

FLORIDA POWER & LIGHT COMPANY
ST. LUCIE PLANT UNIT NOS. 1 & 2
LICENSE NUMBERS DPR-67 & NPF-16

COMBINED ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
FOR THE PERIOD
JANUARY 1, 1999 THROUGH DECEMBER 31, 1999

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EFFLUENT AND WASTE DISPOSAL SUPPLEMENTAL INFORMATION

1. Regulatory Limits

1.1 For Liquid Waste Effluents

- A. The concentration of radioactive material released from the site shall be limited to ten times the concentrations specified in 10 CFR Part 20 Appendix B, Table 2, Column 2 for radionuclides other than dissolved or entrained noble gases. For dissolved or entrained noble gases, the concentration shall be limited to $2E-4$ micro-Curies/ml total activity.
- B. The dose or dose commitment to a MEMBER OF THE PUBLIC from radioactive material in liquid effluents released, from each reactor unit, to UNRESTRICTED AREAS shall be limited to:
During any calendar quarter to ≤ 1.5 mrems to the Total Body and
to ≤ 5 mrems to any organ, and
During any calendar year to ≤ 3 mrems to the Total Body and
to ≤ 10 mrems to any organ.

1.2 For Gaseous Waste Effluents:

- A. The dose rate in UNRESTRICTED AREAS due to radioactive materials released in gaseous effluents from the site shall be limited to:
For Noble Gases: ≤ 500 mrems/yr to the total body and
 ≤ 3000 mrems/yr to the skin, and
For Iodine-131, Iodine-133, Tritium, and all radionuclides in particulate form with half-lives greater than 8 days:
 ≤ 1500 mrems/yr to any organ.
- *B. 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:
During any calendar quarter, to ≤ 5 mrad for gamma radiation, and
 ≤ 10 mrad for beta radiation and,
during any calendar year, to ≤ 10 mrad for gamma radiation and
 ≤ 20 mrad for beta radiation.
- *C. The dose to a MEMBER OF THE PUBLIC from Iodine-131, Iodine-133, Tritium, and all radionuclides in particulate form, with half-lives > 8 days in gaseous effluents released, from each unit to areas at and beyond the site boundary, shall be limited to the following:
During any calendar quarter to ≤ 7.5 mrem to any organ, and
During any calendar year to ≤ 15 mrem to any organ.
- * The calculated doses contained in an annual report shall not apply to any ODCM Control. The reported values are based on actual release conditions instead of historical conditions that the ODCM Control dose calculations are based on. The ODCM Control dose limits are therefore included in Item 1 of the report, for information only.

EFFLUENT AND WASTE DISPOSAL SUPPLEMENTAL INFORMATION (Continued)

2. Effluent Concentration Limits (ECL)

Water: Ten times the 10 CFR Part 20, Appendix B, Table 2, Column 2, except for entrained or dissolved noble gases as described in 1.1.A of this report.

Air: Release concentrations are limited to dose rate limits described in 1.2.A. of this report.

3. Average energy of fission and activation gases in gaseous effluents is not applicable.

4. Measurements and approximations of total radioactivity

Where alpha, tritium, and listed nuclides are shown as zero Curies released, this should be interpreted as "no activity was detected on the samples using the ODCM Control analyses techniques to achieve required Lower Limit of Detection (LLD) sensitivity for radioactive effluents."

A summary of liquid effluent accounting methods is described in Table 3.1.

A summary of gaseous effluent accounting methods is described in Table 3.2.

4.1 Estimate of Errors

Error Topic	LIQUID		GASEOUS	
	Avg %	Max %	Avg %	Max %
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 Percent	9	30	10	35

The predictability of error for radioactive releases can only be applied to nuclides that are 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.

EFFLUENT AND WASTE DISPOSAL SUPPLEMENTAL INFORMATION (Continued)

4. Measurements and Approximations of Total Radioactivity (Cont.)

4.2 Methods of Analyses

TABLE 3.1

RADIOACTIVE LIQUID EFFLUENT SAMPLING AND ANALYSIS

Liquid Source	Sampling Frequency	Type of Analysis	Method of Analysis
Monitor Tank Releases	Each Batch	Principal Gamma Emitters	p.h.a.
	Monthly Composite	Tritium Gross Alpha	L.S. G.F.P.
	Quarterly Composite	Sr-89, Sr-90, & Fe-55	C.S.
Continuous Releases	Daily Grab Samples	Principal Gamma Emitters & I-131 for 4/M Composite Analysis	p.h.a.
		Dissolved & Entrained Gases One Batch/ Month	p.h.a.
		Tritium Composite Monthly	L.S.
		Alpha Composite Monthly	G.F.P.
		Sr-89, Sr-90, & Fe-55 Composite Quarterly	C.S.

p.h.a.- Gamma Spectrum Pulse Height Analysis using Germanium Detectors. All peaks are identified and quantified.

L.S.- Liquid Scintillation Counting

C.S.- Chemical Separation

G.F.P.- Gas Flow Proportional Counting

4/M - Four per Month

EFFLUENT AND WASTE DISPOSAL SUPPLEMENTAL INFORMATION (Continued)

4. Measurements and Approximations of Total Radioactivity (Continued)

4.2 Methods of Analyses(Continued)

TABLE 3.2

RADIOACTIVE GASEOUS WASTE SAMPLING AND ANALYSIS

Gaseous Source	Sampling Frequency	Type of Analysis	Method of Analysis
Waste Gas Decay Tank Releases	Each Batch	Principal Gamma Emitters	p.h.a.
Containment Purge Releases	Each Purge	Principal Gamma Emitters Tritium	p.h.a. L.S.
Plant Vent	4/M	Principal Gamma Emitters Tritium	p.h.a. L.S.
	Monthly Composite	Particulate Gross Alpha	G.F.P.
	Quarterly Composite	Particulate Sr-89 & Sr-90	C.S.

p.h.a.- Gamma Spectrum Pulse Height Analysis using Germanium Detectors. All peaks are identified and quantified.

L.S.- Liquid Scintillation Counting

C.S.- Chemical Separation

G.F.P.- Gas Flow Proportional Counting

4/M - Four per Month

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EFFLUENT AND WASTE DISPOSAL SUPPLEMENTAL INFORMATION (Continued)

5. Batch Releases

A. Liquid	Unit 1	Unit 2	Eng. Unit
1. Number of batch releases	29	28	
2. Total time period for batch releases	21,852	21,010	minutes
3. Maximum time period for a batch release	1,274	1,274	minutes
4. Average time period for a batch release	753	750	minutes
5. Minimum time period for a batch release	315	315	minutes
6. Average dilution stream flow during the period	985,106	985,106	gpm

All liquid releases are summarized in Tables

B. Gaseous	Unit 1	Unit 2	Eng. Unit
1. Number of batch releases	13	112	
2. Total time period for batch releases	3,347	7,660	minutes
3. Maximum time period for a batch release	1,101	435	minutes
4. Average time period for a batch release	257	68	minutes
5. Minimum time period for a batch release	38	12	minutes

All gaseous waste releases are summarized in Tables

6. Unplanned Releases

A. Liquid	Unit 1	Unit 2	Eng. Unit
1. Number of releases	0	0	
2. Total activity of releases	0.00E+00	0.00E+00	Curies

B. Gaseous	Unit 1	Unit 2	Eng. Unit
1. Number of releases	0	0	
2. Total activity of releases	0.00E+00	0.00E+00	Curies

C. see attachments (if applicable) for:

1. A description of the event and equipment involved.
2. Cause(s) for the unplanned release.
3. Actions taken to prevent a recurrence.
4. Consequences of the unplanned release.

EFFLUENT AND WASTE DISPOSAL SUPPLEMENTAL INFORMATION(Continued)

7. Assessment of radiation dose from radioactive effluents to MEMBERS OF THE PUBLIC due to their activities inside the SITE BOUNDARY assumes the VISITOR 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.

VISITOR DOSE RESULTS FOR CALENDAR YEAR 1999 were:

<u>NOBLE GAS</u>	<u>DOSE</u> <u>mrad</u>	<u>Gas Particulate</u> <u>& Iodine Dose</u>	<u>Dose</u> <u>mrem</u>
Gamma Air Dose	3.15E-04	Bone	2.15E-06
Beta Air Dose	1.22E-03	Liver	4.89E-04
		Thyroid	6.78E-04
		Kidney	2.14E-04
		Lung	4.91E-04
		GI-LLI	4.88E-04
		Total Body	4.93E-04

8. Offsite Dose Calculation Manual(ODCM) Revision(s):

Revision 21 to the ODCM was implemented on September 30, 1999. A complete copy of the ODCM is included as **Attachment - A** to this report.

The following is a brief description of significant changes:

DEFINITION of DOSE EQUIVALENT IODINE for Unit 1 now uses ICRP-30 iodine dose conversion factors instead of TID-14844.

A new liquid pathway was inserted in Table 4.11-1 Radioactive Liquid Waste Sampling and Analysis Program per Liquid Release Type D. Settling Basin as a Batch Release. The inclusion of this pathway is to check the Basin water for potential contamination prior to lowering the level for severe weather preparation. There is no source term into this basin at this time. This pathway is now an EPA permitted pathway.

The INTERLABORATORY COMPARISON PROGRAM was modified to now include cross-checks for Gross Beta on an air filter and Tritium in water. If milk samples are being obtained from animals within five miles of the site, then Sr-89 and Sr-90 in water medium cross checks are to be performed.

9. Solid Waste and Irradiated Fuel Shipments:

No irradiated fuel shipments were made from the site.

Common Solid waste from St. Lucie Units 1 and 2 were shipped jointly.

A tabulated summation of these shipments is provided in this report as Table 3.9.

EFFLUENT AND WASTE DISPOSAL SUPPLEMENTAL INFORMATION(Continued)

10. Process Control Program (PCP) Revisions:

Administrative Procedure 0520025, "Process Control Program", Revision 13, was accepted by the Facility Review Group and approved by the Plant General Manager during the reporting period. The changes were editorial in nature and did not constitute a change to the procedures, systems, structures or components as described in the Unit 1 or Unit 2 Updated Final Safety Analysis Reports. These editorial changes did not constitute a test or experiment described by the Unit 1 or Unit 2 Updated Final Safety Analysis Reports

11. Major Changes to Radioactive Liquid, Gaseous and Solid Waste Treatment Systems:

The changes to the Liquid and Gaseous (Flash Tank Operations) Waste Management Systems are detailed in the annual FSAR update. An abstract of these changes is provided in Attachment - B.

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TABLE 3.3-1 LIQUID EFFLUENTS - SUMMATION OF ALL RELEASES

	UNIT	QTR#1	QTR#2
A. Fission and Activation Products			
1. Total Release - (Not including Tritium, Gases, and Alpha)	Ci	1.23E-02	5.23E-03
2. Average Diluted Concentration During Period	uCi/ml	2.44E-11	1.03E-11
B. Tritium			
1. Total Release	Ci	2.27E+01	1.05E+02
2. Average Diluted Concentration During Period	uCi/ml	4.51E-08	2.08E-07
C. Dissolved and Entrained Gases			
1. Total Release	Ci	1.01E-03	3.71E-02
2. Average Diluted Concentration During Period	uCi/ml	2.00E-12	7.31E-11
D. Gross Alpha Radioactivity			
1. Total Release	Ci	5.84E-07	0.00E+00
E. Volume of Waste Released (Prior to Dilution)			
	Liters	4.09E+05	5.66E+05
F. Volume of Dilution Water Used During Period			
	Liters	5.03E+11	5.07E+11

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ABLE 3.3-1 LIQUID EFFLUENTS - SUMMATION OF ALL RELEASES(Continued)

	UNIT	QTR#3	QTR#4
A. Fission and Activation Products			
1. Total Release - (Not including Tritium, Gases, and Alpha)	Ci	5.06E-03	2.39E-02
2. Average Diluted Concentration During Period	uCi/ml	1.08E-11	5.01E-11
B. Tritium			
1. Total Release	Ci	1.10E+02	6.07E+01
2. Average Diluted Concentration During Period	uCi/ml	2.35E-07	1.27E-07
C. Dissolved and Entrained Gases			
1. Total Release	Ci	1.86E+00	5.90E-02
2. Average Diluted Concentration During Period	uCi/ml	3.96E-09	1.24E-10
D. Gross Alpha Radioactivity			
1. Total Release	Ci	0.00E+00	6.59E-07
E. Volume of Waste Released (Prior to Dilution)			
	Liters	1.19E+06	9.68E+05
F. Volume of Dilution Water Used During Period			
	Liters	4.69E+11	4.77E+11

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TABLE 3.3-2 LIQUID EFFLUENTS - SUMMATION OF ALL RELEASES

	UNIT	QTR#1	QTR#2
A. Fission and Activation Products			
1. Total Release - (Not including Tritium, Gases, and Alpha)	Ci	1.23E-02	5.23E-03
2. Average Diluted Concentration During Period	uCi/ml	2.44E-11	1.03E-11
B. Tritium			
1. Total Release	Ci	2.27E+01	1.05E+02
2. Average Diluted Concentration During Period	uCi/ml	4.51E-08	2.08E-07
C. Dissolved and Entrained Gases			
1. Total Release	Ci	1.01E-03	3.71E-02
2. Average Diluted Concentration During Period	uCi/ml	2.00E-12	7.31E-11
D. Gross Alpha Radioactivity			
1. Total Release	Ci	5.84E-07	0.00E+00
E. Volume of Waste Released (Prior to Dilution)			
	Liters	4.09E+05	5.66E+05
F. Volume of Dilution Water Used During Period			
	Liters	5.03E+11	5.07E+11

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ABLE 3.3-2 LIQUID EFFLUENTS - SUMMATION OF ALL RELEASES(Continued)

	UNIT	QTR#3	QTR#4
A. Fission and Activation Products			
1. Total Release - (Not including Tritium, Gases, and Alpha)	Ci	5.06E-03	2.39E-02
2. Average Diluted Concentration During Period	uCi/ml	1.08E-11	5.01E-11
B. Tritium			
1. Total Release	Ci	1.10E+02	6.07E+01
2. Average Diluted Concentration During Period	uCi/ml	2.35E-07	1.27E-07
C. Dissolved and Entrained Gases			
1. Total Release	Ci	1.86E+00	5.90E-02
2. Average Diluted Concentration During Period	uCi/ml	3.96E-09	1.24E-10
D. Gross Alpha Radioactivity			
1. Total Release	Ci	0.00E+00	6.59E-07
E. Volume of Waste Released (Prior to Dilution)			
	Liters	1.19E+06	9.68E+05
F. Volume of Dilution Water Used During Period			
	Liters	4.69E+11	4.77E+11

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TABLE 3.4-1 LIQUID EFFLUENTS

NUCLIDES RELEASED	UNIT	Continuous Mode		Batch Mode	
		QTR#1	QTR#2	QTR#1	QTR#2
Na-24	Ci	0.00E 00	0.00E 00	2.14E-05	0.00E 00
Cr-51	Ci	0.00E 00	0.00E 00	2.99E-04	1.33E-04
Mn-54	Ci	0.00E 00	0.00E 00	1.24E-04	7.09E-05
Fe-55	Ci	0.00E 00	0.00E 00	1.83E-03	2.02E-03
Mn-56	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Co-57	Ci	0.00E 00	0.00E 00	6.50E-06	0.00E 00
Co-58	Ci	0.00E 00	0.00E 00	1.58E-03	5.66E-04
Fe-59	Ci	0.00E 00	0.00E 00	0.00E 00	3.55E-05
Co-60	Ci	0.00E 00	0.00E 00	1.61E-03	9.26E-04
Zn-65	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Ni-65	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Br-82	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Rb-88	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Sr-89	Ci	0.00E 00	0.00E 00	1.44E-06	2.49E-05
Sr-90	Ci	0.00E 00	0.00E 00	0.00E 00	7.35E-06
Y-90	Ci	0.00E 00	0.00E 00	0.00E 00	7.35E-06
Sr-91	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Sr-92	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Y-92	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Zr-95	Ci	0.00E 00	0.00E 00	8.44E-05	2.05E-05
Nb-95	Ci	0.00E 00	0.00E 00	1.02E-04	3.74E-05
Zr-97	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Nb-97	Ci	0.00E 00	0.00E 00	3.02E-05	1.29E-05
Tc-99m	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Mo-99	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Ru-103	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Ag-110	Ci	0.00E 00	0.00E 00	1.62E-04	1.08E-04
Sn-113	Ci	0.00E 00	0.00E 00	1.41E-05	0.00E 00
Sb-122	Ci	0.00E 00	0.00E 00	4.65E-06	0.00E 00
Sb-124	Ci	0.00E 00	0.00E 00	1.95E-03	7.10E-05
Sb-125	Ci	0.00E 00	0.00E 00	3.40E-03	1.05E-03

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TABLE 3.4-1 LIQUID EFFLUENTS(Continued)

NUCLIDES RELEASED	UNIT	Continuous Mode		Batch Mode	
		QTR#1	QTR#2	QTR#1	QTR#2
Te-129	Ci	0.00E 00	0.00E 00	1.77E-04	5.36E-05
Te-129m	Ci	0.00E 00	0.00E 00	6.52E-04	0.00E 00
I-131	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Te-132	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
I-132	Ci	0.00E 00	0.00E 00	3.01E-05	0.00E 00
I-133	Ci	0.00E 00	0.00E 00	0.00E 00	2.65E-06
I-134	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Cs-134	Ci	0.00E 00	0.00E 00	3.38E-05	0.00E+00
I-135	Ci	0.00E 00	0.00E 00	0.00E 00	7.50E-06
Cs-136	Ci	0.00E 00	0.00E 00	6.37E-05	0.00E 00
Cs-137	Ci	0.00E 00	0.00E 00	1.12E-04	6.84E-05
Cs-138	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Ba-140	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
La-140	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Ce-141	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Ce-144	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Pr-144	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
W-187	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Np-239	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
TOTAL FOR PERIOD	Ci	0.00E+00	0.00E+00	1.23E-02	5.23E-03
Ar-41	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Kr-85m	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Kr-85	Ci	0.00E 00	0.00E 00	0.00E 00	1.62E-02
Kr-87	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Kr-88	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Xe-131m	Ci	0.00E 00	0.00E 00	1.46E-04	9.00E-04
Xe-133m	Ci	0.00E 00	0.00E 00	0.00E 00	1.21E-04
Xe-133	Ci	0.00E 00	0.00E 00	8.54E-04	1.98E-02
Xe-135m	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Xe-135	Ci	0.00E 00	0.00E 00	6.40E-06	0.00E 00

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TABLE 3.4-1 LIQUID EFFLUENTS(Continued)

NUCLIDES RELEASED	UNIT	Continuous Mode		Batch Mode	
		QTR#3	QTR#4	QTR#3	QTR#4
Na-24	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E+00
Cr-51	Ci	0.00E 00	0.00E 00	0.00E 00	3.84E-03
Mn-54	Ci	0.00E 00	0.00E 00	5.82E-05	3.30E-04
Fe-55	Ci	0.00E 00	0.00E 00	1.37E-03	1.47E-03
Mn-56	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Co-57	Ci	0.00E 00	0.00E 00	0.00E 00	3.76E-05
Co-58	Ci	0.00E 00	0.00E 00	4.13E-04	6.75E-03
Fe-59	Ci	0.00E 00	0.00E 00	0.00E 00	7.05E-04
Co-60	Ci	0.00E 00	0.00E 00	1.82E-03	2.89E-03
Zn-65	Ci	0.00E 00	0.00E 00	0.00E 00	5.95E-05
Ni-65	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Br-82	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Rb-88	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Sr-89	Ci	0.00E 00	0.00E 00	4.77E-06	0.00E 00
Sr-90	Ci	0.00E 00	0.00E 00	7.16E-06	1.65E-06
Y-90	Ci	0.00E 00	0.00E 00	7.16E-06	1.65E-06
Sr-91	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Sr-92	Ci	0.00E 00	0.00E 00	1.96E-05	0.00E 00
Y-92	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Zr-95	Ci	0.00E 00	0.00E 00	0.00E 00	7.11E-04
Nb-95	Ci	0.00E 00	0.00E 00	4.50E-05	8.85E-04
Zr-97	Ci	0.00E 00	0.00E 00	0.00E 00	2.30E-04
Nb-97	Ci	0.00E 00	0.00E 00	1.78E-05	1.36E-05
Tc-99m	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Mo-99	Ci	0.00E 00	0.00E 00	0.00E 00	1.04E-04
Ru-103	Ci	0.00E 00	0.00E 00	0.00E 00	4.98E-06
Ag-110	Ci	0.00E 00	0.00E 00	2.27E-04	5.51E-05
Sn-113	Ci	0.00E 00	0.00E 00	0.00E 00	1.34E-04
Sb-122	Ci	0.00E 00	0.00E 00	0.00E 00	1.50E-04
Sb-124	Ci	0.00E 00	0.00E 00	0.00E 00	1.98E-05
Sb-125	Ci	0.00E 00	0.00E 00	6.43E-04	1.16E-03

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TABLE 3.4-1 LIQUID EFFLUENTS (continued)

NUCLIDES RELEASED	UNIT	Continuous Mode		Batch Mode	
		QTR#3	QTR#4	QTR#3	QTR#4
Te-129	Ci	0.00E 00	0.00E 00	0.00E 00	1.71E-04
Te-129m	Ci	0.00E 00	0.00E 00	1.82E-04	0.00E 00
I-130	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
I-131	Ci	0.00E 00	0.00E 00	1.04E-05	4.52E-05
Te-132	Ci	0.00E 00	0.00E 00	1.67E-05	1.64E-05
I-132	Ci	0.00E 00	0.00E 00	4.65E-05	1.60E-05
I-133	Ci	0.00E 00	0.00E 00	2.99E-06	1.60E-05
I-134	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Cs-134	Ci	0.00E 00	0.00E 00	3.44E-05	1.85E-03
I-135	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Cs-136	Ci	0.00E 00	0.00E 00	0.00E 00	4.42E-05
Cs-137	Ci	0.00E 00	0.00E 00	1.42E-04	2.00E-03
Cs-138	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Ba-140	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
La-140	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Ce-141	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Ce-144	Ci	0.00E 00	0.00E 00	0.00E 00	1.48E-04
Pr-144	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
W-187	Ci	0.00E 00	0.00E 00	0.00E 00	2.89E-05
Np-239	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
TOTAL FOR PERIOD	Ci	0.00E+00	0.00E+00	5.06E-03	2.39E-02
Ar-41	Ci	0.00E 00	0.00E 00	0.00E 00	7.15E-06
Kr-85m	Ci	0.00E 00	0.00E 00	1.73E-06	2.08E-05
Kr-85	Ci	0.00E 00	0.00E 00	3.13E-01	4.91E-02
Kr-87	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Kr-88	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Xe-131m	Ci	0.00E 00	0.00E 00	2.83E-02	1.98E-03
Xe-133m	Ci	0.00E 00	0.00E 00	1.51E-02	0.00E 00
Xe-133	Ci	0.00E 00	0.00E 00	1.50E+00	7.94E-03
Xe-135m	Ci	0.00E 00	0.00E 00	0.00E 00	9.10E-06
Xe-135	Ci	0.00E 00	0.00E 00	2.30E-03	7.25E-06
Xe-138	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00

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TABLE 3.4-2 LIQUID EFFLUENTS

NUCLIDES RELEASED	UNIT	Continuous Mode		Batch Mode	
		QTR#1	QTR#2	QTR#1	QTR#2
Na-24	Ci	0.00E 00	0.00E 00	2.14E-05	0.00E 00
Cr-51	Ci	0.00E 00	0.00E 00	2.99E-04	1.33E-04
Mn-54	Ci	0.00E 00	0.00E 00	1.24E-04	7.09E-05
Fe-55	Ci	0.00E 00	0.00E 00	1.83E-03	2.02E-03
Mn-56	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Co-57	Ci	0.00E 00	0.00E 00	6.50E-06	0.00E 00
Co-58	Ci	0.00E 00	0.00E 00	1.58E-03	5.66E-04
Fe-59	Ci	0.00E 00	0.00E 00	0.00E 00	3.55E-05
Co-60	Ci	0.00E 00	0.00E 00	1.61E-03	9.26E-04
Zn-65	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Ni-65	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Br-82	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Rb-88	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Sr-89	Ci	0.00E 00	0.00E 00	1.43E-06	2.49E-05
Sr-90	Ci	0.00E 00	0.00E 00	0.00E 00	7.35E-06
Y-90	Ci	0.00E 00	0.00E 00	0.00E 00	7.35E-06
Sr-91	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Sr-92	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Y-92	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Zr-95	Ci	0.00E 00	0.00E 00	8.44E-05	2.05E-05
Nb-95	Ci	0.00E 00	0.00E 00	1.02E-04	3.74E-05
Zr-97	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Nb-97	Ci	0.00E 00	0.00E 00	3.02E-05	1.29E-05
Tc-99m	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Mo-99	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Ru-103	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Ag-110	Ci	0.00E 00	0.00E 00	1.62E-04	1.08E-04
Sn-113	Ci	0.00E 00	0.00E 00	1.41E-05	0.00E 00
Sb-122	Ci	0.00E 00	0.00E 00	4.65E-06	0.00E 00
Sb-124	Ci	0.00E 00	0.00E 00	1.95E-03	7.10E-05
Sb-125	Ci	0.00E 00	0.00E 00	3.40E-03	1.05E-03

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TABLE 3.4-2 LIQUID EFFLUENTS(Continued)

NUCLIDES RELEASED	UNIT	Continuous Mode		Batch Mode	
		QTR#1	QTR#2	QTR#1	QTR#2
Te-129	Ci	0.00E 00	0.00E 00	1.77E-04	5.36E-05
Te-129m	Ci	0.00E 00	0.00E 00	6.52E-04	0.00E 00
I-131	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Te-132	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
I-132	Ci	0.00E 00	0.00E 00	3.01E-05	0.00E 00
I-133	Ci	0.00E 00	0.00E 00	0.00E 00	2.65E-06
I-134	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Cs-134	Ci	0.00E 00	0.00E 00	3.38E-05	0.00E+00
I-135	Ci	0.00E 00	0.00E 00	0.00E 00	7.50E-06
Cs-136	Ci	0.00E 00	0.00E 00	6.37E-05	0.00E 00
Cs-137	Ci	0.00E 00	0.00E 00	1.12E-04	6.84E-05
Cs-138	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Ba-140	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
La-140	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Ce-141	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Ce-144	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Pr-144	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
W-187	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Np-239	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
TOTAL FOR PERIOD	Ci	0.00E+00	0.00E+00	1.23E-02	5.23E-03
Ar-41	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Kr-85m	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Kr-85	Ci	0.00E 00	0.00E 00	0.00E 00	1.62E-02
Kr-87	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Kr-88	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Xe-131m	Ci	0.00E 00	0.00E 00	1.46E-04	9.00E-04
Xe-133m	Ci	0.00E 00	0.00E 00	0.00E 00	1.21E-04
Xe-133	Ci	0.00E 00	0.00E 00	8.54E-04	1.98E-02
Xe-135m	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Xe-135	Ci	0.00E 00	0.00E 00	6.40E-06	0.00E 00

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TABLE 3.4-2 LIQUID EFFLUENTS(Continued)

NUCLIDES RELEASED	UNIT	Continuous Mode		Batch Mode	
		QTR#3	QTR#4	QTR#3	QTR#4
Na-24	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E+00
Cr-51	Ci	0.00E 00	0.00E 00	0.00E 00	3.84E-03
Mn-54	Ci	0.00E 00	0.00E 00	5.82E-05	3.30E-04
Fe-55	Ci	0.00E 00	0.00E 00	1.37E-03	1.47E-03
Mn-56	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Co-57	Ci	0.00E 00	0.00E 00	0.00E 00	3.76E-05
Co-58	Ci	0.00E 00	0.00E 00	4.13E-04	6.75E-03
Fe-59	Ci	0.00E 00	0.00E 00	0.00E 00	7.05E-04
Co-60	Ci	0.00E 00	0.00E 00	1.82E-03	2.89E-03
Zn-65	Ci	0.00E 00	0.00E 00	0.00E 00	5.95E-05
Ni-65	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Br-82	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Rb-88	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Sr-89	Ci	0.00E 00	0.00E 00	4.77E-06	0.00E 00
Sr-90	Ci	0.00E 00	0.00E 00	7.16E-06	1.65E-06
Y-90	Ci	0.00E 00	0.00E 00	7.16E-06	1.65E-06
Sr-91	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Sr-92	Ci	0.00E 00	0.00E 00	1.96E-05	0.00E 00
Y-92	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Zr-95	Ci	0.00E 00	0.00E 00	0.00E 00	7.11E-04
Nb-95	Ci	0.00E 00	0.00E 00	4.50E-05	8.85E-04
Zr-97	Ci	0.00E 00	0.00E 00	0.00E 00	2.30E-04
Nb-97	Ci	0.00E 00	0.00E 00	1.78E-05	1.36E-05
Tc-99m	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Mo-99	Ci	0.00E 00	0.00E 00	0.00E 00	1.04E-04
Ru-103	Ci	0.00E 00	0.00E 00	0.00E 00	4.98E-06
Ag-110	Ci	0.00E 00	0.00E 00	2.27E-04	5.51E-05
Sn-113	Ci	0.00E 00	0.00E 00	0.00E 00	1.34E-04
Sb-122	Ci	0.00E 00	0.00E 00	0.00E 00	1.50E-04
Sb-124	Ci	0.00E 00	0.00E 00	0.00E 00	1.98E-05
Sb-125	Ci	0.00E 00	0.00E 00	6.43E-04	1.16E-03

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TABLE 3.4-2 LIQUID EFFLUENTS(Continued)

NUCLIDES RELEASED	UNIT	Continuous Mode		Batch Mode	
		QTR#3	QTR#4	QTR#3	QTR#4
Te-129	Ci	0.00E 00	0.00E 00	0.00E 00	1.71E-04
Te-129m	Ci	0.00E 00	0.00E 00	1.82E-04	0.00E 00
I-130	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
I-131	Ci	0.00E 00	0.00E 00	1.04E-05	4.52E-05
Te-132	Ci	0.00E 00	0.00E 00	1.67E-05	1.64E-05
I-132	Ci	0.00E 00	0.00E 00	4.65E-05	1.60E-05
I-133	Ci	0.00E 00	0.00E 00	2.99E-06	1.60E-05
I-134	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Cs-134	Ci	0.00E 00	0.00E 00	3.44E-05	1.85E-03
I-135	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Cs-136	Ci	0.00E 00	0.00E 00	0.00E 00	4.42E-05
Cs-137	Ci	0.00E 00	0.00E 00	1.42E-04	2.00E-03
Cs-138	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Ba-140	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
La-140	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Ce-141	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Ce-144	Ci	0.00E 00	0.00E 00	0.00E 00	1.48E-04
Pr-144	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
W-187	Ci	0.00E 00	0.00E 00	0.00E 00	2.89E-05
Np-239	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
TOTAL FOR PERIOD	Ci	0.00E+00	0.00E+00	5.06E-03	2.39E-02
Ar-41	Ci	0.00E 00	0.00E 00	0.00E 00	7.15E-06
Kr-85m	Ci	0.00E 00	0.00E 00	1.73E-06	2.08E-05
Kr-85	Ci	0.00E 00	0.00E 00	3.13E-01	4.91E-02
Kr-87	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Kr-88	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Xe-131m	Ci	0.00E 00	0.00E 00	2.83E-02	1.98E-03
Xe-133m	Ci	0.00E 00	0.00E 00	1.51E-02	0.00E 00
Xe-133	Ci	0.00E 00	0.00E 00	1.50E+00	7.94E-03
Xe-135m	Ci	0.00E 00	0.00E 00	0.00E 00	9.10E-06
Xe-135	Ci	0.00E 00	0.00E 00	2.30E-03	7.25E-06
Xe-138	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00

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TABLE 3.5-1
LIQUID EFFLUENTS - DOSE SUMMATION

AGE GROUP: ADULT

LOCATION: ANY ADULT

FISH AND SHELLFISH

<u>ORGAN</u>	<u>DOSE mrem</u>
Bone	3.93E-03
Liver	1.72E-02
Thyroid	5.12E-04
Kidney	6.90E-04
Lung	1.93E-02
GI-LLI	1.94E-02
Total Body	5.24E-03

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TABLE 3.5-2
LIQUID EFFLUENTS - DOSE SUMMATION

AGE GROUP: ADULT

LOCATION: ANY ADULT

FISH AND SHELLFISH

<u>ORGAN</u>	<u>DOSE mrem</u>
Bone	3.93E-03
Liver	1.72E-02
Thyroid	5.12E-04
Kidney	6.90E-04
Lung	1.93E-02
GI-LLI	1.94E-02
Total Body	5.24E-03

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TABLE 3.6-1 GASEOUS EFFLUENTS - SUMMATION OF ALL RELEASES

	UNIT	QTR#1	QTR#2
A. Fission and Activation Gases			
1. Total Release	Ci	0.00E+00	1.55E+01
2. Average Release Rate For Period	uCi/sec	0.00E+00	1.97E+00
B. Iodines			
1. Total Iodine-131	Ci	0.00E 00	0.00E 00
2. Average Release Rate For Period	uCi/sec	0.00E+00	0.00E+00
C. Particulates			
1. Particulates (Half Life > 8 days)	Ci	7.01E-07	2.11E-06
2. Average Release Rate For Period	uCi/sec	8.92E-08	2.68E-07
3. Gross Alpha Radioactivity	Ci	1.76E-08	1.24E-08
D. Tritium			
1. Total Release	Ci	6.58E+00	2.52E+01
2. Average Release Rate For Period	uCi/sec	8.37E-01	3.21E+00

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TABLE 3.6-1 GASEOUS EFFLUENTS - SUMMATION OF ALL RELEASES(Continued)

	UNIT	QTR#3	QTR#4
A. Fission and Activation Gases			
1. Total Release	Ci	6.02E+01	6.57E+00
2. Average Release Rate For Period	uCi/sec	7.66E+00	8.36E-01
B. Iodines			
1. Total Iodine-131	Ci	7.46E-04	7.31E-05
2. Average Release Rate For Period	uCi/sec	9.49E-05	9.30E-06
C. Particulates			
1. Particulates (Half Life > 8 days)	Ci	1.99E-06	9.57E-07
2. Average Release Rate For Period	uCi/sec	2.53E-07	1.22E-07
3. Gross Alpha Radioactivity	Ci	6.62E-08	3.33E-08
D. Tritium			
1. Total Release	Ci	3.36E+00	1.20E+00
2. Average Release Rate For Period	uCi/sec	4.28E-01	1.53E-01

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TABLE 3.6-2 GASEOUS EFFLUENTS - SUMMATION OF ALL RELEASES

	UNIT	QTR#1	QTR#2
A. Fission and Activation Gases			
1. Total Release	Ci	6.00E-01	4.12E-01
2. Average Release Rate For Period	uCi/sec	7.63E-02	5.24E-02
B. Iodines			
1. Total Iodine-131	Ci	2.96E-05	8.33E-06
2. Average Release Rate For Period	uCi/sec	3.76E-06	1.06E-06
C. Particulates			
1. Particulates (Half Life > 8 days)	Ci	1.39E-05	1.59E-05
2. Average Release Rate For Period	uCi/sec	1.77E-06	2.02E-06
3. Gross Alpha Radioactivity	Ci	2.74E-08	3.12E-08
D. Tritium			
1. Total Release	Ci	7.64E+00	2.23E+01
2. Average Release Rate For Period	uCi/sec	9.72E-01	2.84E+00

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TABLE 3.6-2 GASEOUS EFFLUENTS - SUMMATION OF ALL RELEASES(Continued)

	UNIT	QTR#3	QTR#4
A. Fission and Activation Gases			
1. Total Release	Ci	1.76E+00	5.36E-01
2. Average Release Rate For Period	uCi/sec	2.23E-01	6.82E-02
B. Iodines			
1. Total Iodine-131	Ci	0.00E 00	0.00E 00
2. Average Release Rate For Period	uCi/sec	0.00E+00	0.00E+00
C. Particulates			
1. Particulates (Half Life > 8 days)	Ci	9.60E-06	4.98E-06
2. Average Release Rate For Period	uCi/sec	1.22E-06	6.33E-07
3. Gross Alpha Radioactivity	Ci	1.62E-07	7.05E-08
D. Tritium			
1. Total Release	Ci	6.51E+01	1.82E+00
2. Average Release Rate For Period	uCi/sec	8.28E+00	2.31E-01

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TABLE 3.7-1 GASEOUS EFFLUENTS - GROUND LEVEL RELEASES

Nuclides Released	Unit	Continuous Mode		Batch Mode	
		QTR#1	QTR#2	QTR#1	QTR#2
1. Fission Gases					
Ar-41	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Kr-85m	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Kr-85	Ci	0.00E 00	0.00E 00	0.00E 00	3.13E+00
Kr-87	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Kr-88	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Kr-89	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Kr-90	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Xe-127	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Xe-131m	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Xe-133m	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Xe-133	Ci	0.00E 00	1.21E+01	0.00E 00	4.36E-04
Xe-135m	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Xe-135	Ci	0.00E 00	2.31E-01	0.00E 00	0.00E 00
Xe-137	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Xe-138	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Total for Period	Ci	0.00E+00	1.23E+01	0.00E+00	3.13E+00
2. Iodines					
I-131	Ci	0.00E 00	0.00E 00		
I-132	Ci	0.00E 00	0.00E 00		
I-133	Ci	6.50E-06	9.20E-05		
I-134	Ci	0.00E 00	0.00E 00		
I-135	Ci	0.00E 00	0.00E 00		
Total for Period	Ci	6.50E-06	9.20E-05		
3. Particulates (> 8 Days)					
Cr-51	Ci	0.00E 00	0.00E 00		
Mn-54	Ci	0.00E 00	0.00E 00		
Fe-55	Ci	0.00E 00	0.00E 00		
Co-57	Ci	0.00E 00	0.00E 00		
Co-58	Ci	0.00E 00	0.00E 00		
Fe-59	Ci	0.00E 00	0.00E 00		
Co-60	Ci	0.00E 00	0.00E 00		
Zn-65	Ci	0.00E 00	0.00E 00		
Zr-95	Ci	0.00E 00	0.00E 00		
Nb-95	Ci	0.00E 00	0.00E 00		

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TABLE 3.7-1 GASEOUS EFFLUENTS - GROUND LEVEL RELEASES(Continued)

Nuclides Released	Unit	Continuous Mode	
		QTR#1	QTR#2
3. Particulates (> 8 Days) (continued)			
Sr-89	Ci	0.00E 00	0.00E 00
Sr-90	Ci	0.00E 00	0.00E 00
Y-90	Ci	0.00E 00	0.00E 00
Ru-103	Ci	0.00E 00	0.00E 00
Ag-110	Ci	0.00E 00	0.00E 00
Sn-113	Ci	0.00E 00	0.00E 00
Sb-124	Ci	0.00E 00	0.00E 00
Sb-125	Ci	4.43E-07	0.00E 00
Te-129m	Ci	0.00E 00	0.00E 00
Cs-134	Ci	0.00E 00	0.00E 00
Cs-136	Ci	0.00E 00	0.00E 00
Cs-137	Ci	2.58E-07	2.11E-06
Ba-140	Ci	0.00E 00	0.00E 00
Ce-141	Ci	0.00E 00	0.00E 00
Ce-144	Ci	0.00E 00	0.00E 00
Total for Period	Ci	7.01E-07	2.11E-06
4. Particulates (< 8 Days)			
Mn-56	Ci	0.00E 00	0.00E 00
Ni-65	Ci	0.00E 00	0.00E 00
Br-82	Ci	0.00E 00	0.00E 00
Rb-88	Ci	0.00E 00	0.00E 00
Rb-89	Ci	0.00E 00	0.00E 00
Sr-91	Ci	0.00E 00	0.00E 00
Sr-92	Ci	0.00E 00	0.00E 00
Y-92	Ci	0.00E 00	0.00E 00
Zr-97	Ci	0.00E 00	0.00E 00
Nb-97	Ci	0.00E 00	0.00E 00
Tc-99m	Ci	0.00E 00	0.00E 00
Mo-99	Ci	0.00E 00	0.00E 00
Sb-122	Ci	0.00E 00	0.00E 00
Te-129	Ci	0.00E 00	0.00E 00
Te-132	Ci	0.00E 00	0.00E 00
Cs-138	Ci	0.00E 00	0.00E 00
La-140	Ci	0.00E 00	0.00E 00
Pr-144	Ci	0.00E 00	0.00E 00
W-187	Ci	0.00E 00	0.00E 00
Np-239	Ci	0.00E 00	0.00E 00
Total for Period	Ci	0.00E+00	0.00E+00

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TABLE 3.7-1 GASEOUS EFFLUENTS - GROUND LEVEL RELEASES(Continued)

Nuclides Released	Unit	Continuous Mode		Batch Mode	
		QTR#3	QTR#4	QTR#3	QTR#4
1. Fission Gases					
Ar-41	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Kr-85m	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Kr-85	Ci	0.00E 00	0.00E 00	2.45E+01	5.23E+00
Kr-87	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Kr-88	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Kr-89	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Kr-90	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Xe-127	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Xe-131m	Ci	0.00E 00	0.00E 00	2.31E-01	8.41E-02
Xe-133m	Ci	0.00E 00	0.00E 00	1.34E-01	0.00E 00
Xe-133	Ci	2.19E+01	0.00E 00	1.12E+01	1.26E+00
Xe-135m	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Xe-135	Ci	2.20E+00	0.00E 00	6.66E-02	0.00E 00
Xe-137	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Xe-138	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Total for Period	Ci	2.41E+01	0.00E+00	3.62E+01	6.57E+00
2. Iodines					
I-131	Ci	7.46E-04	7.31E-05		
I-132	Ci	0.00E 00	0.00E 00		
I-133	Ci	4.37E-05	0.00E 00		
I-134	Ci	0.00E 00	0.00E 00		
I-135	Ci	0.00E 00	0.00E 00		
Total for Period	Ci	7.90E-04	7.31E-05		
3. Particulates (> 8 Days)					
Cr-51	Ci	0.00E 00	0.00E 00		
Mn-54	Ci	0.00E 00	0.00E 00		
Fe-55	Ci	0.00E 00	0.00E 00		
Co-57	Ci	0.00E 00	0.00E 00		
Co-58	Ci	0.00E 00	0.00E 00		
Fe-59	Ci	0.00E 00	0.00E 00		
Co-60	Ci	0.00E 00	0.00E 00		
Zn-65	Ci	0.00E 00	0.00E 00		
Zr-95	Ci	0.00E 00	0.00E 00		
Nb-95	Ci	0.00E 00	0.00E 00		

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TABLE 3.7-1 GASEOUS EFFLUENTS - GROUND LEVEL RELEASES(Continued)

Nuclides Released	Unit	Continuous Mode	
		QTR#3	QTR#4
3. Particulates (> 8 Days) (continued)			
Sr-89	Ci	0.00E 00	1.15E-07
Sr-90	Ci	7.56E-07	0.00E 00
Y-90	Ci	7.56E-07	0.00E 00
Ru-103	Ci	0.00E 00	0.00E 00
Ag-110	Ci	0.00E 00	0.00E 00
Sn-113	Ci	0.00E 00	0.00E 00
Sb-124	Ci	0.00E 00	0.00E 00
Sb-125	Ci	0.00E 00	0.00E 00
Te-129m	Ci	0.00E 00	0.00E 00
Cs-134	Ci	0.00E 00	0.00E 00
Cs-136	Ci	0.00E 00	0.00E 00
Cs-137	Ci	4.79E-07	8.42E-07
Ba-140	Ci	0.00E 00	0.00E 00
Ce-141	Ci	0.00E 00	0.00E 00
Ce-144	Ci	0.00E 00	0.00E 00
Total for Period	Ci	1.99E-06	9.57E-07
4. Particulates (< 8 Days)			
Mn-56	Ci	0.00E 00	0.00E 00
Ni-65	Ci	0.00E 00	0.00E 00
Br-82	Ci	0.00E 00	0.00E 00
Rb-88	Ci	0.00E 00	0.00E 00
Rb-89	Ci	0.00E 00	0.00E 00
Sr-91	Ci	0.00E 00	0.00E 00
Sr-92	Ci	0.00E 00	0.00E 00
Y-92	Ci	0.00E 00	0.00E 00
Zr-97	Ci	0.00E 00	0.00E 00
Nb-97	Ci	0.00E 00	0.00E 00
Tc-99m	Ci	0.00E 00	0.00E 00
Mo-99	Ci	0.00E 00	0.00E 00
Sb-122	Ci	0.00E 00	0.00E 00
Te-129	Ci	0.00E 00	0.00E 00
Te-132	Ci	0.00E 00	0.00E 00
Cs-138	Ci	0.00E 00	0.00E 00
La-140	Ci	0.00E 00	0.00E 00
Pr-144	Ci	0.00E 00	0.00E 00
W-187	Ci	0.00E 00	0.00E 00
Np-239	Ci	0.00E 00	0.00E 00
Total for Period	Ci	0.00E+00	0.00E+00

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TABLE 3.7-2 GASEOUS EFFLUENTS - GROUND LEVEL RELEASES

Nuclides Released	Unit	Continuous Mode		Batch Mode	
		QTR#1	QTR#2	QTR#1	QTR#2
1. Fission Gases					
Ar-41	Ci	0.00E 00	0.00E 00	2.47E-01	2.44E-01
Kr-85m	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Kr-85	Ci	0.00E 00	0.00E 00	3.88E-02	1.12E-02
Kr-87	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Kr-88	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Kr-89	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Kr-90	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Xe-127	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Xe-131m	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Xe-133m	Ci	0.00E 00	0.00E 00	9.65E-04	8.90E-04
Xe-133	Ci	0.00E 00	0.00E 00	2.95E-01	1.52E-01
Xe-135m	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Xe-135	Ci	0.00E 00	0.00E 00	1.72E-02	3.90E-03
Xe-137	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Xe-138	Ci	0.00E 00	0.00E 00	1.06E-03	0.00E 00
Total for Period	Ci	0.00E+00	0.00E+00	6.00E-01	4.12E-01
2. Iodines					
I-131	Ci	2.96E-05	8.33E-06		
I-132	Ci	0.00E 00	0.00E 00		
I-133	Ci	7.88E-04	1.19E-03		
I-134	Ci	0.00E 00	0.00E 00		
I-135	Ci	0.00E 00	0.00E 00		
Total for Period	Ci	8.18E-04	1.20E-03		
3. Particulates (> 8 Days)					
Cr-51	Ci	0.00E 00	0.00E 00		
Mn-54	Ci	0.00E 00	0.00E 00		
Fe-55	Ci	0.00E 00	0.00E 00		
Co-57	Ci	0.00E 00	0.00E 00		
Co-58	Ci	0.00E 00	0.00E 00		
Fe-59	Ci	0.00E 00	0.00E 00		
Co-60	Ci	0.00E 00	0.00E 00		
Zn-65	Ci	0.00E 00	0.00E 00		
Zr-95	Ci	0.00E 00	0.00E 00		
Nb-95	Ci	0.00E 00	0.00E 00		

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TABLE 3.7-2 GASEOUS EFFLUENTS - GROUND LEVEL RELEASES(Continued)

Nuclides Released	Unit	Continuous Mode	
		QTR#1	QTR#2
3. Particulates (> 8 Days) (continued)			
Sr-89	Ci	0.00E 00	7.96E-06
Sr-90	Ci	6.89E-06	3.79E-06
Y-90	Ci	6.89E-06	3.79E-06
Ru-103	Ci	0.00E 00	0.00E 00
Ag-110	Ci	0.00E 00	0.00E 00
Sn-113	Ci	0.00E 00	0.00E 00
Sb-124	Ci	0.00E 00	0.00E 00
Sb-125	Ci	0.00E 00	0.00E 00
Te-129m	Ci	0.00E 00	0.00E 00
Cs-134	Ci	0.00E 00	0.00E 00
Cs-136	Ci	0.00E 00	0.00E 00
Cs-137	Ci	1.39E-07	3.66E-07
Ba-140	Ci	0.00E 00	0.00E 00
Ce-141	Ci	0.00E 00	0.00E 00
Ce-144	Ci	0.00E 00	0.00E 00
Total for Period	Ci	1.39E-05	1.59E-05

4. Particulates (< 8 Days)

Mn-56	Ci	0.00E 00	0.00E 00
Ni-65	Ci	0.00E 00	0.00E 00
Br-82	Ci	0.00E 00	0.00E 00
Rb-88	Ci	0.00E 00	0.00E 00
Rb-89	Ci	0.00E 00	0.00E 00
Sr-91	Ci	0.00E 00	0.00E 00
Sr-92	Ci	0.00E 00	0.00E 00
Y-92	Ci	0.00E 00	0.00E 00
Zr-97	Ci	0.00E 00	0.00E 00
Nb-97	Ci	0.00E 00	0.00E 00
Tc-99m	Ci	0.00E 00	0.00E 00
Mo-99	Ci	0.00E 00	0.00E 00
Sb-122	Ci	0.00E 00	0.00E 00
Te-129	Ci	0.00E 00	0.00E 00
Te-132	Ci	0.00E 00	0.00E 00
Cs-138	Ci	0.00E 00	0.00E 00
La-140	Ci	0.00E 00	0.00E 00
Pr-144	Ci	0.00E 00	0.00E 00
W-187	Ci	0.00E 00	0.00E 00
Np-239	Ci	0.00E 00	0.00E 00
Total for Period	Ci	0.00E+00	0.00E+00

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TABLE 3.7-2 GASEOUS EFFLUENTS - GROUND LEVEL RELEASES(Continued)

Nuclides Released	Unit	Continuous Mode		Batch Mode	
		QTR#3	QTR#4	QTR#3	QTR#4
1. Fission Gases					
Ar-41	Ci	0.00E 00	0.00E 00	2.72E-01	2.78E-01
Kr-85m	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Kr-85	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Kr-87	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Kr-88	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Kr-89	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Kr-90	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Xe-127	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Xe-131m	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Xe-133m	Ci	0.00E 00	0.00E 00	4.44E-03	0.00E 00
Xe-133	Ci	1.13E+00	2.53E-01	3.50E-01	4.43E-03
Xe-135m	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Xe-135	Ci	0.00E 00	0.00E 00	8.74E-04	7.52E-04
Xe-137	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Xe-138	Ci	0.00E 00	0.00E 00	0.00E 00	0.00E 00
Total for Period	Ci	1.13E+00	2.53E-01	6.27E-01	2.83E-01
2. Iodines					
I-131	Ci	0.00E 00	0.00E 00		
I-132	Ci	0.00E 00	0.00E 00		
I-133	Ci	3.46E-05	3.66E-05		
I-134	Ci	0.00E 00	0.00E 00		
I-135	Ci	0.00E 00	0.00E 00		
Total for Period	Ci	3.46E-05	3.66E-05		
3. Particulates (> 8 Days)					
Cr-51	Ci	0.00E 00	0.00E 00		
Mn-54	Ci	0.00E 00	0.00E 00		
Fe-55	Ci	0.00E 00	0.00E 00		
Co-57	Ci	0.00E 00	0.00E 00		
Co-58	Ci	0.00E 00	0.00E 00		
Fe-59	Ci	0.00E 00	0.00E 00		
Co-60	Ci	0.00E 00	0.00E 00		
Zn-65	Ci	0.00E 00	0.00E 00		
Zr-95	Ci	0.00E 00	0.00E 00		
Nb-95	Ci	0.00E 00	0.00E 00		

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TABLE 3.7-2 GASEOUS EFFLUENTS - GROUND LEVEL RELEASES(Continued)

Nuclides Released	Unit	Continuous Mode	
		QTR#3	QTR#4
3. Particulates (> 8 Days) (continued)			
Sr-89	Ci	3.58E-06	3.31E-06
Sr-90	Ci	2.74E-06	0.00E 00
Y-90	Ci	2.74E-06	0.00E 00
Ru-103	Ci	0.00E 00	0.00E 00
Ag-110	Ci	0.00E 00	0.00E 00
Sn-113	Ci	0.00E 00	0.00E 00
Sb-124	Ci	0.00E 00	0.00E 00
Sb-125	Ci	0.00E 00	0.00E 00
Te-129m	Ci	0.00E 00	0.00E 00
Cs-134	Ci	0.00E 00	0.00E 00
Cs-136	Ci	0.00E 00	0.00E 00
Cs-137	Ci	5.42E-07	1.67E-06
Ba-140	Ci	0.00E 00	0.00E 00
Ce-141	Ci	0.00E 00	0.00E 00
Ce-144	Ci	0.00E 00	0.00E 00
Total for Period	Ci	9.60E-06	4.98E-06
4. Particulates (< 8 Days)			
Mn-56	Ci	0.00E 00	0.00E 00
Ni-65	Ci	0.00E 00	0.00E 00
Br-82	Ci	0.00E 00	0.00E 00
Rb-88	Ci	0.00E 00	0.00E 00
Rb-89	Ci	0.00E 00	0.00E 00
Sr-91	Ci	0.00E 00	0.00E 00
Sr-92	Ci	0.00E 00	0.00E 00
Y-92	Ci	0.00E 00	0.00E 00
Zr-97	Ci	0.00E 00	0.00E 00
Nb-97	Ci	0.00E 00	0.00E 00
Tc-99m	Ci	0.00E 00	0.00E 00
Mo-99	Ci	0.00E 00	0.00E 00
Sb-122	Ci	0.00E 00	0.00E 00
Te-129	Ci	0.00E 00	0.00E 00
Te-132	Ci	0.00E 00	0.00E 00
Cs-138	Ci	0.00E 00	0.00E 00
La-140	Ci	0.00E 00	0.00E 00
Pr-144	Ci	0.00E 00	0.00E 00
W-187	Ci	0.00E 00	0.00E 00
Np-239	Ci	0.00E 00	0.00E 00
Total for Period	Ci	0.00E+00	0.00E+00

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TABLE 3.8-1
 GASEOUS EFFLUENTS - DOSE SUMMATION

AGE GROUP: INFANT

Pathway	Bone mrem	Liver mrem	Thyroid mrem	Kidney mrem
Ground Plane(a)				
Cow - Milk (b)	4.06E-05	1.88E-04	1.34E-02	7.29E-05
Inhalation (a)	8.24E-07	2.93E-04	5.21E-04	1.28E-04
Total	4.14E-05	4.81E-04	1.39E-02	2.01E-04

Pathway	Lung mrem	GI-LLI mrem	T. Body mrem
Ground Plane (a)			5.14E-06
Cow - Milk (b)	1.43E-04	1.44E-04	1.67E-04
Inhalation (a)	2.93E-04	2.93E-04	2.93E-04
Total	4.36E-04	4.37E-04	4.65E-04

(a) Sector : SE Range: 1.50 miles
 (b) Sector : W Range: 4.25 miles(default milk animal)

Noble Gases	mrad
Gamma Air Dose	4.83E-04
Beta Air Dose	2.65E-03

Sector: SE Range: 1.5 miles

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TABLE 3.8-2
 GASEOUS EFFLUENTS - DOSE SUMMATION

AGE GROUP: INFANT

Pathway	Bone mrem	Liver mrem	Thyroid mrem	Kidney mrem
Ground Plane(a)				
Cow - Milk (b)	4.54E-05	3.85E-04	1.43E-03	1.67E-04
Inhalation (a)	3.90E-06	7.80E-04	9.68E-04	3.41E-04
Total	4.93E-05	1.17E-03	2.40E-03	5.08E-04

Pathway	Lung mrem	GI-LLI mrem	T. Body mrem
Ground Plane(a)			3.21E-06
Cow - Milk (b)	3.78E-04	3.79E-04	3.89E-04
Inhalation (a)	7.84E-04	7.79E-04	7.80E-04
Total	1.16E-03	1.16E-03	1.17E-03

(a) Sector : SE Range: 1.50 miles
 (b) Sector : W Range: 4.25 miles(default)

Noble Gases	mrad
Gamma Air Dose	2.33E-04
Beta Air Dose	1.30E-04

Sector: SE Range: 1.5 miles

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UNITS 1 AND 2, TABLE 3.9

A. Solid Waste Shipped Off-Site for Burial or Disposal

1. Type of Waste	Unit	12 Mo. Period	Error %
a. Spent Resin, Process Filters	M3	3.75 E+0	2.00E+01
	Ci	9.02 E+1	
b. Dry Compressible Waste (Note 5)	M3	5.75E+01	2.00E+01
	Ci	1.55E+01	
c. Irradiated Components	M3	0	N/A *
	Ci	0	
d. Other (Note 6)			
1. Metal ingot, of processed resins	M3	2.42E-01	2.00E+01
	Ci	7.78E+00	

2. Estimate of Major Nuclide Composition (By Waste Type)

Category	Nuclide	%
a.	Fe55	2.90E+01
	Ni63	2.68E+01
	Co60	1.88E+01
	Cs137	1.17E+01
	Cs134	5.10E+00
	Mn54	3.54E+00
	Co58	2.97E+00
	Sb125	1.07E+00
	C14	5.20E-01
b.	Ni63	3.29E+01
	Co60	2.39E+01
	Fe55	2.27E+01
	Co58	8.23E+00
	Cs137	8.15E+00
	Mn54	1.13E+00
	Cr51	6.90E-01
	Sb125	5.00E-01
	Nb95	4.40E-01
Zr95	4.30E-01	
c.	N/A*	N/A*

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UNITS 1 AND 2, TABLE 3.9(Continued)

2. Estimate of major nuclide composition (Continued)

Category	Nuclide	%
d.1	Fe55	2.01E+01
	Co58	1.95E+01
	Ni63	1.86E+01
	Co60	1.81E+01
	Sb125	7.58E+00
	Cs137	7.32E+00
	Cs134	3.62E+00
	Be7	2.32E+00
	Mn54	2.10E+00
	Sb124	3.66E-01

3. Solid Waste Disposition

Number of Shipments	Mode of Transportation	Destination
4	Sole Use Truck	Barnwell, SC
13	Sole Use Truck	GTSD, Oak Ridge, TN
2	Sole Use Truck	ATG, Oak Ridge, TN

B. Irradiated Fuel Shipments

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

*N/A = Not Applicable

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UNITS 1 AND 2, TABLE 3.9 (CONTINUED)**

Waste Class	Total Volume Cubic Ft.	Total Curies (Note 1)	Principal Radionuclides (Notes 1 & 2)	Type of Waste (Note 3)	Category Reg. Guide 1.21	Type of Container (Note 4)	Solidification Agent
Class A	1561.95	1.61	N/A	PWR Compactible trash (Note 5)	1.b.	Non-Specification Strong Tight Package	None
Class A	202.1	7.78	Ni63, Cs137	PWR Compactible trash	1.b.	NRC Certified LSA Type A	None
Class A	264.8	6.14	Ni63, Cs137, Sr90	PWR Compactible Trash	1.b.	NRC Certified Type B	None
Class B	132.4	90.2	Co60, Ni63, Sr90, Cs137, C14, TRU SUM Nuclides T1/2 < 5yrs	PWR Ion Exchange Resins	1.a.	NRC Certified Type B	None
Class B	8.56	7.78	Ni63, Cs137 Sr90	Metal Ingot (Note 6)	1.d.1	US DOT 7A Type A	None

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UNITS 1 AND 2, TABLE 3.9 (CONTINUED)

SOLID WASTE SUPPLEMENT

NOTE 1: The total radionuclide activity and composition of solid waste shipped from the St. Lucie Plant Units 1 and 2 are determined using a combination of qualitative techniques. In general, the St. Lucie Plant follows the guidelines outlined in the Low Level Waste Branch Technical Position (BTP) on Radioactive Waste Classification (5/11/83) for these determinations. The most frequently used techniques for determining the total activity in a package are the "Dose-to-Curie" method and "Concentration Times Volume or Mass" calculations. Where appropriate, engineering type activation analyses may be applied. Since each of the above methodologies involve, to some extent, qualitative parameters, the total activity is considered to be an estimate.

The composition of radionuclides in the waste is determined by both on-site analyses for principal gamma emitters and periodic off-site analyses for other radionuclides. The onsite analyses are performed either on a batch basis or on a routine basis using reasonably representative samples as appropriate for the waste type. Off-site analyses are used to establish scaling factors or other estimates for radionuclides such as H3, C14, Fe55, Sr90, Tc99, I129, Pu238, Pu239/240, Pu241, Am241, Cm242, and Cm243/244.

NOTE 2: "Principal Radionuclides" refer to those radionuclides contained in the waste in concentrations greater than 0.01 times the concentration of nuclides listed in Table 1 or 0.01 times the smallest concentration of nuclides listed in Table 2 of 10 CFR 61.

NOTE 3: "Type of Waste" is generally specified as described in NUREG-0782, Draft Environmental Impact Statement on 10 CFR 61, "Licensing Requirements for Land Disposal of Radioactive Waste."

NOTE 4: "Type of Container" refers to the transport package.

NOTE 5: The volume and activity listed for Dry Compressible Waste represent the quantity of material that during the reporting period was sent to the licensed disposal facilities. Some of this material was shipped to contract vendors for volume reduction or recycle prior to final disposal at the licensed disposal facilities. During the reporting period, thirteen (13) shipments of dry compactible waste, non-compactible waste, and resins (15500 Cubic Feet, 7.3E-1 Curies) were made from the St. Lucie Plant to the volume reduction facilities. These materials were shipped via "Sole Use Truck" in non-specification, strong tight containers.

NOTE 6: The volume and activity listed for the Metal Ingot represent the quantity of material that during the reporting period was sent to the licensed disposal facility. This material was shipped to a contract vendor in bead resin form for volume reduction prior to final disposal at the licensed disposal facility. During the reporting period, two shipments of bead resin were made from the St. Lucie Plant to the contract vendor (294 Cubic Feet, 15.45 Curies) for volume reduction treatment and disposal.

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Attachment - A
Assumption used for ODCM Table 4.11-2 "Batch" Sample Analysis

Description of the Event:

On March 14, 1999, a Containment gaseous activity sample was obtained prior to performing a containment mini-purge to slightly reduce Unit 2 containment building pressure to maintain Technical Specification pressure limits. The reactor was operating at power.

A 4600 cubic centimeter(cc) gas sample results indicated no noble gas activity and a tritium analysis indicated 5.5E-08 uCi/cc. The technician processed the results and issued the administrative release permit to operations to perform the release for a maximum duration of one hour at 2550 cubic feet per minute release rate. The release was performed for a duration of 58 minutes.

The area supervisor reviewed the results after the release and noted that the release's gas activity analyses results were well below LLD, but were lower than usual for this release pathway. There were no deviations noted in the completed sampling procedure. There was no increase in the continuous monitor gas activity channel during the actual release (none would be expected).

Assumptions used to determine specific activity for the March 14, 1999 release:

To conservatively estimate the probable radioactivity for the March 14, 1999, release, an average of the releases before and after was calculated for the below nuclides:

Permit Number	Date of release	Xe-133 uCi/cc	Xe-135 uCi/cc	Ar-41 uCi/cc	Tritium uCi/cc
21	3/10/99	2.80E-06	1.50E-07	2.30E-06	3.20E-06
23	3/19/99	3.20E-06	1.60E-07	2.40E-06	1.60E-06
Average concentration		3.00E-06	1.55E-07	2.35E-06	2.40E-06

ODCM required LLD's are = (LLD = Lower Limit of Detection)	1.00E-04	1.00E-04	1.00E-04	1.00E-06
Calculated Curies released on March 14, 1999 =	1.26E-02	6.44E-04	9.81E-03	1.01E-02

The average activity of the gas release source was a factor of 33 below the required analysis LLD and the tritium was 2.4 times greater than it's ODCM LLD activity.

The averaging was performed to more accurately report the activity that was released on March 14, 1999, rather than assume zero noble gas activity and lower than average tritium.

Reference

ODCM Radioactive Effluents 3/4.11.6 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT TO THE COMMISSION

ODCM Control 3.11.2.6 b. states " All assumptions used in making assessments, i.e., specific activity, exposure time and location shall be included in these reports,"

The inclusion of this Attachment in the Annual Report fulfills the ODCM requirement.

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Attachment - B

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**Major changes to Radioactive Liquid, Gaseous and Solid Waste
Treatment Systems**

FLASH TANK OPERATION (UNITS 1 & 2)

Safety Evaluation PSL-ENG-SENS-98-085 Summary:

The 1996 UFSAR review process identified two discrepancies related to the current operation of the flash tank applicable to both units. According to the findings, the flash tank is bypassed to the holdup tanks in each unit during normal plant operations, which is contrary to the operation described in the UFSAR.

This evaluation provided the necessary Unit 1 and 2 UFSAR change packages and justified current operating practices. The option for flash tank use will be kept in the UFSAR for plant operations whenever a minimum amount of fuel failures is experienced or whenever hydrogen or fission gas stripping is required.

LIQUID WASTE MANAGEMENT SYSTEM (UNIT 2)

Safety Evaluation PSL-ENG-SENS-98-068 Summary:

The 1996 UFSAR review effort identified a number of discrepancies related to Liquid Waste Management System (LWMS) operations, described in UFSAR Section 11.2. Specifically, the operation of the boric acid concentrators, waste concentrator and associated components is not performed as described in the UFSAR. This equipment and associated components have not been used for many years, and alternative waste processing methods have been implemented. This safety evaluation analyzed and evaluated these alternative methods for regulatory compliance and revised the UFSAR accordingly.

This safety evaluation demonstrated that the UFSAR changes did not adversely affect plant safety, security, or operation. This safety evaluation also demonstrated that this activity neither constituted an unreviewed safety question nor required a change to the Technical Specifications. Therefore, prior NRC approval for implementation of these changes was not required.

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**Major changes to Radioactive Liquid, Gaseous and Solid Waste
Treatment Systems**

LIQUID WASTE MANAGEMENT SYSTEM (UNIT 1)

Safety Evaluation PSL-ENG-SENS-98-096 Summary:

The 1996 UFSAR review effort identified a number of discrepancies for the Unit 2 UFSAR related to the Liquid Waste Management System (LWMS) operations described in the UFSAR. Specifically, the operation of the boric acid concentrators, waste concentrator and supporting components is not performed as described in the UFSAR. These components are no longer used for both units, and alternative waste processing methods have been implemented. This safety evaluation analyzed and evaluated these alternative methods for regulatory compliance and revised the Unit 1 UFSAR accordingly. Also, this evaluation justified the abandonment of liquid waste discharge radiation monitor RE-26-64.

This safety evaluation demonstrated that the UFSAR changes provided did not adversely affect plant safety, security or operation. This safety evaluation also demonstrated that this activity neither constituted an unreviewed safety question nor required a change to the Technical Specifications. Therefore, prior NRC approval for implementation of these changes was not required.

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EFFLUENT AND WASTE DISPOSAL SUPPLEMENTAL INFORMATION.

Attachment - C

ODCM Revision 21
(A complete copy)