	0.00E+00	1.43E-06	0.00E+00	2.34E-06	3.77E-06
Cs-137	CI	4.97E-06	3.18E-06	9.92E-06	2.57E-06	2.06E-05
Cs-138	CI	0.00E+00	0.00E+00	0.00E+00	1.51E-05	1.51E-05
Ba-140	CI	5.34E-06	0.00E+00	1.34E-05	0.00E+00	1.87E-05
Total For Period	CI	1.03E-02	1.47E-02	9.01E-03	3.43E-03	3.74E-02
B. Tritium						
H-3	CI	1.15E+01	2.12E+01	3.95E+01	3.89E+01	1.11E+02
C. Dissolved and Entrained Gases						
Ar-41	CI	0.00E+00	0.00E+00	2.93E-06	0.00E+00	2.93E-06
Xe-133m	CI	0.00E+00	0.00E+00	0.00E+00	1.35E-05	1.35E-05
Xe-133	CI	0.00E+00	2.01E-03	6.61E-04	1.61E-04	2.83E-03
Xe-135m	CI	0.00E+00	0.00E+00	0.00E+00	3.21E-06	3.21E-06
Xe-135	CI	0.00E+00	0.00E+00	5.79E-05	3.96E-05	9.74E-05
Total For Period	CI	0.00E+00	2.01E-03	7.22E-04	2.18E-04	2.95E-03
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.

User: Al Locke

[Server]: PSLSA37 [Database]: NEPSOEMP

Reg. Guide 1.21, Table 2B, Liquid Effluents - Batch Mode

Unit: PSL2

Starting: 1-Jan-2012 Ending: 31-Dec-2012

Nuclides Released	Units	Batch Mode				
		1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Annual
A. Fission and Activation Products						
C-14	CI	7.05E-03	1.08E-02	2.67E-03	9.36E-04	2.14E-02
Na-24	CI	0.00E+00	0.00E+00	4.98E-06	0.00E+00	4.98E-06
Cr-51	CI	1.42E-04	4.23E-05	5.41E-04	2.96E-04	1.02E-03
Mn-54	CI	1.80E-05	1.04E-04	8.52E-05	5.81E-05	2.65E-04
Fe-55	CI	1.67E-03	1.03E-03	0.00E+00	0.00E+00	2.70E-03
Fe-59	CI	2.35E-05	3.06E-05	3.66E-05	1.13E-05	1.02E-04
Co-57	CI	0.00E+00	1.83E-06	1.10E-05	2.65E-06	1.54E-05
Co-58	CI	3.66E-04	4.38E-04	6.85E-04	9.16E-04	2.41E-03
Co-60	CI	1.65E-04	7.43E-04	5.96E-04	3.64E-04	1.87E-03
Zn-65	CI	4.74E-06	7.77E-06	3.28E-05	1.97E-06	4.73E-05
Br-82	CI	2.13E-06	1.22E-06	3.81E-06	9.11E-07	8.07E-06
Sr-91	CI	0.00E+00	1.45E-05	2.35E-05	0.00E+00	3.80E-05
Zr-95	CI	7.50E-05	1.42E-04	8.72E-05	7.34E-05	3.78E-04
Zr-97	CI	6.09E-05	0.00E+00	1.59E-04	5.35E-05	2.73E-04
Nb-95	CI	1.49E-04	2.65E-04	1.49E-04	1.24E-04	6.87E-04
Nb-97	CI	2.33E-04	3.88E-04	4.30E-04	1.45E-04	1.20E-03
Tc-99m	CI	0.00E+00	0.00E+00	1.38E-06	0.00E+00	1.38E-06
Ru-103	CI	1.22E-06	0.00E+00	2.40E-06	0.00E+00	3.62E-06
Ag-110m	CI	1.88E-04	3.51E-04	3.48E-04	1.16E-04	1.00E-03
Sn-113	CI	0.00E+00	1.80E-06	1.25E-05	3.19E-06	1.74E-05
Sb-122	CI	0.00E+00	0.00E+00	3.44E-05	0.00E+00	3.44E-05
Sb-124	CI	3.27E-05	1.32E-05	6.08E-04	2.34E-05	6.77E-04
Sb-125	CI	1.04E-04	3.51E-04	2.27E-03	1.93E-04	2.92E-03
Te-129m	CI	0.00E+00	0.00E+00	1.56E-04	8.54E-05	2.41E-04
Te-132	CI	0.00E+00	0.00E+00	1.41E-05	0.00E+00	1.41E-05
I-131	CI	0.00E+00	0.00E+00	4.29E-06	3.96E-06	8.25E-06

If Not Detected, Nuclide is Not Reported. Zeroes in this table indicates that no radioactivity was present at detectable levels.

User: Al Locke

[Server]: PSLSA37 [Database]: NEPSOEMP

Reg. Guide 1.21, Table 2B, Liquid Effluents - Batch Mode**Unit: PSL2****Starting: 1-Jan-2012 Ending: 31-Dec-2012**

Nuclides Released	Units	Batch Mode				
		1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Annual
I-132	CI	0.00E+00	0.00E+00	7.63E-06	0.00E+00	7.63E-06
I-133	CI	0.00E+00	0.00E+00	1.18E-05	0.00E+00	1.18E-05
I-134	CI	0.00E+00	0.00E+00	1.69E-06	0.00E+00	1.69E-06
Cs-136	CI	0.00E+00	1.43E-06	0.00E+00	2.34E-06	3.77E-06
Cs-137	CI	4.97E-06	3.18E-06	9.92E-06	2.57E-06	2.06E-05
Cs-138	CI	0.00E+00	0.00E+00	0.00E+00	1.51E-05	1.51E-05
Ba-140	CI	5.34E-06	0.00E+00	1.34E-05	0.00E+00	1.87E-05
Total For Period	CI	1.03E-02	1.47E-02	9.01E-03	3.43E-03	3.74E-02
B. Tritium						
H-3	CI	1.15E+01	2.12E+01	3.95E+01	3.89E+01	1.11E+02
C. Dissolved and Entrained Gases						
Ar-41	CI	0.00E+00	0.00E+00	2.93E-06	0.00E+00	2.93E-06
Xe-133m	CI	0.00E+00	0.00E+00	0.00E+00	1.35E-05	1.35E-05
Xe-133	CI	0.00E+00	2.01E-03	6.61E-04	1.61E-04	2.83E-03
Xe-135m	CI	0.00E+00	0.00E+00	0.00E+00	3.21E-06	3.21E-06
Xe-135	CI	0.00E+00	0.00E+00	5.79E-05	3.96E-05	9.74E-05
Total For Period	CI	0.00E+00	2.01E-03	7.22E-04	2.18E-04	2.95E-03
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.

User: Al Locke

[Server]: PSLSA37 [Database]: NEPSOEMP

Reg. Guide 1.21, Table 2B, Liquid Effluents - Continuous Mode

Unit: Site

Starting: 1-Jan-2012 Ending: 31-Dec-2012

Nuclides Released	Units	Continuous Mode				
		1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Annual
A. Fission and Activation Products						
No Nuclides Found	CI	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
B. Tritium						
No Nuclides Found	CI	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
C. Dissolved and Entrained Gases						
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.

User: Al Locke

[Server]: PSLSA37 [Database]: NEPSOEMP

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Page 1

Report Date : 2/11/2013

Solid Waste Shipped Offsite for Disposal and Estimates of Major Nuclides by Waste Class and Stream
During Period From 01/01/2012 to 12/31/2012 Percent Cutoff: 1

Waste Stream : Resins, Filters, and Evap Bottoms
High Integrity Container

Waste Class	Volume		Curies Shipped	% Error (Ci)
	Ft^3	M^3		
A	4.33E+02	1.23E+01	5.50E+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	4.33E+02	1.23E+01	5.50E+00	+/- 25%

Waste Stream : Dry Active Waste
DAW 20' Sealand PZR Heaters

Waste Class	Volume		Curies Shipped	%Error (Ci)
	Ft^3	M^3		
A	3.76E+04	1.07E+03	9.63E+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	3.76E+04	1.07E+03	9.63E+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%

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Report Date : 2/11/2013

Solid Waste Shipped Offsite for Disposal and Estimates of Major Nuclides by Waste Class and Stream
During Period From 01/01/2012 to 12/31/2012 Percent Cutoff: 1

Waste Stream : Other Waste
Combined Packages Debris Intermodal 2012 waste oil

Waste Class	Volume Ft^3	M^3	Curies Shipped	% Error (Ci)
A	1.40E+04	3.97E+02	1.08E+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	1.40E+04	3.97E+02	1.08E+00	+/-25%

Waste Stream : Sum of All 4 Categories
Combined Packages DAW 20' Sealand Debris Intermodal PZR Heaters
2012 waste oil

Waste Class	Volume Ft^3	M^3	Curies Shipped	% Error (Ci)
A	5.21E+04	1.47E+03	1.62E+01	+/-25%
B	0.00E+00	0.00E+00	0.00E+00	+/-25%
C	0.00E+00	0.00E+00	0.00E+00	+/-25%
All	5.21E+04	1.47E+03	1.62E+01	+/-25%

-Combined Waste Type Shipment, Major Volume Waste Type Shown

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Solid Waste Shipped Offsite for Disposal and Estimates of Major Nuclides by Waste Class and Stream
During Period From 01/01/2012 to 12/31/2012

Number of Shipments	Mode of Transportation	Destination
2	Hittman Transport (TN)	Clive CWF
26	Hittman Transport (TN)	Energy Solutions, (DTK) Gallaher Road
22	Hittman Transport (TN)	EnergySolutions Bear Creek
3	Hittman Transport (SC)	EnergySolutions LLC.
1	Hittman Transport (TN)	EnergySolutions LLC.

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Report Date : 2/11/2013

Solid Waste Shipped Offsite for Disposal and Estimates of Major Nuclides by Waste Class and Stream
During Period From 01/01/2012 to 12/31/2012 Percent Cutoff: 1

Resins, Filters, and Evap Bottom		
Waste Class A		
Nuclide Name	Percent Abundance	Curies
H-3	22.945%	1.26E+00
C-14	1.890%	1.04E-01
Mn-54	1.274%	7.00E-02
Fe-55	16.960%	9.32E-01
Co-58	16.338%	8.98E-01
Co-60	9.359%	5.15E-01
Ni-63	26.299%	1.45E+00
Ag-110m	1.108%	6.09E-02
Sb-125	2.680%	1.47E-01
Resins, Filters, and Evap Bottom		
Waste Class All		
Nuclide Name	Percent Abundance	Curies
H-3	22.945%	1.26E+00
C-14	1.890%	1.04E-01
Mn-54	1.274%	7.00E-02
Fe-55	16.960%	9.32E-01
Co-58	16.338%	8.98E-01
Co-60	9.359%	5.15E-01
Ni-63	26.299%	1.45E+00
Ag-110m	1.108%	6.09E-02
Sb-125	2.680%	1.47E-01
Dry Active Waste		
Waste Class A		
Nuclide Name	Percent Abundance	Curies
Mn-54	6.043%	5.82E-01
Fe-55	29.396%	2.83E+00
Co-58	7.230%	6.96E-01
Co-60	45.444%	4.38E+00
Ni-63	5.017%	4.83E-01
Nb-95	1.101%	1.06E-01
Cs-137	1.511%	1.46E-01
Dry Active Waste		
Waste Class All		
Nuclide Name	Percent Abundance	Curies
Mn-54	6.043%	5.82E-01
Fe-55	29.396%	2.83E+00
Co-58	7.230%	6.96E-01
Co-60	45.444%	4.38E+00
Ni-63	5.017%	4.83E-01
Nb-95	1.101%	1.06E-01
Cs-137	1.511%	1.46E-01
Other Waste		
Waste Class A		

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Solid Waste Shipped Offsite for Disposal and Estimates of Major Nuclides by Waste Class and Stream
During Period From 01/01/2012 to 12/31/2012 Percent Cutoff: 1

Nuclide Name	Percent Abundance	Curies
Fe-55	52.624%	5.68E-01
Co-58	3.675%	3.97E-02
Co-60	14.985%	1.62E-01
Ni-63	15.030%	1.62E-01
Zr-95	1.269%	1.37E-02
Nb-95	2.532%	2.73E-02
Ag-110m	1.751%	1.89E-02
Cs-137	5.119%	5.53E-02
Other Waste		
Waste Class All		
Nuclide Name	Percent Abundance	Curies
Fe-55	52.624%	5.68E-01
Co-58	3.675%	3.97E-02
Co-60	14.985%	1.62E-01
Ni-63	15.030%	1.62E-01
Zr-95	1.269%	1.37E-02
Nb-95	2.532%	2.73E-02
Ag-110m	1.751%	1.89E-02
Cs-137	5.119%	5.53E-02
Sum of All 4 Categories		
Waste Class A		
Nuclide Name	Percent Abundance	Curies
H-3	8.016%	1.30E+00
Mn-54	4.087%	6.62E-01
Fe-55	26.725%	4.33E+00
Co-58	10.083%	1.63E+00
Co-60	31.175%	5.05E+00
Ni-63	12.903%	2.09E+00
Sb-125	1.526%	2.47E-01
Cs-137	1.301%	2.11E-01
Sum of All 4 Categories		
Waste Class All		
Nuclide Name	Percent Abundance	Curies
H-3	8.016%	1.30E+00
Mn-54	4.087%	6.62E-01
Fe-55	26.725%	4.33E+00
Co-58	10.083%	1.63E+00
Co-60	31.175%	5.05E+00
Ni-63	12.903%	2.09E+00
Sb-125	1.526%	2.47E-01
Cs-137	1.301%	2.11E-01

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Solid Waste Shipped Offsite for Disposal and Estimates of Major Nuclides by Waste Class and Stream
During Period From 01/01/2012 to 12/31/2012

Manifest Number	Date Shipped	Waste Volume Used	Burial volume Used
FPL/PSL 12-189	11/29/2012	Yes	
FPL/PSL 12-178	10/17/2012	Yes	
FPL/PSL 12-174	10/11/2012	Yes	
FPL/PSL 12-173	10/9/2012	Yes	
FPL/PSL 12-136	8/22/2012	Yes	
FPL/PSL 12-130	8/14/2012	Yes	
FPL/PSL 12-125	8/10/2012	Yes	
FPL/PSL 12-114	6/7/2012	Yes	
FPL/PSL 12-107	5/9/2012	Yes	
FPL/PSL 12-104	5/3/2012	Yes	
FPL/PSL 12-103	5/2/2012	Yes	
FPL/PSL 12-102	5/2/2012	Yes	
FPL/PSL 12-100	5/1/2012	Yes	
FPL/PSL 12-99	5/1/2012	Yes	
FPL/PSL 12-98	4/30/2012	Yes	
FPL/PSL 12-093	4/26/2012	Yes	
FPL/PSL 12-94	4/25/2012	Yes	
FPL/PSL 12-97	4/25/2012	Yes	
FPL/PSL 12-96	4/25/2012	Yes	
FPL/PSL 12-95	4/24/2012	Yes	
FPL/PSL 12-91	4/12/2012	Yes	
FPL/PSL 12-83	3/28/2012	Yes	
FPL/PSL 12-82	3/28/2012	Yes	
FPL/PSL 12-78	3/26/2012	Yes	
FPL/PSL 12-81	3/26/2012	Yes	
FPL/PSL 12-80	3/26/2012	Yes	
FPL/PSL 12-79	3/26/2012	Yes	
FPL/PSL 12-73	3/23/2012	Yes	
FPL/PSL 12-68	3/23/2012	Yes	
FPL/PSL 12-75	3/23/2012	Yes	
FPL/PSL 12-76	3/23/2012	Yes	
FPL/PSL 12-74	3/23/2012	Yes	
FPL/PSL 12-71	3/21/2012	Yes	
FPL/PSL 12-70	3/21/2012	Yes	
FPL/PSL 12-69	3/21/2012	Yes	
FPL/PSL 12-64	3/19/2012	Yes	
FPL/PSL 12-63	3/19/2012	Yes	

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Report Date : 2/11/2013

Solid Waste Shipped Offsite for Disposal and Estimates of Major Nuclides by Waste Class and Stream
During Period From 01/01/2012 to 12/31/2012

Manifest Number	Date Shipped	Waste Volume Used	Burial volume Used
FPL/PSL 12-66	3/19/2012	Yes	
FPL/PSL 12-65	3/19/2012	Yes	
FPL/PSL 12-56	3/8/2012	Yes	
FPL/PSL 12-55	3/7/2012	Yes	
FPL/PSL 12-52	3/1/2012	Yes	
FPL/PSL 12-51	3/1/2012	Yes	
FPL/PSL 12-48	2/28/2012	Yes	
FPL/PSL 12-47	2/28/2012	Yes	
FPL/PSL 12-21	2/16/2012	Yes	
FPL/PSL 12-19	2/9/2012	Yes	
FPL/PSL 12-18	2/9/2012	Yes	
FPL/PSL 12-36	2/2/2012	Yes	
FPL/PSL 12-28	1/25/2012	Yes	
FPL/PSL 12-22	1/19/2012	Yes	
FPL/PSL 12-10	1/11/2012	Yes	
FPL/PSL 12-05	1/5/2012	Yes	
FPL/PSL 12-002	1/3/2012	Yes	

Reg. Guide 1.21, App B, Sec E3 - Doses due to Radioiodines, Tritium, and Particulates in Gaseous Releases

Unit: Site

Starting: 1-Jan-2012 Ending: 31-Dec-2012

Organ Dose	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Annual
Bone	mRem	1.07E-01	1.65E-01	1.22E-01	8.32E-02	4.77E-01
Limit	mRem					
Percent of Limit	%					
Liver	mRem	1.10E-01	1.66E-01	1.32E-01	8.90E-02	4.97E-01
Limit	mRem					
Percent of Limit	%					
Total Body	mRem	1.10E-01	1.65E-01	1.32E-01	8.90E-02	4.97E-01
Limit	mRem					
Percent of Limit	%					
Thyroid	mRem	1.10E-01	1.65E-01	1.32E-01	8.91E-02	4.97E-01
Limit	mRem					
Percent of Limit	%					
Kidney	mRem	1.41E-02	1.99E-02	1.91E-02	1.24E-02	6.56E-02
Limit	mRem					
Percent of Limit	%					
Lung	mRem	1.10E-01	1.65E-01	1.32E-01	8.90E-02	4.97E-01
Limit	mRem					
Percent of Limit	%					
GI-LI	mRem	1.10E-01	1.65E-01	1.32E-01	8.90E-02	4.97E-01
Limit	mRem					
Percent of Limit	%					

Reg. Guide 1.21, App B, Sec E3 - Doses due to Radioiodines, Tritium, and Particulates in Gaseous Releases

Unit: PSL1

Starting: 1-Jan-2012 Ending: 31-Dec-2012

Organ Dose	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Annual
Bone	mRem	0.00E+00	5.79E-02	8.35E-02	8.32E-02	2.25E-01
Limit	mRem					
Percent of Limit	%					
Liver	mRem	1.24E-03	5.82E-02	9.04E-02	8.80E-02	2.38E-01
Limit	mRem					
Percent of Limit	%					
Total Body	mRem	1.24E-03	5.80E-02	9.01E-02	8.80E-02	2.37E-01
Limit	mRem					
Percent of Limit	%					
Thyroid	mRem	1.24E-03	5.80E-02	9.01E-02	8.80E-02	2.37E-01
Limit	mRem					
Percent of Limit	%					
Kidney	mRem	5.39E-04	7.01E-03	1.30E-02	1.20E-02	3.25E-02
Limit	mRem					
Percent of Limit	%					
Lung	mRem	1.24E-03	5.80E-02	9.01E-02	8.80E-02	2.37E-01
Limit	mRem					
Percent of Limit	%					
GI-Li	mRem	1.24E-03	5.80E-02	9.01E-02	8.80E-02	2.37E-01
Limit	mRem					
Percent of Limit	%					

Reg. Guide 1.21, App B, Sec E3 - Doses due to Radioiodines, Tritium, and Particulates in Gaseous Releases

Unit: PSL2

Starting: 1-Jan-2012 Ending: 31-Dec-2012

Organ Dose	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Annual
Bone	mRem	1.07E-01	1.07E-01	3.83E-02	2.33E-07	2.52E-01
Limit	mRem					
Percent of Limit	%					
Liver	mRem	1.09E-01	1.07E-01	4.19E-02	9.92E-04	2.59E-01
Limit	mRem					
Percent of Limit	%					
Total Body	mRem	1.09E-01	1.07E-01	4.19E-02	9.92E-04	2.59E-01
Limit	mRem					
Percent of Limit	%					
Thyroid	mRem	1.09E-01	1.07E-01	4.20E-02	1.08E-03	2.59E-01
Limit	mRem					
Percent of Limit	%					
Kidney	mRem	1.36E-02	1.29E-02	6.12E-03	4.33E-04	3.30E-02
Limit	mRem					
Percent of Limit	%					
Lung	mRem	1.09E-01	1.07E-01	4.19E-02	9.92E-04	2.59E-01
Limit	mRem					
Percent of Limit	%					
GI-Li	mRem	1.09E-01	1.07E-01	4.19E-02	9.92E-04	2.59E-01
Limit	mRem					
Percent of Limit	%					

Reg. Guide 1.21, App B, Sec E2 - Air Doses Due To Gaseous Releases

Unit: Site

Starting: 1-Jan-2012 Ending: 31-Dec-2012

NG Dose	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Annual
Gamma Air	mRad	1.22E-04	8.07E-04	1.67E-03	2.00E-04	2.80E-03
Limit	mRad					
Percent of Limit	%					
Beta Air	mRad	8.48E-05	3.46E-04	6.44E-04	9.96E-05	1.18E-03
Limit	mRad					
Percent of Limit	%					
NG Total Body	mRem	1.15E-04	7.67E-04	1.61E-03	1.90E-04	2.68E-03
Limit	mRem					
Percent of Limit	%					
NG Skin	mRem	2.03E-04	1.14E-03	2.37E-03	2.99E-04	4.00E-03
Limit	mRem					
Percent of Limit	%					

Reg. Guide 1.21, App B, Sec E2 - Air Doses Due To Gaseous Releases

Unit: PSL1

Starting: 1-Jan-2012 Ending: 31-Dec-2012

NG Dose	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Annual
Gamma Air	mRad	1.66E-08	8.30E-05	9.17E-04	1.73E-04	1.17E-03
Limit	mRad					
Percent of Limit	%					
Beta Air	mRad	4.05E-08	9.99E-05	3.58E-04	8.33E-05	5.41E-04
Limit	mRad					
Percent of Limit	%					
NG Total Body	mRem	1.45E-08	7.58E-05	8.82E-04	1.64E-04	1.12E-03
Limit	mRem					
Percent of Limit	%					
NG Skin	mRem	3.42E-08	1.38E-04	1.33E-03	2.59E-04	1.73E-03
Limit	mRem					
Percent of Limit	%					

Reg. Guide 1.21, App B, Sec E2 - Air Doses Due To Gaseous Releases

Unit: PSL2

Starting: 1-Jan-2012 Ending: 31-Dec-2012

NG Dose	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Annual
Gamma Air	mRad	1.22E-04	7.24E-04	7.55E-04	2.75E-05	1.63E-03
Limit	mRad					
Percent of Limit	%					
Beta Air	mRad	8.48E-05	2.46E-04	2.87E-04	1.64E-05	6.34E-04
Limit	mRad					
Percent of Limit	%					
NG Total Body	mRem	1.15E-04	6.91E-04	7.23E-04	2.58E-05	1.56E-03
Limit	mRem					
Percent of Limit	%					
NG Skin	mRem	2.03E-04	9.97E-04	1.04E-03	3.96E-05	2.28E-03
Limit	mRem					
Percent of Limit	%					

Period: Ann, 2012

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-LIi	Skin
NW Site Boundary - In	Infant	4.754E-01	4.958E-01	4.952E-01	4.954E-01	6.539E-02	4.952E-01	4.952E-01	0.000E+00
WNW Site Boundary - I	Infant	1.282E-05	1.282E-05	1.282E-05	1.282E-05	1.282E-05	1.282E-05	1.282E-05	0.000E+00
Maximum Doserate by Organ:		4.754E-01	4.958E-01	4.952E-01	4.954E-01	6.539E-02	4.952E-01	4.952E-01	0.000E+00

Maximum Organ Doserate (mRem/yr): 4.958E-01

Maximum Total Body Doserate (mRem/yr): 4.952E-01

Site Boundary NG Doserate Summary

Gas Receptor Location	Gamma (mRad/yr)	Beta (mRad/yr)	Total Body (mRem/yr)	Skin (mRem/yr)
NW Site Boundary	2.793E-03	1.172E-03	2.670E-03	3.994E-03
WNW Site Boundary	2.406E-03	1.010E-03	2.300E-03	3.440E-03
Maximum NG Dose Rate:	2.793E-03	1.172E-03	2.670E-03	3.994E-03

Period: Ann, 2012

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	2.665E-05	2.664E-05	2.656E-05	2.660E-05	2.652E-05	2.754E-05	2.651E-05	0.000E+00
SE Nearest Res - Child	Child	2.668E-05	2.665E-05	2.648E-05	2.664E-05	2.648E-05	2.780E-05	2.647E-05	0.000E+00
SE Nearest Res - Infant	Infant	2.663E-05	2.663E-05	2.646E-05	2.663E-05	2.646E-05	2.761E-05	2.645E-05	0.000E+00
SE Nearest Res - Teenager	Teenager	2.662E-05	2.666E-05	2.652E-05	2.662E-05	2.652E-05	2.808E-05	2.650E-05	0.000E+00
SE Visitor - Adult	Adult	1.237E-05	1.237E-05	1.233E-05	1.235E-05	1.232E-05	1.276E-05	1.231E-05	0.000E+00
SSW Near Garden - Adult	Adult	2.063E-06	2.062E-06	2.056E-06	2.059E-06	2.054E-06	2.123E-06	2.053E-06	0.000E+00
SSW Near Garden - Child	Child	2.065E-06	2.063E-06	2.051E-06	2.062E-06	2.051E-06	2.141E-06	2.050E-06	0.000E+00
SSW Near Garden -	Teenager	2.060E-06	2.063E-06	2.054E-06	2.061E-06	2.054E-06	2.161E-06	2.053E-06	0.000E+00
WSW Near Milk - Adult	Adult	9.363E-06	1.104E-05	8.875E-06	6.528E-06	6.887E-06	5.576E-06	4.870E-06	0.000E+00
WSW Near Milk - Child	Child	2.390E-05	2.328E-05	7.508E-06	1.001E-05	7.027E-06	7.074E-06	4.857E-06	0.000E+00
WSW Near Milk - Infant	Infant	4.478E-05	4.955E-05	7.331E-06	1.741E-05	7.025E-06	1.028E-05	4.858E-06	0.000E+00
WSW Near Milk - Teenager	Teenager	8.127E-06	1.093E-05	3.850E-06	2.717E-06	2.827E-06	1.644E-06	2.506E-07	0.000E+00

Maximum Dose by Organ:	4.478E-05	4.955E-05	2.656E-05	2.664E-05	2.652E-05	2.808E-05	2.651E-05	0.000E+00
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Maximum Organ Dose (mRem): 4.955E-05

Maximum Total Body Dose (mRem): 2.656E-05

Maximum Individual NG Dose Summary

Gas Receptor Location	Gamma (mRad)	Beta (mRad)	Total Body (mRem)	Skin (mRem)
SE Nearest Res 1.52 mi 142 deg	1.247E-03	5.230E-04	1.192E-03	1.783E-03
SE Visitor	5.398E-04	2.265E-04	5.160E-04	7.718E-04
SSW Near Gard 4.4 mi 207 deg	9.458E-05	3.968E-05	9.040E-05	1.352E-04
WSW Near Milk 3.43 mi 248 deg	1.679E-04	7.043E-05	1.605E-04	2.400E-04
Maximum NG Dose:	1.247E-03	5.230E-04	1.192E-03	1.783E-03

Period: Ann, 2012

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-LI	Skin
NW Site Boundary - In	Infant	2.239E-01	2.373E-01	2.367E-01	2.367E-01	3.243E-02	2.368E-01	2.367E-01	0.000E+00
WNW Site Boundary - I	Infant	1.223E-05	1.223E-05	1.223E-05	1.223E-05	1.223E-05	1.223E-05	1.223E-05	0.000E+00
Maximum Doserate by Organ:		2.239E-01	2.373E-01	2.367E-01	2.367E-01	3.243E-02	2.368E-01	2.367E-01	0.000E+00

Maximum Organ Doserate (mRem/yr): 2.373E-01

Maximum Total Body Doserate (mRem/yr): 2.367E-01

Site Boundary NG Doserate Summary

Gas Receptor Location	Gamma (mRad/yr)	Beta (mRad/yr)	Total Body (mRem/yr)	Skin (mRem/yr)
NW Site Boundary	1.170E-03	5.395E-04	1.119E-03	1.721E-03
WNW Site Boundary	1.008E-03	4.647E-04	9.638E-04	1.483E-03
Maximum NG Dose Rate:	1.170E-03	5.395E-04	1.119E-03	1.721E-03

Period: Ann, 2012

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-LIi	Skin
SE Nearest Res - Adult	Adult	2.486E-05	2.490E-05	2.485E-05	2.476E-05	2.481E-05	2.565E-05	2.480E-05	0.000E+00
SE Nearest Res - Child	Child	2.495E-05	2.493E-05	2.479E-05	2.476E-05	2.478E-05	2.579E-05	2.477E-05	0.000E+00
SE Nearest Res - Infant	Infant	2.491E-05	2.492E-05	2.477E-05	2.476E-05	2.477E-05	2.559E-05	2.477E-05	0.000E+00
SE Nearest Res - Teenager	Teenager	2.490E-05	2.494E-05	2.483E-05	2.476E-05	2.481E-05	2.603E-05	2.480E-05	0.000E+00
SE Visitor - Adult	Adult	1.154E-05	1.156E-05	1.154E-05	1.150E-05	1.152E-05	1.189E-05	1.152E-05	0.000E+00
SSW Near Garden - Adult	Adult	1.925E-06	1.927E-06	1.925E-06	1.918E-06	1.921E-06	1.979E-06	1.921E-06	0.000E+00
SSW Near Garden - Child	Child	1.931E-06	1.930E-06	1.920E-06	1.918E-06	1.920E-06	1.989E-06	1.919E-06	0.000E+00
SSW Near Garden - Teenager	Teenager	1.928E-06	1.930E-06	1.923E-06	1.918E-06	1.921E-06	2.005E-06	1.921E-06	0.000E+00
WSW Near Milk - Adult	Adult	8.401E-06	9.848E-06	7.990E-06	4.433E-06	6.274E-06	5.150E-06	4.546E-06	0.000E+00
WSW Near Milk - Child	Child	2.090E-05	2.037E-05	6.807E-06	4.433E-06	6.395E-06	6.429E-06	4.535E-06	0.000E+00
WSW Near Milk - Infant	Infant	3.884E-05	4.294E-05	6.646E-06	4.433E-06	6.394E-06	9.184E-06	4.536E-06	0.000E+00
WSW Near Milk - Teenager	Teenager	6.982E-06	9.389E-06	3.308E-06	0.000E+00	2.418E-06	1.398E-06	2.169E-07	0.000E+00

Maximum Dose by Organ:	3.884E-05	4.294E-05	2.485E-05	2.476E-05	2.481E-05	2.603E-05	2.480E-05	0.000E+00
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Maximum Organ Dose (mRem): 4.294E-05

Maximum Total Body Dose (mRem): 2.485E-05

Maximum Individual NG Dose Summary

Gas Receptor Location	Gamma (mRad)	Beta (mRad)	Total Body (mRem)	Skin (mRem)
SE Nearest Res 1.52 mi 142 deg	5.222E-04	2.408E-04	4.994E-04	7.682E-04
SE Visitor	2.261E-04	1.043E-04	2.162E-04	3.326E-04
SSW Near Gard 4.4 mi 207 deg	3.962E-05	1.827E-05	3.788E-05	5.828E-05
WSW Near Milk 3.43 mi 248 deg	7.032E-05	3.242E-05	6.725E-05	1.034E-04
Maximum NG Dose:	5.222E-04	2.408E-04	4.994E-04	7.682E-04

Period: Ann, 2012

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-LIi	Skin
NW Site Boundary - In	Infant	2.515E-01	2.586E-01	2.585E-01	2.587E-01	3.296E-02	2.585E-01	2.585E-01	0.000E+00
WNW Site Boundary - I	Infant	5.925E-07	5.925E-07	5.925E-07	5.925E-07	5.925E-07	5.925E-07	5.925E-07	0.000E+00
Maximum Doserate by Organ:		2.515E-01	2.586E-01	2.585E-01	2.587E-01	3.296E-02	2.585E-01	2.585E-01	0.000E+00

Maximum Organ Doserate (mRem/yr): 2.587E-01

Maximum Total Body Doserate (mRem/yr): 2.585E-01

Site Boundary NG Doserate Summary

Gas Receptor Location	Gamma (mRad/yr)	Beta (mRad/yr)	Total Body (mRem/yr)	Skin (mRem/yr)
NW Site Boundary	1.623E-03	6.324E-04	1.551E-03	2.273E-03
WNW Site Boundary	1.398E-03	5.448E-04	1.336E-03	1.958E-03
Maximum NG Dose Rate:	1.623E-03	6.324E-04	1.551E-03	2.273E-03

Period: Ann, 2012

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-LIi	Skin
SE Nearest Res - Adult	Adult	1.790E-06	1.743E-06	1.704E-06	1.837E-06	1.715E-06	1.888E-06	1.706E-06	0.000E+00
SE Nearest Res - Child	Child	1.730E-06	1.717E-06	1.690E-06	1.882E-06	1.698E-06	2.006E-06	1.695E-06	0.000E+00
SE Nearest Res - Infant	Infant	1.721E-06	1.715E-06	1.687E-06	1.865E-06	1.689E-06	2.017E-06	1.688E-06	0.000E+00
SE Nearest Res - Teenager	Teenager	1.718E-06	1.718E-06	1.696E-06	1.863E-06	1.715E-06	2.046E-06	1.706E-06	0.000E+00
SE Visitor - Adult	Adult	8.284E-07	8.080E-07	7.909E-07	8.488E-07	7.954E-07	8.713E-07	7.915E-07	0.000E+00
SSW Near Garden - Adult	Adult	1.377E-07	1.345E-07	1.318E-07	1.409E-07	1.326E-07	1.445E-07	1.319E-07	0.000E+00
SSW Near Garden - Child	Child	1.336E-07	1.327E-07	1.309E-07	1.440E-07	1.314E-07	1.526E-07	1.312E-07	0.000E+00
SSW Near Garden - Teenager	Teenager	1.328E-07	1.328E-07	1.313E-07	1.427E-07	1.326E-07	1.553E-07	1.320E-07	0.000E+00
WSW Near Milk - Adult	Adult	9.624E-07	1.193E-06	8.845E-07	2.096E-06	6.134E-07	4.256E-07	3.243E-07	0.000E+00
WSW Near Milk - Child	Child	3.001E-06	2.913E-06	7.003E-07	5.578E-06	6.323E-07	6.454E-07	3.220E-07	0.000E+00
WSW Near Milk - Infant	Infant	5.939E-06	6.612E-06	6.847E-07	1.298E-05	6.312E-07	1.099E-06	3.219E-07	0.000E+00
WSW Near Milk - Teenager	Teenager	1.145E-06	1.538E-06	5.417E-07	2.717E-06	4.088E-07	2.464E-07	3.372E-08	0.000E+00
Maximum Dose by Organ:		5.939E-06	6.612E-06	1.704E-06	1.298E-05	1.715E-06	2.046E-06	1.706E-06	0.000E+00

Maximum Organ Dose (mRem): 1.298E-05

Maximum Total Body Dose (mRem): 1.704E-06

Maximum Individual NG Dose Summary

Gas Receptor Location	Gamma (mRad)	Beta (mRad)	Total Body (mRem)	Skin (mRem)
SE Nearest Res 1.52 mi 142 deg	7.245E-04	2.822E-04	6.923E-04	1.014E-03
SE Visitor	3.137E-04	1.222E-04	2.998E-04	4.392E-04
SSW Near Gard 4.4 mi 207 deg	5.497E-05	2.141E-05	5.252E-05	7.695E-05
WSW Near Milk 3.43 mi 248 deg	9.757E-05	3.801E-05	9.322E-05	1.366E-04
Maximum NG Dose:	7.245E-04	2.822E-04	6.923E-04	1.014E-03

Reg. Guide 1.21, App B, Sec E1 - Doses to a member of the public due to Liquid Releases

Unit: Site

Starting: 1-Jan-2012 Ending: 31-Dec-2012

Ogan Dose	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Annual
Bone	mRem	1.11E-02	4.86E-03	8.89E-04	2.67E-04	1.71E-02
Limit	mRem					
Percent of Limit	%					
Liver	mRem	4.51E-02	1.75E-02	2.13E-03	9.35E-04	6.57E-02
Limit	mRem					
Percent of Limit	%					
Total Body	mRem	1.31E-02	5.82E-03	1.63E-03	9.02E-04	2.15E-02
Limit	mRem					
Percent of Limit	%					
Thyroid	mRem	1.90E-03	1.74E-03	1.11E-03	6.76E-04	5.40E-03
Limit	mRem					
Percent of Limit	%					
Kidney	mRem	1.35E-03	1.27E-03	1.56E-03	8.24E-04	5.01E-03
Limit	mRem					
Percent of Limit	%					
Lung	mRem	5.16E-02	1.99E-02	3.65E-03	8.49E-04	7.60E-02
Limit	mRem					
Percent of Limit	%					
GI-Li	mRem	3.51E-02	2.58E-02	2.02E-02	1.31E-02	9.42E-02
Limit	mRem					
Percent of Limit	%					

Reg. Guide 1.21, App B, Sec E1 - Doses to a member of the public due to Liquid Releases

Unit: PSL1

Starting: 1-Jan-2012 Ending: 31-Dec-2012

Ogan Dose	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Annual
Bone	mRem	5.55E-03	2.43E-03	4.44E-04	1.33E-04	8.56E-03
Limit	mRem					
Percent of Limit	%					
Liver	mRem	2.25E-02	8.77E-03	1.06E-03	4.67E-04	3.28E-02
Limit	mRem					
Percent of Limit	%					
Total Body	mRem	6.56E-03	2.91E-03	8.17E-04	4.51E-04	1.07E-02
Limit	mRem					
Percent of Limit	%					
Thyroid	mRem	9.49E-04	8.69E-04	5.57E-04	3.38E-04	2.70E-03
Limit	mRem					
Percent of Limit	%					
Kidney	mRem	6.74E-04	6.35E-04	7.82E-04	4.12E-04	2.50E-03
Limit	mRem					
Percent of Limit	%					
Lung	mRem	2.58E-02	9.94E-03	1.83E-03	4.25E-04	3.80E-02
Limit	mRem					
Percent of Limit	%					
GI-LI	mRem	1.76E-02	1.29E-02	1.01E-02	6.53E-03	4.71E-02
Limit	mRem					
Percent of Limit	%					

Reg. Guide 1.21, App B, Sec E1 - Doses to a member of the public due to Liquid Releases

Unit: PSL2

Starting: 1-Jan-2012 Ending: 31-Dec-2012

Ogan Dose	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Annual
Bone	mRem	5.55E-03	2.43E-03	4.44E-04	1.33E-04	8.56E-03
Limit	mRem					
Percent of Limit	%					
Liver	mRem	2.25E-02	8.77E-03	1.06E-03	4.67E-04	3.28E-02
Limit	mRem					
Percent of Limit	%					
Total Body	mRem	6.56E-03	2.91E-03	8.17E-04	4.51E-04	1.07E-02
Limit	mRem					
Percent of Limit	%					
Thyroid	mRem	9.49E-04	8.69E-04	5.57E-04	3.38E-04	2.70E-03
Limit	mRem					
Percent of Limit	%					
Kidney	mRem	6.74E-04	6.35E-04	7.82E-04	4.12E-04	2.50E-03
Limit	mRem					
Percent of Limit	%					
Lung	mRem	2.58E-02	9.94E-03	1.83E-03	4.25E-04	3.80E-02
Limit	mRem					
Percent of Limit	%					
GI-Lli	mRem	1.76E-02	1.29E-02	1.01E-02	6.53E-03	4.71E-02
Limit	mRem					
Percent of Limit	%					

Period: Ann, 2012

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 - Teenager	Teenager	8.556E-03	3.285E-02	1.074E-02	2.326E-03	2.503E-03	3.802E-02	4.708E-02	0.000E+00
Liquid Receptor - Child	Child	5.170E-03	1.617E-02	6.560E-03	2.698E-03	1.089E-03	1.843E-02	2.060E-02	0.000E+00
Maximum Dose by Organ:		8.556E-03	3.285E-02	1.074E-02	2.698E-03	2.503E-03	3.802E-02	4.708E-02	0.000E+00

Maximum Organ Dose (mRem): 4.708E-02

Maximum Total Body Dose (mRem): 1.074E-02

Period: Ann, 2012

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-Lli</u>	<u>Skin</u>
Liquid Receptor - Teenager	Teenager	8.556E-03	3.285E-02	1.074E-02	2.326E-03	2.503E-03	3.802E-02	4.708E-02	0.000E+00
Liquid Receptor - Child	Child	5.170E-03	1.617E-02	6.560E-03	2.698E-03	1.089E-03	1.843E-02	2.060E-02	0.000E+00
Maximum Dose by Organ:		8.556E-03	3.285E-02	1.074E-02	2.698E-03	2.503E-03	3.802E-02	4.708E-02	0.000E+00

Maximum Organ Dose (mRem): 4.708E-02

Maximum Total Body Dose (mRem): 1.074E-02

Period: Ann, 2012

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	1.711E-02	6.570E-02	2.147E-02	4.651E-03	5.005E-03	7.603E-02	9.415E-02	0.000E+00
Liquid Receptor - Child	Child	1.034E-02	3.235E-02	1.312E-02	5.397E-03	2.177E-03	3.687E-02	4.121E-02	0.000E+00

Maximum Dose by Organ:	1.711E-02	6.570E-02	2.147E-02	5.397E-03	5.005E-03	7.603E-02	9.415E-02	0.000E+00
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Maximum Organ Dose (mRem): 9.415E-02

Maximum Total Body Dose (mRem): 2.147E-02

**FLORIDA POWER & LIGHT COMPANY
ST. LUCIE UNITS 1 AND 2
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
JANUARY 1, 2012 THROUGH DECEMBER 31, 2012**

3.4 Visitor Dose

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 2012.

VISITOR DOSE RESULTS FOR CALENDAR YEAR 2012 was:

Noble Gas Dose	mrad
Gamma Air Dose	2.36E-03
Beta Air Dose	9.92E-04

Gas, Particulate, Iodine, Carbon Dose	mrem
Bone	4.18E-01
Liver	4.36E-01
Thyroid	4.35E-01
Kidney	5.74E-02
Lung	4.35E-01
GI-LLI	4.35E-01
Total Body	4.35E-01