

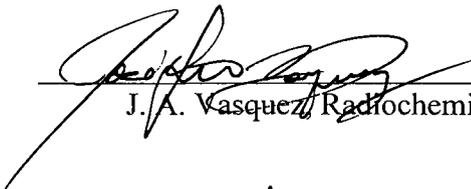
Florida Power and Light
Turkey Point Plant
Units 3 and 4

ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

January 2013 through December 2013

Submitted by:

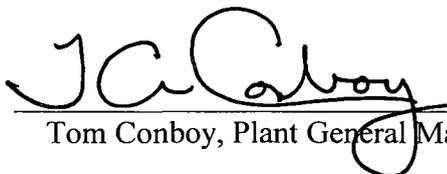
NUCLEAR CHEMISTRY DEPARTMENT
FLORIDA POWER AND LIGHT COMPANY



J. A. Vasquez, Radiochemist



N. Rios, Chemistry Manager



Tom Conboy, Plant General Manager

Table of Contents

EXECUTIVE SUMMARY.....	3
1.0 REGULATORY LIMITS	3
2.0 EFFLUENT CONCENTRATION.....	4
3.0 AVERAGE ENERGY	4
4.0 MEASUREMENTS AND APPROXIMATIONS OF TOTAL ACTIVITY	4
5.0 BATCH RELEASES	7
6.0 UNPLANNED RELEASES	8
7.0 REACTOR COOLANT ACTIVITY	8
8.0 SITE RADIATION DOSE.....	9
9.0 OFFSITE DOSE CALCULATION MANUAL (ODCM) REVISIONS	10
10.0 SOLID WASTE AND IRRADIATED FUEL SHIPMENTS	10
11.0 PROCESS CONTROL PROGRAM REVISIONS.....	10
12.0 INOPERABLE EFFLUENT MONITORING INSTRUMENTATION	10
13.0 NEI's INDUSTRY INITIATIVE ON GROUND WATER SAMPLING	10
14.0 ANNUAL LAND-CENSUS CHANGES	10
UNIT 3 REG GUIDE 1.21 TABLES.....	11
UNIT 4 REG GUIDE 1.21 TABLES.....	28
SITE DOSE REG GUIDE 1.21 TABLES.....	47
ATTACHMENT A, SOLID WASTE AND IRRADIATED FUEL SHIPMENTS.....	65
ATTACHMENT B, ODCM.....	68

EXECUTIVE SUMMARY

Gaseous and liquid effluent releases were quantified, and calculations performed in accordance with the Off-Site Dose Calculation Manual (ODCM) for the period of release of January 2013 through December 2013. The derived dose calculations to the public were a small fraction of the limits allowed in the ODCM. No single liquid or gaseous discharge exceeded the limits set forth in the ODCM. The following information includes the required information for the Annual Radioactive Effluent Release Report for Turkey Point Units 3, 4, and site (combined) as outlined in Regulatory Guide 1.21 Revision 2.

1.0 REGULATORY LIMITS

1.1 Liquid Effluent

- (a) The concentration of radioactive material released in liquid effluents to unrestricted areas shall not exceed ten times the concentration specified in 10CFR20 Appendix B, Table 2, Column 2 for radionuclides other than dissolved or entrained gases. For dissolved or entrained noble gases, the concentration shall not exceed 2.0E-04 micro-curies per milliliter total activity.
- (b) The dose or dose commitment per reactor to a member of the public from any radioactive materials in liquid effluents released to unrestricted areas shall be limited as follows:
 - During any calendar quarter, to less than or equal to 1.5 mrem to the total body and less than or equal to 5 mrem to any organ.
 - During any calendar year, to less than or equal to 3.0 mrem to the total body and less than or equal to 10 mrem to any organ.

1.2 Gaseous Effluent

- (a) The dose rate due to radioactive materials released in gaseous effluent from the site to areas at and beyond the site boundary shall be limited to the following:
 - Less than or equal to 500 mrem per year to the total body and less than or equal to 3000 mrem per year to the skin due to noble gases.
 - Less than or equal to 1500 mrem per year to any organ due to I-131, I-133, tritium, and for all radioactive materials in particulate form with half-lives greater than 8 days.
- (b) The air dose per reactor to areas at and beyond the site boundary due to noble gases released in gaseous effluents shall be limited to:
 - During any calendar quarter, to less than or equal to 5 mrad for gamma radiation and less than or equal to 10 mrad for beta radiation.
 - During any calendar year, to less than or equal to 10 mrad for gamma radiation and less than or equal to 20 mrad for beta radiation.

- (c) The dose per reactor to a member of the public, due to I-131, I-133, Tritium, Carbon-14 and all radionuclides in particulate form with half-lives greater than 8 days in gaseous effluent released to areas at and beyond the site boundary shall not exceed 7.5 mrem to any organ during any calendar quarter and shall not exceed 15 mrem to any organ during any calendar year. Carbon-14 dose was calculated using the guidance of Regulatory Guide 1.109, Calculations of Annual Doses to Man from Routine Releases of Reactor Effluents for the purpose of Evaluation Compliance with 10CFR Part 50, Appendix 1, Rev1, Oct 1977.

1.3 Limits of Total Dose to Members of the Public

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

2.0 EFFLUENT CONCENTRATION

Water : In accordance with 10CFR20, Appendix B, Table 2, Column 2, and 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 of this report.

3.0 AVERAGE ENERGY

The average energy of fission and activation gases in effluents is not applicable.

4.0 MEASUREMENTS AND APPROXIMATIONS OF TOTAL ACTIVITY

All liquid and airborne discharges to the environment during this period were analyzed in accordance with Technical Specification requirements. The minimum frequency of analysis as required by Regulatory Guide 1.21 was met or exceeded.

4.1 Liquid Effluents

Aliquots of representative pre-release samples, from the waste disposal system, were isotopically analyzed for gamma emitting isotopes on a multichannel analyzer.

Frequent periodic sampling and analysis were used to determine if radioactivity was being released via the steam generator blowdown system and the storm drain system.

Monthly and quarterly composite samples for the waste disposal system were prepared to give proportional weight to each liquid release made during the designated period of accumulation. The monthly composite was analyzed for tritium and gross alpha radioactivity. Tritium was determined by use of liquid scintillation techniques, and gross alpha radioactivity was determined

by use of a solid state scintillation system. The quarterly composite was analyzed for Sr-89, Sr-90, Ni-63, and Fe-55 by chemical separation.

Canal Evaporation dose calculations were done in accordance with the ODCM Control 2.5 as return/reuse of previous discharged radioactive effluents. This is calculated as a continuous release as gas evaporation.

All radioactivity concentrations determined from sample analysis of a pre-release composite were multiplied by the total represented volume of the liquid waste released to determine the total quantity of each isotope and of gross alpha activity released during the compositing period.

Aliquots of representative samples from the waste disposal system were analyzed on a pre-release basis by gamma spectral analysis. The resulting isotope concentrations were multiplied by the total volume released in order to estimate the total dissolved gases released.

The liquid waste treatment system is shared by both units at the site and generally all liquid releases are allocated on a 50/50 basis to each unit respectively.

There were no continuous releases above the lower limit of detection for Unit 3 or 4 via normal release paths.

4.2 Gaseous Effluents

Airborne releases to the atmosphere occurred from the following sources:

- Gas Decay Tanks
- Containment Purges
- RWST via vent line
- Condenser Off-gas
- Releases incidental to operation of the plant.
- Canal Evaporation
- Containment Hatch (when open during outages)

The techniques employed in determining the radioactivity in airborne releases are:

- a) Gamma spectral analysis for fission and activation gases,
- b) Removal of particulate material by filtration and subsequent gamma spectral analysis, Sr-89, Sr-90 determination, and gross alpha determination,
- c) Absorption of halogen radionuclides on a charcoal filter and subsequent gamma spectral analysis, and
- d) Analysis of water vapor in a gas sample for tritium using liquid scintillation techniques.
- e) Carbon-14 curies were calculated using the guidance of "Estimation of Carbon-14 in Nuclear Power Plant Gaseous Effluents", TR 1021106, EPRI, Palo Alto, CA:2010

All gaseous releases from the plant which were not accounted for by the above methods were conservatively estimated as curies of Xe-133 by use of the SPING-4 radiation monitors and the

Plant Vent process monitor data using the current calibration curve for that process monitor. This method was not used this reporting period.

Both units share portions of the gaseous waste treatment system and generally all gaseous releases from the shared system are allocated on a 50/50 basis to each unit.

Meteorological data for the period January 2013 through December 2013, in the form of Joint Frequency Distribution Tables, are maintained on site.

4.3 Estimation of Errors

a) Sampling Error

The error associated with volume measurement devices, flow measuring devices, etc., based on calibration data and design tolerances has been conservatively estimated to be collectively less than $\pm 10\%$.

b) Analytical Error

Our Q.C. Cross-Check Program involves counting unknown samples provided by an independent external lab. The errors associated with our analysis of these unknown samples, reported to us by the independent lab, were used as the basis for deriving the following analytical error terms:

<u>NUCLIDE TYPE</u>	<u>AVERAGE ERROR</u>	<u>MAXIMUM ERROR</u>
Liquid	$\pm 1.97\%$	$\pm 2.63\%$
Gaseous	$\pm 2.20\%$	$\pm 3.07\%$

4.4 Radioactive Waste Treatment System Changes

a) Sampling Error

The error associated with volume measurement devices, flow measuring devices, etc., based on calibration data and design tolerances has been conservatively estimated to be collectively less than $\pm 10\%$.

5.0 BATCH RELEASES

Batch releases are summarized in the attached tables for Unit 3, Unit 4, and Site.

6.0 UNPLANNED RELEASES

6.1 Liquid

There was one unplanned release this period. On 9/30/13 approximately 80 gallons of Unit 4 RWST water was lost. The spill happened due to an improperly installed drain/seal water line on the Unit 4 Refueling Water Purification Pump (4P209) from maintenance activity. The spill was stopped by operations by closing the suction valve to the Unit 4 Refueling Water Purification Pump. An undetermined amount of the 80 gallons was spilled on the gravel area surrounding the Unit 4 RWST, while the rest of the water went via the drain to the #1 Waste Holdup Tank (WHT). The area was remediated within 24 hours bringing the soil samples to within acceptable levels based on historical analysis. The contaminated dirt was placed in drums. An assessment was made based on the sites hydrology and spill location to monitor the wells most likely to capture any contaminants which made it to ground water. All well samples have been within the limits of the Offsite Dose Calculation Manual, Table 5.1-2, Reporting Levels for Radioactivity Concentrations in Environmental Samples. Monitoring continues on a monthly basis. Dose to the public was calculated as a gaseous release of all constituents for conservatism.

6.2 Gaseous

There were no unplanned gaseous releases this period.

7.0 REACTOR COOLANT ACTIVITY

7.1 Unit 3

Reactor coolant activity limits of 0.25 $\mu\text{Ci}/\text{gram}$ Dose Equivalent I-131 and 447.7 $\mu\text{Ci}/\text{gram}$ Dose Equivalent Xe-133 were not exceeded during this reporting period.

7.2 Unit 4

Reactor coolant activity limits of 0.25 $\mu\text{Ci}/\text{gram}$ Dose Equivalent I-131 and 447.7 $\mu\text{Ci}/\text{gram}$ Dose Equivalent Xe-133 were not exceeded during this reporting period.

8.0 SITE RADIATION DOSE

The assessment of radiation dose from radioactive effluents to the general public due to their activities inside the site boundary assumes a visitor was at the child development center/fitness center for ten hours a day, five days each week for fifty weeks of the year, receiving exposure from both Unit 3 and Unit 4 at Turkey Point. The child development center/fitness center is located approximately 1.75 miles WNW of the plant. Specific activities used in these calculations are the sum of the activities listed in the attached Unit 3 and Unit 4 Reg. Guide 1.21 tables. All dose to the public where a fraction of the limits and dose were maintained as low as reasonably achievable. The total calculated off site dose to the public is summarized in the following table A-5 per EPA 40 CFR 190 "Individual in the Unrestricted Area":

Reg. Guide 1.21 Table A-5

	Total Dose (mrem)	Visitor Dose (mrem)	Limit (mrem)	Total Dose Percent of Limit (%)	Visitor Dose Percent of Limit (%)
Bone (mrem)	2.03 E -02	1.72 E-02	25	8.11 E -02	6.89 E-02
Liver (mrem)	2.03 E -02	1.72 E-02	25	8.11 E -02	6.89 E-02
Thyroid (mrem)	2.03 E -02	1.72 E-02	75	2.70 E -02	2.30 E-02
Kidney (mrem)	3.23 E -03	2.75 E-03	25	1.29 E -02	1.10 E-02
Lung (mrem)	2.03 E -02	1.72 E-02	25	8.11 E -02	6.89 E-02
GI-LLI (mrem)	2.03 E -02	1.72 E-02	25	8.11 E -02	6.89 E-02
Skin (mrem)	2.03 E -02	1.72 E-02	25	8.11 E -02	6.89 E-02
Total Body (mrem)	2.03 E -02	1.72 E-02	25	8.11 E -02	6.89 E-02
Gamma Air Dose	2.37 E -06	4.00 E-07	10	2.37 E -05	4.004 E-06
Beta Air Dose	5.19 E -06	8.77 E-07	20	2.60 E-05	4.386 E-06
Noble Gas Total	2.09 E -06	3.54 E-07	500	4.19 E-07	7.074 E-08
Noble Gas Skin Air	4.80 E -06	8.11 E-07	3000	1.60 E-07	2.704 E-08

9.0 OFFSITE DOSE CALCULATION MANUAL (ODCM) REVISIONS

The ODCM was reviewed and revised in 2013. A copy is attached as Attachment B.

10.0 SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

No irradiated fuel shipments or irradiated component shipments were made from the site. Common solid waste from Turkey Point Units 3 and 4 was shipped jointly. A summation of these shipments is given in Attachment A of this report (Reg. Guide 1.21 Table A-3).

11.0 PROCESS CONTROL PROGRAM REVISIONS

There were no revisions to the Process Control Program during this reporting period.

12.0 INOPERABLE EFFLUENT MONITORING INSTRUMENTATION

There was no inoperable effluent monitoring instrumentation requiring report during this period.

13.0 NEI's INDUSTRY INITIATIVE ON GROUND WATER SAMPLING

In 2013 as part of the Industry Initiative on Groundwater Sampling, wells on site and adjacent to the site were sampled for tritium. The tritium results were from <MDA to 11,200 pico curies per liter. Selected wells which met the criteria stipulated in the ODCM were analyzed for hard to detect beta emitters (Fe-59, Ni-63, Sr-89/90, and alpha). All results were less than the limits of the Offsite Dose Calculation Manual, Table 5.1-2, Reporting Levels for Radioactivity Concentrations in Environmental Samples. The results are reported in the Annual Radiological Environmental Operating Report. The five-year review of the Groundwater Sampling Program was conducted in July 2013 indicating the program meets all NEI 07-07 requirements. The Site Conceptual Model was updated in June 2013 meeting the five-year requirement. Two new shallow wells were recommended by the Unit 3 and 4 Steam Generator Blowdown. The Engineering Change Request has been processed for planning and execution.

14.0 ANNUAL LAND-USE CENSUS CHANGES

In 2013 the land census conducted revealed no changes within 5 miles of the plant. The land census is filed in the Annual Radiological Environmental Operating Report.

Unit 3 Reg. Guide 1.21 Tables:

- 1. Table A-1: Gaseous Effluents – Summation of all Releases**
- 2. Table A-1A: Gaseous Effluents – Ground Level Release – Batch Mode**
- 3. Table A-1B: Gaseous Effluents – Ground Level Release – Continuous Mode**
- 4. Table A-1C: Gaseous Effluents – Elevated Release – Batch Mode**
- 5. Table A-1D: Gaseous Effluents – Elevated Release – Continuous Mode**
- 6. Table A-1E: Gaseous Effluents – Mixed Mode Release – Batch Mode**
- 7. Table A-1F: Gaseous Effluents – Mixed Mode Release – Continuous Mode**
- 8. Table A-2: Liquid Effluents – Summation of all Releases**
- 9. Table A-2A: Liquid Effluents – Batch Mode**
- 10. Table A-2B: Liquid Effluents – Continuous Mode**
- 11. Table A-4: Dose Assessments 10 CFR Part 50, Appendix I: Dose to a member of the public due to Liquid Release**
- 12. Table A-4: Dose Assessments 10 CFR Part 50, Appendix I: Air Dose Due to Gaseous Releases**
- 13. Table A-4: Dose Assessments 10 CFR Part 50, Appendix I: Dose due to Radioiodines, Tritium, and Particulates in Gaseous Releases**
- 14. Liquid and Gas Batch Release Summary**
- 15. Table 6: Liquid and Gas Abnormal Release Summary**

Table A-1: Gaseous Effluents – Summation of all Releases

Unit: 3

Starting: 1-Jan-2013 Ending: 31-Dec-2013

Total Release	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Annual
A. Fission and Activation Gases						
1. Total Release	Ci	1.36E-01	7.04E-04	9.23E-04	4.24E-03	1.41E-01
2. Average Release Rate for Period	uCi/s	1.74E-02	8.95E-05	1.16E-04	5.34E-04	4.49E-03
3. Percent of Limit	%	N/A	N/A	N/A	N/A	N/A
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	%	N/A	N/A	N/A	N/A	N/A
C. Particulates						
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	%	N/A	N/A	N/A	N/A	N/A
D. Tritium						
1. Total Release	Ci	1.12E+00	1.51E+00	4.22E-01	1.16E-01	3.16E+00
2. Average Release Rate for Period	uCi/s	1.44E-01	1.92E-01	5.30E-02	1.46E-02	1.00E-01
3. Percent of Limit	%	N/A	N/A	N/A	N/A	N/A
E. Gross Alpha						
1. Total Release	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
F. Carbon-14						
1. Total Release	Ci	1.93E+00	1.93E+00	1.93E+00	1.93E+00	7.73E+00
2. Average Release Rate for Period	uCi/s	2.48E-01	2.46E-01	2.43E-01	2.43E-01	2.45E-01
3. Percent of Limit	%	N/A	N/A	N/A	N/A	N/A

TURKEY POINT UNITS 3 AND 4
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
JANUARY 2013 THROUGH DECEMBER 2013

Table A-1A: Gaseous Effluents – Ground Level Release – Batch Mode

Unit: 3

Starting: 1-Jan-2013 Ending: 31-Dec-2013

Nuclides Released	Units	Batch Mode				
		1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Annual
A. Fission and Activation Gases						
No Nuclides Found	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+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						
No Nuclides Found	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
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

Table A-1B: Gaseous Effluents – Ground Level Release – Continuous Mode

Unit: 3

Starting: 1-Jan-2013 Ending: 31-Dec-2013

Nuclides Released	Units	Continuous Mode				
		1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Annual
A. Fission and Activation Gases						
No Nuclides Found	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+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						
No Nuclides Found	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
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

Table A-1C: Gaseous Effluents – Elevated Release – Batch Mode

Unit: 3

Starting: 1-Jan-2013 Ending: 31-Dec-2013

Nuclides Released	Units	Batch Mode				Annual
		1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	
A. Fission and Activation Gases						
No Nuclides Found	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+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						
No Nuclides Found	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
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

Table A-1D: Gaseous Effluents – Elevated Release – Continuous Mode

Unit: 3

Starting: 1-Jan-2013 Ending: 31-Dec-2013

Nuclides Released	Units	Continuous Mode				
		1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Annual
A. Fission and Activation Gases						
No Nuclides Found	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+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						
No Nuclides Found	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
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

TURKEY POINT UNITS 3 AND 4
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
JANUARY 2013 THROUGH DECEMBER 2013

Table A-1E: Gaseous Effluents – Mixed Mode Release – Batch Mode

Unit: 3

Starting: 1-Jan-2013 Ending: 31-Dec-2013

Nuclides Released	Units	Batch Mode				
		1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Annual
A. Fission and Activation Gases						
Ar-41	Ci	1.29E-04	0.00E+00	0.00E+00	1.33E-05	1.42E-04
Kr-85m	Ci	1.11E-04	0.00E+00	0.00E+00	7.32E-06	1.19E-04
Kr-87	Ci	5.59E-07	0.00E+00	0.00E+00	2.67E-07	8.26E-07
Kr-88	Ci	2.95E-05	0.00E+00	0.00E+00	6.21E-06	3.57E-05
Xe-131m	Ci	0.00E+00	0.00E+00	2.94E-05	0.00E+00	2.94E-05
Xe-133m	Ci	1.01E-03	0.00E+00	0.00E+00	1.97E-05	1.03E-03
Xe-133	Ci	1.21E-01	7.02E-04	8.93E-04	3.88E-03	1.27E-01
Xe-135	Ci	1.31E-02	1.46E-06	1.32E-16	3.16E-04	1.34E-02
Total For Period	Ci	1.36E-01	7.04E-04	9.23E-04	4.24E-03	1.41E-01
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						
No Nuclides Found	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
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

TURKEY POINT UNITS 3 AND 4
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
JANUARY 2013 THROUGH DECEMBER 2013

Table A-1F: Gaseous Effluents – Mixed Mode Release – Continuous Mode

Unit: 3

Starting: 1-Jan-2013 Ending: 31-Dec-2013

Nuclides Released	Units	Continuous Mode				
		1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Annual
A. Fission and Activation Gases						
No Nuclides Found	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+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	1.12E+00	1.51E+00	4.22E-01	1.16E-01	3.16E+00
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						
C-14	Ci	1.93E+00	1.93E+00	1.93E+00	1.93E+00	7.73E+00

Table A-2: Liquid Effluents – Summation of all Releases

Unit: 3

Starting: 1-Jan-2013 Ending: 31-Dec-2013

<u>Total Release</u>	<u>Units</u>	<u>1ST Quarter</u>	<u>2ND Quarter</u>	<u>3RD Quarter</u>	<u>4TH Quarter</u>	<u>Annual</u>
A. Fission and Activation Products						
1. Total Release	Ci	8.99E-03	1.10E-02	3.58E-03	1.12E-02	3.48E-02
2. Average Concentration	uCi/mL	4.98E-11	3.31E-11	9.33E-12	3.81E-11	3.21E-11
3. Percent of Limit	%	7.11E-07	4.73E-05	1.33E-05	5.44E-05	4.58E-05
B. Tritium						
1. Total Release	Ci	8.42E+01	7.70E+01	1.37E+01	3.50E+01	2.10E+02
2. Average Concentration	uCi/mL	4.66E-07	2.31E-07	3.59E-08	1.19E-07	1.94E-07
3. Percent of Limit	%	4.66E-03	2.31E-03	3.59E-04	1.19E-03	1.94E-03
C. Dissolved and Entrained Gases						
1. Total Release	Ci	4.68E-04	0.00E+00	0.00E+00	0.00E+00	4.68E-04
2. Average Concentration	uCi/mL	2.59E-12	0.00E+00	0.00E+00	0.00E+00	4.31E-13
3. Percent of Limit	%	1.30E-06	0.00E+00	0.00E+00	0.00E+00	2.16E-07
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	6.09E+05	4.45E+05	2.19E+05	1.59E+05	1.43E+06
F. Dilution Volume						
1. Total Release	Liters	1.80E+11	3.33E+11	3.83E+11	2.95E+11	1.08E+12

TURKEY POINT UNITS 3 AND 4
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
JANUARY 2013 THROUGH DECEMBER 2013

Table A-2A: Liquid Effluents – Batch Mode

Unit: 3

Starting: 1-Jan-2013 Ending: 31-Dec-2013

Nuclides Released	Units	Batch Mode				
		1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Annual
A. Fission and Activation Products						
Na-24	Ci	0.00E+00	2.10E-05	0.00E+00	0.00E+00	2.10E-05
Cr-51	Ci	2.33E-04	0.00E+00	0.00E+00	0.00E+00	2.33E-04
Mn-54	Ci	0.00E+00	6.56E-05	7.96E-06	1.58E-04	2.32E-04
Fe-55	Ci	1.76E-03	7.96E-04	2.41E-04	5.51E-04	3.35E-03
Fe-59	Ci	6.27E-06	0.00E+00	0.00E+00	0.00E+00	6.27E-06
Co-57	Ci	0.00E+00	2.08E-06	1.76E-06	1.84E-05	2.23E-05
Co-58	Ci	1.31E-03	5.17E-03	7.26E-04	1.18E-03	8.39E-03
Co-60	Ci	5.78E-05	2.57E-04	9.57E-05	3.53E-04	7.63E-04
Ni-63	Ci	1.95E-03	1.76E-03	1.46E-03	6.15E-03	1.13E-02
Zn-65	Ci	0.00E+00	0.00E+00	0.00E+00	4.12E-06	4.12E-06
Br-82	Ci	0.00E+00	1.62E-06	0.00E+00	0.00E+00	1.62E-06
Nb-95	Ci	4.06E-06	3.07E-06	0.00E+00	0.00E+00	7.13E-06
Nb-97	Ci	0.00E+00	0.00E+00	0.00E+00	1.82E-06	1.82E-06
Ag-110m	Ci	2.52E-05	0.00E+00	0.00E+00	0.00E+00	2.52E-05
Sn-117m	Ci	2.29E-06	5.03E-07	0.00E+00	0.00E+00	2.79E-06
Sb-122	Ci	0.00E+00	1.35E-06	0.00E+00	0.00E+00	1.35E-06
Sb-124	Ci	3.16E-04	1.86E-05	0.00E+00	0.00E+00	3.35E-04
Sb-125	Ci	3.12E-03	1.19E-03	4.50E-04	3.43E-04	5.10E-03
I-131	Ci	1.70E-06	1.12E-05	0.00E+00	5.60E-06	1.85E-05
I-133	Ci	3.86E-06	4.46E-06	0.00E+00	3.04E-06	1.14E-05
I-134	Ci	1.51E-06	0.00E+00	0.00E+00	0.00E+00	1.51E-06
Cs-134	Ci	4.39E-06	1.64E-04	4.71E-05	1.95E-04	4.10E-04
Cs-137	Ci	1.90E-04	1.54E-03	5.45E-04	2.26E-03	4.54E-03
Total For Period	Ci	8.99E-03	1.10E-02	3.58E-03	1.12E-02	3.48E-02

TURKEY POINT UNITS 3 AND 4
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
JANUARY 2013 THROUGH DECEMBER 2013

Table A-2A: Liquid Effluents – Batch Mode

Unit: 3

Starting: 1-Jan-2013 Ending: 31-Dec-2013

Nuclides Released	Units	Batch Mode				
		1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Annual
B. Tritium						
H-3	Ci	8.42E+01	7.70E+01	1.37E+01	3.50E+01	2.10E+02
C. Dissolved and Entrained Gases						
Kr-85	Ci	4.66E-04	0.00E+00	0.00E+00	0.00E+00	4.66E-04
Xe-133	Ci	1.50E-06	0.00E+00	0.00E+00	0.00E+00	1.50E-06
Total For Period	Ci	4.68E-04	0.00E+00	0.00E+00	0.00E+00	4.68E-04
D. Gross Alpha Activity						
No Nuclides Found	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Table A-2B: Liquid Effluents – Continuous Mode

Unit: 3

Starting: 1-Jan-2013 Ending: 31-Dec-2013

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

TURKEY POINT UNITS 3 AND 4
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
JANUARY 2013 THROUGH DECEMBER 2013

Table A-4: Dose Assessments 10 CFR Part 50, Appendix I: Dose to a member of the public due to Liquid Release

Unit: 3

Starting: 1-Jan-2013 Ending: 31-Dec-2013

Ogan Dose	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Annual
Bone	mRem	2.16E-05	5.30E-05	1.81E-05	6.56E-05	1.58E-04
Limit	mRem	5.000	5.000	5.000	5.000	10.000
Percent of Limit	%	0.000	0.001	0.000	0.001	0.002
Liver	mRem	2.16E-05	5.30E-05	1.81E-05	6.56E-05	1.58E-04
Limit	mRem	5.000	5.000	5.000	5.000	10.000
Percent of Limit	%	0.000	0.001	0.000	0.001	0.002
Total Body	mRem	2.16E-05	5.30E-05	1.81E-05	6.56E-05	1.58E-04
Limit	mRem	1.500	1.500	1.500	1.500	3.000
Percent of Limit	%	0.001	0.004	0.001	0.004	0.005
Thyroid	mRem	2.16E-05	5.30E-05	1.81E-05	6.56E-05	1.58E-04
Limit	mRem	5.000	5.000	5.000	5.000	10.000
Percent of Limit	%	0.000	0.001	0.000	0.001	0.002
Kidney	mRem	2.16E-05	5.30E-05	1.81E-05	6.56E-05	1.58E-04
Limit	mRem	5.000	5.000	5.000	5.000	10.000
Percent of Limit	%	0.000	0.001	0.000	0.001	0.002
Lung	mRem	2.16E-05	5.30E-05	1.81E-05	6.56E-05	1.58E-04
Limit	mRem	5.000	5.000	5.000	5.000	10.000
Percent of Limit	%	0.000	0.001	0.000	0.001	0.002
GI-Li	mRem	2.16E-05	5.30E-05	1.81E-05	6.56E-05	1.58E-04
Limit	mRem	5.000	5.000	5.000	5.000	10.000
Percent of Limit	%	0.000	0.001	0.000	0.001	0.002

TURKEY POINT UNITS 3 AND 4
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
JANUARY 2013 THROUGH DECEMBER 2013

Table A-4: Dose Assessments 10 CFR Part 50, Appendix I: Dose to a member of the public due to Liquid Release

Unit: 3

Starting: 1-Jan-2013 Ending: 31-Dec-2013

Ogan Dose	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Annual
Skin	mRem	2.47E-05	6.17E-05	2.11E-05	7.66E-05	1.84E-04
Limit	mRem	5.000	5.000	5.000	5.000	10.000
Percent of Limit	%	0.000	0.001	0.000	0.002	0.002

TURKEY POINT UNITS 3 AND 4
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
JANUARY 2013 THROUGH DECEMBER 2013

Table A-4: Dose Assessments 10 CFR Part 50, Appendix I: Air Dose Due to Gaseous Releases

Unit: 3

Starting: 1-Jan-2013 Ending: 31-Dec-2013

NG Dose	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Annual
Gamma Air	mRad	1.39E-06	5.01E-09	6.39E-09	4.25E-08	1.44E-06
Limit	mRad	5	5	5	5	10
Percent of Limit	%	2.78E-05	1.00E-07	1.28E-07	8.50E-07	1.44E-05
Beta Air	mRad	3.23E-06	1.48E-08	1.94E-08	9.91E-08	3.36E-06
Limit	mRad	10	10	10	10	20
Percent of Limit	%	3.23E-05	1.48E-07	1.94E-07	9.91E-07	1.68E-05
NG Total Body	mRem	1.22E-06	4.18E-09	5.30E-09	3.71E-08	1.26E-06
Limit	mRem	N/A	N/A	N/A	N/A	500
Percent of Limit	%	N/A	N/A	N/A	N/A	2.52E-07
NG Skin	mRem	2.80E-06	9.90E-09	1.28E-08	8.43E-08	2.91E-06
Limit	mRem	N/A	N/A	N/A	N/A	3000
Percent of Limit	%	N/A	N/A	N/A	N/A	9.70E-08

TURKEY POINT UNITS 3 AND 4
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
JANUARY 2013 THROUGH DECEMBER 2013

**Table A-4: Dose Assessments 10 CFR Part 50, Appendix I: Dose due to Radioiodines,
Tritium, and Particulates in Gaseous
Releases**

Unit: 3

Starting: 1-Jan-2013 Ending: 31-Dec-2013

Organ Dose	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Annual
Bone	mRem	4.97E-03	4.98E-03	4.98E-03	4.98E-03	1.99E-02
Limit	mRem	7.500	7.500	7.500	7.500	15.000
Percent of Limit	%	0.066	0.066	0.066	0.066	0.133
Liver	mRem	4.99E-03	4.99E-03	4.98E-03	4.98E-03	1.99E-02
Limit	mRem	7.500	7.500	7.500	7.500	15.000
Percent of Limit	%	0.066	0.067	0.066	0.066	0.133
Total Body	mRem	4.99E-03	4.99E-03	4.98E-03	4.98E-03	1.99E-02
Limit	mRem	N/A	N/A	N/A	N/A	N/A
Percent of Limit	%	N/A	N/A	N/A	N/A	N/A
Thyroid	mRem	4.99E-03	4.99E-03	4.98E-03	4.98E-03	1.99E-02
Limit	mRem	7.500	7.500	7.500	7.500	15.000
Percent of Limit	%	0.066	0.067	0.066	0.066	0.133
Kidney	mRem	7.19E-04	7.21E-04	7.15E-04	7.14E-04	2.87E-03
Limit	mRem	7.500	7.500	7.500	7.500	15.000
Percent of Limit	%	0.010	0.010	0.010	0.010	0.019
Lung	mRem	4.99E-03	4.99E-03	4.98E-03	4.98E-03	1.99E-02
Limit	mRem	7.500	7.500	7.500	7.500	15.000
Percent of Limit	%	0.066	0.067	0.066	0.066	0.133
GI-Li	mRem	4.99E-03	4.99E-03	4.98E-03	4.98E-03	1.99E-02
Limit	mRem	7.500	7.500	7.500	7.500	15.000
Percent of Limit	%	0.066	0.067	0.066	0.066	0.133

Liquid and Gas Batch Release Summary

Unit: 3

Starting: 1-Jan-2013 Ending: 31-Dec-2013

A. Liquid Batch Release Totals	Units	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Year Totals
1. Number of Batch Releases		45	34	17	12	108
2. Total duration of batch releases	min	4.75E+03	3.37E+03	1.67E+03	1.16E+03	1.10E+04
3. Maximum batch release duration	min	1.34E+02	1.20E+02	1.23E+02	1.05E+02	1.34E+02
4. Average batch release duration	min	1.06E+02	9.92E+01	9.85E+01	9.65E+01	1.01E+02
5. Minimum batch release duration	min	9.00E+01	8.60E+01	7.00E+01	7.00E+01	7.00E+01
B. Gas Batch Release Totals	Units	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Year Totals
1. Number of Batch Releases		18	4	2	3	27
2. Total duration of batch releases	min	1.37E+04	1.62E+02	6.90E+01	1.26E+02	1.40E+04
3. Maximum batch release duration	min	1.30E+04	4.50E+01	3.50E+01	4.90E+01	1.30E+04
4. Average batch release duration	min	7.60E+02	4.05E+01	3.45E+01	4.20E+01	5.20E+02
5. Minimum batch release duration	min	3.00E+01	3.80E+01	3.40E+01	3.10E+01	3.00E+01

Table 6: Liquid and Gas Abnormal Release Summary

Unit: 3

Starting: 1-Jan-2013 Ending: 31-Dec-2013

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	Ci	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	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Unit 4 Reg. Guide 1.21 Tables:

- 1. Table A-1: Gaseous Effluents – Summation of all Releases**
- 2. Table A-1A: Gaseous Effluents – Ground Level Release – Batch Mode**
- 3. Table A-1B: Gaseous Effluents – Ground Level Release – Continuous Mode**
- 4. Table A-1C: Gaseous Effluents – Elevated Release – Batch Mode**
- 5. Table A-1D: Gaseous Effluents – Elevated Release – Continuous Mode**
- 6. Table A-1E: Gaseous Effluents – Mixed Mode Release – Batch Mode**
- 7. Table A-1F: Gaseous Effluents – Mixed Mode Release – Continuous Mode**
- 8. Table A-2: Liquid Effluents – Summation of all Releases**
- 9. Table A-2A: Liquid Effluents – Batch Mode**
- 10. Table A-2B: Liquid Effluents – Continuous Mode**
- 11. Table A-4: Dose Assessments 10 CFR Part 50, Appendix I: Dose to a member of the public due to Liquid Release**
- 12. Table A-4: Dose Assessments 10 CFR Part 50, Appendix I: Air Dose Due to Gaseous Releases**
- 13. Table A-4: Dose Assessments 10 CFR Part 50, Appendix I: Dose due to Radioiodines, Tritium, and Particulates in Gaseous Releases**
- 14. Liquid and Gas Batch Release Summary**
- 15. Table 6: Liquid and Gas Abnormal Release Summary**

Table A-1: Gaseous Effluents – Summation of all Releases

Unit: 4

Starting: 1-Jan-2013 Ending: 31-Dec-2013

Total Release	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Annual
A. Fission and Activation Gases						
1. Total Release	Ci	6.25E-02	7.04E-04	9.23E-04	4.24E-03	6.84E-02
2. Average Release Rate for Period	uCi/s	8.04E-03	8.95E-05	1.16E-04	5.34E-04	2.17E-03
3. Percent of Limit	%	N/A	N/A	N/A	N/A	N/A
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	%	N/A	N/A	N/A	N/A	N/A
C. Particulates						
1. Total Release	Ci	8.42E-05	0.00E+00	0.00E+00	2.58E-04	3.43E-04
2. Average Release Rate for Period	uCi/s	1.08E-05	0.00E+00	0.00E+00	3.25E-05	1.09E-05
3. Percent of Limit	%	N/A	N/A	N/A	N/A	N/A
D. Tritium						
1. Total Release	Ci	1.21E+00	1.09E+00	4.22E-01	3.15E-03	2.73E+00
2. Average Release Rate for Period	uCi/s	1.56E-01	1.39E-01	5.30E-02	3.96E-04	8.65E-02
3. Percent of Limit	%	N/A	N/A	N/A	N/A	N/A
E. Gross Alpha						
1. Total Release	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
F. Carbon-14						
1. Total Release	Ci	1.45E+00	1.45E+00	1.45E+00	1.45E+00	5.78E+00
2. Average Release Rate for Period	uCi/s	1.86E-01	1.84E-01	1.82E-01	1.82E-01	1.83E-01
3. Percent of Limit	%					

TURKEY POINT UNITS 3 AND 4
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
JANUARY 2013 THROUGH DECEMBER 2013

Table A-1A: Gaseous Effluents – Ground Level Release – Batch Mode

Unit: 4

Starting: 1-Jan-2013 Ending: 31-Dec-2013

Nuclides Released	Units	Batch Mode				
		1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Annual
A. Fission and Activation Gases						
No Nuclides Found	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+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						
Mn-54	Ci	0.00E+00	0.00E+00	0.00E+00	1.59E-06	1.59E-06
Co-58	Ci	3.37E-07	0.00E+00	0.00E+00	1.06E-05	1.09E-05
Co-60	Ci	3.53E-07	0.00E+00	0.00E+00	2.34E-05	2.38E-05
Zn-65	Ci	8.36E-05	0.00E+00	0.00E+00	0.00E+00	8.36E-05
Sb-122	Ci	0.00E+00	0.00E+00	0.00E+00	5.51E-07	5.51E-07
Sb-125	Ci	0.00E+00	0.00E+00	0.00E+00	1.09E-05	1.09E-05
Cs-134	Ci	0.00E+00	0.00E+00	0.00E+00	5.82E-06	5.82E-06
Cs-137	Ci	0.00E+00	0.00E+00	0.00E+00	2.05E-04	2.05E-04
Total For Period	Ci	8.42E-05	0.00E+00	0.00E+00	2.58E-04	3.43E-04
D. Tritium						
H-3	Ci	2.87E-01	0.00E+00	0.00E+00	3.15E-03	2.91E-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

Table A-1B: Gaseous Effluents – Ground Level Release – Continuous Mode

Unit: 4

Starting: 1-Jan-2013 Ending: 31-Dec-2013

Nuclides Released	Units	Continuous Mode				
		1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Annual
A. Fission and Activation Gases						
No Nuclides Found	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+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						
No Nuclides Found	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
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

Table A-1C: Gaseous Effluents – Elevated Release – Batch Mode

Unit: 4

Starting: 1-Jan-2013 Ending: 31-Dec-2013

Nuclides Released	Units	Batch Mode				
		1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Annual
A. Fission and Activation Gases						
No Nuclides Found	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+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						
No Nuclides Found	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
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

Table A-1D: Gaseous Effluents – Elevated Release – Continuous Mode

Unit: 4

Starting: 1-Jan-2013 Ending: 31-Dec-2013

Nuclides Released	Units	Continuous Mode				
		1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Annual
A. Fission and Activation Gases						
No Nuclides Found	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+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						
No Nuclides Found	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
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

TURKEY POINT UNITS 3 AND 4
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
JANUARY 2013 THROUGH DECEMBER 2013

Table A-1E: Gaseous Effluents – Mixed Mode Release – Batch Mode

Unit: 4

Starting: 1-Jan-2013 Ending: 31-Dec-2013

Nuclides Released	Units	Batch Mode				
		1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Annual
A. Fission and Activation Gases						
Ar-41	Ci	1.29E-04	0.00E+00	0.00E+00	1.33E-05	1.42E-04
Kr-85m	Ci	1.11E-04	0.00E+00	0.00E+00	7.32E-06	1.19E-04
Kr-87	Ci	5.59E-07	0.00E+00	0.00E+00	2.67E-07	8.26E-07
Kr-88	Ci	2.95E-05	0.00E+00	0.00E+00	6.21E-06	3.57E-05
Xe-131m	Ci	0.00E+00	0.00E+00	2.94E-05	0.00E+00	2.94E-05
Xe-133m	Ci	1.01E-03	0.00E+00	0.00E+00	1.97E-05	1.03E-03
Xe-133	Ci	4.81E-02	7.02E-04	8.93E-04	3.88E-03	5.36E-02
Xe-135	Ci	1.31E-02	1.46E-06	1.32E-16	3.16E-04	1.34E-02
Total For Period	Ci	6.25E-02	7.04E-04	9.23E-04	4.24E-03	6.84E-02
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	1.55E-03	0.00E+00	0.00E+00	0.00E+00	1.55E-03
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

Table A-1F: Gaseous Effluents – Mixed Mode Release – Continuous Mode

Unit: 4

Starting: 1-Jan-2013 Ending: 31-Dec-2013

Nuclides Released	Units	Continuous Mode				
		1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Annual
A. Fission and Activation Gases						
No Nuclides Found	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+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	9.22E-01	1.09E+00	4.22E-01	0.00E+00	2.44E+00
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						
C-14	Ci	1.45E+00	1.45E+00	1.45E+00	1.45E+00	5.78E+00

Table A-2: Liquid Effluents – Summation of all Releases

Unit: 4

Starting: 1-Jan-2013 Ending: 31-Dec-2013

Total Release	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Annual
A. Fission and Activation Products						
1. Total Release	Ci	8.99E-03	1.10E-02	3.58E-03	1.12E-02	3.48E-02
2. Average Concentration	uCi/mL	4.98E-11	3.31E-11	9.33E-12	3.81E-11	3.21E-11
3. Percent of Limit	%	7.11E-07	4.73E-05	1.33E-05	5.44E-05	4.58E-05
B. Tritium						
1. Total Release	Ci	8.42E+01	7.70E+01	1.37E+01	3.50E+01	2.10E+02
2. Average Concentration	uCi/mL	4.66E-07	2.31E-07	3.59E-08	1.19E-07	1.94E-07
3. Percent of Limit	%	4.66E-03	2.31E-03	3.59E-04	1.19E-03	1.94E-03
C. Dissolved and Entrained Gases						
1. Total Release	Ci	4.68E-04	0.00E+00	0.00E+00	0.00E+00	4.68E-04
2. Average Concentration	uCi/mL	2.59E-12	0.00E+00	0.00E+00	0.00E+00	4.31E-13
3. Percent of Limit	%	1.30E-06	0.00E+00	0.00E+00	0.00E+00	2.16E-07
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	6.09E+05	4.45E+05	2.19E+05	1.59E+05	1.43E+06
F. Dilution Volume						
1. Total Release	Liters	1.80E+11	3.33E+11	3.83E+11	2.95E+11	1.08E+12

TURKEY POINT UNITS 3 AND 4
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
JANUARY 2013 THROUGH DECEMBER 2013

Table A-2A: Liquid Effluents – Batch Mode

Unit: 4

Starting: 1-Jan-2013 Ending: 31-Dec-2013

Nuclides Released	Units	Batch Mode				
		1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Annual
A. Fission and Activation Products						
Na-24	Ci	0.00E+00	2.10E-05	0.00E+00	0.00E+00	2.10E-05
Cr-51	Ci	2.33E-04	0.00E+00	0.00E+00	0.00E+00	2.33E-04
Mn-54	Ci	0.00E+00	6.56E-05	7.96E-06	1.58E-04	2.32E-04
Fe-55	Ci	1.76E-03	7.96E-04	2.41E-04	5.51E-04	3.35E-03
Fe-59	Ci	6.27E-06	0.00E+00	0.00E+00	0.00E+00	6.27E-06
Co-57	Ci	0.00E+00	2.08E-06	1.76E-06	1.84E-05	2.23E-05
Co-58	Ci	1.31E-03	5.17E-03	7.26E-04	1.18E-03	8.39E-03
Co-60	Ci	5.78E-05	2.57E-04	9.57E-05	3.53E-04	7.63E-04
Ni-63	Ci	1.95E-03	1.76E-03	1.46E-03	6.15E-03	1.13E-02
Zn-65	Ci	0.00E+00	0.00E+00	0.00E+00	4.12E-06	4.12E-06
Br-82	Ci	0.00E+00	1.62E-06	0.00E+00	0.00E+00	1.62E-06
Nb-95	Ci	4.06E-06	3.07E-06	0.00E+00	0.00E+00	7.13E-06
Nb-97	Ci	0.00E+00	0.00E+00	0.00E+00	1.82E-06	1.82E-06
Ag-110m	Ci	2.52E-05	0.00E+00	0.00E+00	0.00E+00	2.52E-05
Sn-117m	Ci	2.29E-06	5.03E-07	0.00E+00	0.00E+00	2.79E-06
Sb-122	Ci	0.00E+00	1.35E-06	0.00E+00	0.00E+00	1.35E-06
Sb-124	Ci	3.16E-04	1.86E-05	0.00E+00	0.00E+00	3.35E-04
Sb-125	Ci	3.12E-03	1.19E-03	4.50E-04	3.43E-04	5.10E-03
I-131	Ci	1.70E-06	1.12E-05	0.00E+00	5.60E-06	1.85E-05
I-133	Ci	3.86E-06	4.46E-06	0.00E+00	3.04E-06	1.14E-05
I-134	Ci	1.51E-06	0.00E+00	0.00E+00	0.00E+00	1.51E-06
Cs-134	Ci	4.39E-06	1.64E-04	4.71E-05	1.95E-04	4.10E-04
Cs-137	Ci	1.90E-04	1.54E-03	5.45E-04	2.26E-03	4.54E-03
Total For Period	Ci	8.99E-03	1.10E-02	3.58E-03	1.12E-02	3.48E-02

TURKEY POINT UNITS 3 AND 4
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
JANUARY 2013 THROUGH DECEMBER 2013

Table A-2A: Liquid Effluents – Batch Mode

Unit: 4

Starting: 1-Jan-2013 Ending: 31-Dec-2013

Nuclides Released	Units	Batch Mode				
		1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Annual
B. Tritium						
H-3	Ci	8.42E+01	7.70E+01	1.37E+01	3.50E+01	2.10E+02
C. Dissolved and Entrained Gases						
Kr-85	Ci	4.66E-04	0.00E+00	0.00E+00	0.00E+00	4.66E-04
Xe-133	Ci	1.50E-06	0.00E+00	0.00E+00	0.00E+00	1.50E-06
Total For Period	Ci	4.68E-04	0.00E+00	0.00E+00	0.00E+00	4.68E-04
D. Gross Alpha Activity						
No Nuclides Found	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Table A-2B: Liquid Effluents – Continuous Mode

Unit: 4

Starting: 1-Jan-2013 Ending: 31-Dec-2013

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

TURKEY POINT UNITS 3 AND 4
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
JANUARY 2013 THROUGH DECEMBER 2013

Table A-4: Dose Assessments 10 CFR Part 50, Appendix I: Dose to a member of the public due to Liquid Release

Unit: 4

Starting: 1-Jan-2013 Ending: 31-Dec-2013

Ogan Dose	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Annual
Bone	mRem	2.16E-05	5.30E-05	1.81E-05	6.56E-05	1.58E-04
Limit	mRem	5.000	5.000	5.000	5.000	10.000
Percent of Limit	%	0.000	0.001	0.000	0.001	0.002
Liver	mRem	2.16E-05	5.30E-05	1.81E-05	6.56E-05	1.58E-04
Limit	mRem	5.000	5.000	5.000	5.000	10.000
Percent of Limit	%	0.000	0.001	0.000	0.001	0.002
Total Body	mRem	2.16E-05	5.30E-05	1.81E-05	6.56E-05	1.58E-04
Limit	mRem	1.500	1.500	1.500	1.500	3.000
Percent of Limit	%	0.001	0.004	0.001	0.004	0.005
Thyroid	mRem	2.16E-05	5.30E-05	1.81E-05	6.56E-05	1.58E-04
Limit	mRem	5.000	5.000	5.000	5.000	10.000
Percent of Limit	%	0.000	0.001	0.000	0.001	0.002
Kidney	mRem	2.16E-05	5.30E-05	1.81E-05	6.56E-05	1.58E-04
Limit	mRem	5.000	5.000	5.000	5.000	10.000
Percent of Limit	%	0.000	0.001	0.000	0.001	0.002
Lung	mRem	2.16E-05	5.30E-05	1.81E-05	6.56E-05	1.58E-04
Limit	mRem	5.000	5.000	5.000	5.000	10.000
Percent of Limit	%	0.000	0.001	0.000	0.001	0.002
GI-Lli	mRem	2.16E-05	5.30E-05	1.81E-05	6.56E-05	1.58E-04
Limit	mRem	5.000	5.000	5.000	5.000	10.000
Percent of Limit	%	0.000	0.001	0.000	0.001	0.002

TURKEY POINT UNITS 3 AND 4
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
JANUARY 2013 THROUGH DECEMBER 2013

Table A-4: Dose Assessments 10 CFR Part 50, Appendix I: Dose to a member of the public due to Liquid Release

Unit: 4

Starting: 1-Jan-2013 Ending: 31-Dec-2013

Ogan Dose	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Annual
Skin	mRem	2.47E-05	6.17E-05	2.11E-05	7.66E-05	1.84E-04
Limit	mRem	5.000	5.000	5.000	5.000	10.000
Percent of Limit	%	0.000	0.001	0.000	0.002	0.002

TURKEY POINT UNITS 3 AND 4
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
JANUARY 2013 THROUGH DECEMBER 2013

Table A-4: Dose Assessments 10 CFR Part 50, Appendix I: Air Dose Due to Gaseous Releases

Unit: 4

Starting: 1-Jan-2013 Ending: 31-Dec-2013

NG Dose	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Annual
Gamma Air	mRad	8.75E-07	5.01E-09	6.39E-09	4.25E-08	9.29E-07
Limit	mRad	5	5	5	5	10
Percent of Limit	%	1.75E-05	1.00E-07	1.28E-07	8.50E-07	9.29E-06
Beta Air	mRad	1.70E-06	1.48E-08	1.94E-08	9.91E-08	1.83E-06
Limit	mRad	10	10	10	10	20
Percent of Limit	%	1.70E-05	1.48E-07	1.94E-07	9.91E-07	9.15E-06
NG Total Body	mRem	7.87E-07	4.18E-09	5.30E-09	3.71E-08	8.33E-07
Limit	mRem	N/A	N/A	N/A	N/A	500
Percent of Limit	%	N/A	N/A	N/A	N/A	1.67E-07
NG Skin	mRem	1.78E-06	9.90E-09	1.28E-08	8.43E-08	1.89E-06
Limit	mRem	N/A	N/A	N/A	N/A	3000
Percent of Limit	%	N/A	N/A	N/A	N/A	6.30E-08

TURKEY POINT UNITS 3 AND 4
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
JANUARY 2013 THROUGH DECEMBER 2013

Table A-4: Dose Assessments 10 CFR Part 50, Appendix I: Dose due to Radioiodines, Tritium, and Particulates in Gaseous Releases

Unit: 4

Starting: 1-Jan-2013 Ending: 31-Dec-2013

Organ Dose	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Annual
Liver	mRem	1.82E-05	2.15E-05	8.31E-06	0.00E+00	4.80E-05
Limit	mRem	7.500	7.500	7.500	7.500	15.000
Percent of Limit	%	0.000	0.000	0.000	0.000	0.000
Total Body	mRem	1.82E-05	2.15E-05	8.31E-06	0.00E+00	4.80E-05
Limit	mRem	N/A	N/A	N/A	N/A	N/A
Percent of Limit	%	N/A	N/A	N/A	N/A	N/A
Thyroid	mRem	1.82E-05	2.15E-05	8.31E-06	0.00E+00	4.80E-05
Limit	mRem	7.500	7.500	7.500	7.500	15.000
Percent of Limit	%	0.000	0.000	0.000	0.000	0.000
Kidney	mRem	1.82E-05	2.15E-05	8.31E-06	0.00E+00	4.80E-05
Limit	mRem	7.500	7.500	7.500	7.500	15.000
Percent of Limit	%	0.000	0.000	0.000	0.000	0.000
Lung	mRem	1.82E-05	2.15E-05	8.31E-06	0.00E+00	4.80E-05
Limit	mRem	7.500	7.500	7.500	7.500	15.000
Percent of Limit	%	0.000	0.000	0.000	0.000	0.000
GI-Li	mRem	1.82E-05	2.15E-05	8.31E-06	0.00E+00	4.80E-05
Limit	mRem	7.500	7.500	7.500	7.500	15.000
Percent of Limit	%	0.000	0.000	0.000	0.000	0.000

Liquid and Gas Batch Release Summary

Unit: 4

Starting: 1-Jan-2013 Ending: 31-Dec-2013

A. Liquid Batch Release Totals	Units	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Year Totals
1. Number of Batch Releases		45	34	17	12	108
2. Total duration of batch releases	min	4.75E+03	3.37E+03	1.67E+03	1.16E+03	1.10E+04
3. Maximum batch release duration	min	1.34E+02	1.20E+02	1.23E+02	1.05E+02	1.34E+02
4. Average batch release duration	min	1.06E+02	9.92E+01	9.85E+01	9.65E+01	1.01E+02
5. Minimum batch release duration	min	9.00E+01	8.60E+01	7.00E+01	7.00E+01	7.00E+01
B. Gas Batch Release Totals	Units	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Year Totals
1. Number of Batch Releases		29	4	2	4	39
2. Total duration of batch releases	min	6.74E+04	1.62E+02	6.90E+01	1.57E+03	6.92E+04
3. Maximum batch release duration	min	2.74E+04	4.50E+01	3.50E+01	1.44E+03	2.74E+04
4. Average batch release duration	min	2.32E+03	4.05E+01	3.45E+01	3.92E+02	1.77E+03
5. Minimum batch release duration	min	3.00E+01	3.80E+01	3.40E+01	3.10E+01	3.00E+01

Table 6: Liquid and Gas Abnormal Release Summary

Unit: 4

Starting: 1-Jan-2013 Ending: 31-Dec-2013

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	Ci	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	1	1
2. Total Activity of abnormal releases	Ci	0.00E+00	0.00E+00	0.00E+00	3.41E-03	3.41E-03

Site Dose Reg. Guide 1.21 Tables:

- 1. Table A-1: Gaseous Effluents – Summation of all Releases**
- 2. Table A-1A: Gaseous Effluents – Ground Level Release – Batch Mode**
- 3. Table A-1B: Gaseous Effluents – Ground Level Release – Continuous Mode**
- 4. Table A-1C: Gaseous Effluents – Elevated Release – Batch Mode**
- 5. Table A-1D: Gaseous Effluents – Elevated Release – Continuous Mode**
- 6. Table A-1E: Gaseous Effluents – Mixed Mode Release – Batch Mode**
- 7. Table A-1F: Gaseous Effluents – Mixed Mode Release – Continuous Mode**
- 8. Table A-2: Liquid Effluents – Summation of all Releases**
- 9. Table A-2A: Liquid Effluents – Batch Mode**
- 10. Table A-2B: Liquid Effluents – Continuous Mode**
- 11. Table A-4: Dose Assessments 10 CFR Part 50, Appendix I: Dose to a member of the public due to Liquid Release**
- 12. Table A-4: Dose Assessments 10 CFR Part 50, Appendix I: Air Dose Due to Gaseous Releases**
- 13. Table A-4: Dose Assessments 10 CFR Part 50, Appendix I: Dose due to Radioiodines, Tritium, and Particulates in Gaseous Releases**
- 14. Liquid and Gas Batch Release Summary**
- 15. Table 6: Liquid and Gas Abnormal Release Summary**

TURKEY POINT UNITS 3 AND 4
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
JANUARY 2013 THROUGH DECEMBER 2013

Table A-1: Gaseous Effluents – Summation of all Releases

Unit: Site

Starting: 1-Jan-2013 Ending: 31-Dec-2013

Total Release	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Annual
A. Fission and Activation Gases						
1. Total Release	Ci	1.98E-01	1.41E-03	1.85E-03	8.49E-03	2.10E-01
2. Average Release Rate for Period	uCi/s	2.55E-02	1.79E-04	2.32E-04	1.07E-03	6.65E-03
3. Percent of Limit	%	N/A	N/A	N/A	N/A	N/A
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	%	N/A	N/A	N/A	N/A	N/A
C. Particulates						
1. Total Release	Ci	8.42E-05	0.00E+00	0.00E+00	2.58E-04	3.43E-04
2. Average Release Rate for Period	uCi/s	1.08E-05	0.00E+00	0.00E+00	3.25E-05	1.09E-05
3. Percent of Limit	%	N/A	N/A	N/A	N/A	N/A
D. Tritium						
1. Total Release	Ci	5.07E+01	8.64E+01	2.55E+01	1.23E+01	1.75E+02
2. Average Release Rate for Period	uCi/s	6.51E+00	1.10E+01	3.21E+00	1.55E+00	5.54E+00
3. Percent of Limit	%	N/A	N/A	N/A	N/A	N/A
E. Gross Alpha						
1. Total Release	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
F. Carbon-14						
1. Total Release	Ci	3.38E+00	3.38E+00	3.38E+00	3.38E+00	1.35E+01
2. Average Release Rate for Period	uCi/s	4.34E-01	4.30E-01	4.25E-01	4.25E-01	4.28E-01
3. Percent of Limit	%					

TURKEY POINT UNITS 3 AND 4
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
JANUARY 2013 THROUGH DECEMBER 2013

Table A-1A: Gaseous Effluents – Ground Level Release – Batch Mode

Unit: Site

Starting: 1-Jan-2013 Ending: 31-Dec-2013

Nuclides Released	Units	Batch Mode				
		1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Annual
A. Fission and Activation Gases						
No Nuclides Found	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+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						
Mn-54	Ci	0.00E+00	0.00E+00	0.00E+00	1.59E-06	1.59E-06
Co-58	Ci	3.37E-07	0.00E+00	0.00E+00	1.06E-05	1.09E-05
Co-60	Ci	3.53E-07	0.00E+00	0.00E+00	2.34E-05	2.38E-05
Zn-65	Ci	8.36E-05	0.00E+00	0.00E+00	0.00E+00	8.36E-05
Sb-122	Ci	0.00E+00	0.00E+00	0.00E+00	5.51E-07	5.51E-07
Sb-125	Ci	0.00E+00	0.00E+00	0.00E+00	1.09E-05	1.09E-05
Cs-134	Ci	0.00E+00	0.00E+00	0.00E+00	5.82E-06	5.82E-06
Cs-137	Ci	0.00E+00	0.00E+00	0.00E+00	2.05E-04	2.05E-04
Total For Period	Ci	8.42E-05	0.00E+00	0.00E+00	2.58E-04	3.43E-04
D. Tritium						
H-3	Ci	2.87E-01	0.00E+00	0.00E+00	3.15E-03	2.91E-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

TURKEY POINT UNITS 3 AND 4
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
JANUARY 2013 THROUGH DECEMBER 2013

Table A-1B: Gaseous Effluents – Ground Level Release – Continuous Mode

Unit: Site

Starting: 1-Jan-2013 Ending: 31-Dec-2013

Nuclides Released	Units	Continuous Mode				
		1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Annual
A. Fission and Activation Gases						
No Nuclides Found	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+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	4.83E+01	8.38E+01	2.47E+01	1.22E+01	1.69E+02
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

TURKEY POINT UNITS 3 AND 4
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
JANUARY 2013 THROUGH DECEMBER 2013

Table A-1C: Gaseous Effluents – Elevated Release – Batch Mode

Unit: Site

Starting: 1-Jan-2013 Ending: 31-Dec-2013

Nuclides Released	Units	Batch Mode				
		1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Annual
A. Fission and Activation Gases						
No Nuclides Found	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+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						
No Nuclides Found	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
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

TURKEY POINT UNITS 3 AND 4
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
JANUARY 2013 THROUGH DECEMBER 2013

Table A-1D: Gaseous Effluents – Elevated Release – Continuous Mode

Unit: Site
Starting: 1-Jan-2013 Ending: 31-Dec-2013

Nuclides Released	Units	Continuous Mode				
		1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Annual
A. Fission and Activation Gases						
No Nuclides Found	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+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						
No Nuclides Found	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
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

TURKEY POINT UNITS 3 AND 4
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
JANUARY 2013 THROUGH DECEMBER 2013

Table A-1E: Gaseous Effluents – Mixed Mode Release – Batch Mode

Unit: Site

Starting: 1-Jan-2013 Ending: 31-Dec-2013

Nuclides Released	Units	Batch Mode				
		1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Annual
A. Fission and Activation Gases						
Ar-41	Ci	2.58E-04	0.00E+00	0.00E+00	2.67E-05	2.84E-04
Kr-85m	Ci	2.23E-04	0.00E+00	0.00E+00	1.46E-05	2.38E-04
Kr-87	Ci	1.12E-06	0.00E+00	0.00E+00	5.34E-07	1.65E-06
Kr-88	Ci	5.90E-05	0.00E+00	0.00E+00	1.24E-05	7.15E-05
Xe-131m	Ci	0.00E+00	0.00E+00	5.88E-05	0.00E+00	5.88E-05
Xe-133m	Ci	2.02E-03	0.00E+00	0.00E+00	3.95E-05	2.06E-03
Xe-133	Ci	1.69E-01	1.40E-03	1.79E-03	7.76E-03	1.80E-01
Xe-135	Ci	2.61E-02	2.92E-06	2.65E-16	6.32E-04	2.68E-02
Total For Period	Ci	1.98E-01	1.41E-03	1.85E-03	8.49E-03	2.10E-01
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	1.55E-03	0.00E+00	0.00E+00	0.00E+00	1.55E-03
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

TURKEY POINT UNITS 3 AND 4
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
JANUARY 2013 THROUGH DECEMBER 2013

Table A-1F: Gaseous Effluents – Mixed Mode Release – Continuous Mode

Unit: Site

Starting: 1-Jan-2013 Ending: 31-Dec-2013

Nuclides Released	Units	Continuous Mode				
		1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Annual
A. Fission and Activation Gases						
No Nuclides Found	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+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	2.04E+00	2.60E+00	8.43E-01	1.16E-01	5.60E+00
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						
C-14	Ci	3.38E+00	3.38E+00	3.38E+00	3.38E+00	1.35E+01

Table A-2: Liquid Effluents – Summation of all Releases

Unit: Site						
Starting: 1-Jan-2013 Ending: 31-Dec-2013						
Total Release	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Annual
A. Fission and Activation Products						
1. Total Release	Ci	1.80E-02	2.20E-02	7.15E-03	2.24E-02	6.96E-02
2. Average Concentration	uCi/mL	4.98E-11	3.31E-11	9.33E-12	3.81E-11	3.21E-11
3. Percent of Limit	%	7.11E-07	4.73E-05	1.33E-05	5.44E-05	4.58E-05
B. Tritium						
1. Total Release	Ci	1.68E+02	1.54E+02	2.75E+01	6.99E+01	4.20E+02
2. Average Concentration	uCi/mL	4.66E-07	2.31E-07	3.59E-08	1.19E-07	1.94E-07
3. Percent of Limit	%	4.66E-03	2.31E-03	3.59E-04	1.19E-03	1.94E-03
C. Dissolved and Entrained Gases						
1. Total Release	Ci	9.36E-04	0.00E+00	0.00E+00	0.00E+00	9.36E-04
2. Average Concentration	uCi/mL	2.59E-12	0.00E+00	0.00E+00	0.00E+00	4.31E-13
3. Percent of Limit	%	1.30E-06	0.00E+00	0.00E+00	0.00E+00	2.16E-07
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	1.22E+06	8.90E+05	4.39E+05	3.19E+05	2.86E+06
F. Dilution Volume						
1. Total Release	Liters	3.61E+11	6.67E+11	7.66E+11	5.90E+11	2.17E+12

TURKEY POINT UNITS 3 AND 4
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
JANUARY 2013 THROUGH DECEMBER 2013

Table A-2A: Liquid Effluents – Batch Mode

Unit: Site

Starting: 1-Jan-2013 Ending: 31-Dec-2013

Nuclides Released	Units	Batch Mode				
		1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Annual
A. Fission and Activation Products						
Na-24	Ci	0.00E+00	4.21E-05	0.00E+00	0.00E+00	4.21E-05
Cr-51	Ci	4.66E-04	0.00E+00	0.00E+00	0.00E+00	4.66E-04
Mn-54	Ci	0.00E+00	1.31E-04	1.59E-05	3.16E-04	4.63E-04
Fe-55	Ci	3.52E-03	1.59E-03	4.83E-04	1.10E-03	6.70E-03
Fe-59	Ci	1.25E-05	0.00E+00	0.00E+00	0.00E+00	1.25E-05
Co-57	Ci	0.00E+00	4.16E-06	3.52E-06	3.69E-05	4.46E-05
Co-58	Ci	2.63E-03	1.03E-02	1.45E-03	2.36E-03	1.68E-02
Co-60	Ci	1.16E-04	5.13E-04	1.91E-04	7.06E-04	1.53E-03
Ni-63	Ci	3.91E-03	3.52E-03	2.92E-03	1.23E-02	2.27E-02
Zn-65	Ci	0.00E+00	0.00E+00	0.00E+00	8.23E-06	8.23E-06
Br-82	Ci	0.00E+00	3.23E-06	0.00E+00	0.00E+00	3.23E-06
Nb-95	Ci	8.12E-06	6.15E-06	0.00E+00	0.00E+00	1.43E-05
Nb-97	Ci	0.00E+00	0.00E+00	0.00E+00	3.64E-06	3.64E-06
Ag-110m	Ci	5.04E-05	0.00E+00	0.00E+00	0.00E+00	5.04E-05
Sn-117m	Ci	4.57E-06	1.01E-06	0.00E+00	0.00E+00	5.58E-06
Sb-122	Ci	0.00E+00	2.70E-06	0.00E+00	0.00E+00	2.70E-06
Sb-124	Ci	6.32E-04	3.72E-05	0.00E+00	0.00E+00	6.69E-04
Sb-125	Ci	6.24E-03	2.38E-03	9.00E-04	6.85E-04	1.02E-02
I-131	Ci	3.40E-06	2.25E-05	0.00E+00	1.12E-05	3.71E-05
I-133	Ci	7.73E-06	8.92E-06	0.00E+00	6.07E-06	2.27E-05
I-134	Ci	3.01E-06	0.00E+00	0.00E+00	0.00E+00	3.01E-06
Cs-134	Ci	8.78E-06	3.27E-04	9.41E-05	3.89E-04	8.19E-04
Cs-137	Ci	3.79E-04	3.09E-03	1.09E-03	4.51E-03	9.07E-03
Total For Period	Ci	1.80E-02	2.20E-02	7.15E-03	2.24E-02	6.96E-02

Table A-2A: Liquid Effluents – Batch Mode

Unit: Site

Starting: 1-Jan-2013 Ending: 31-Dec-2013

Nuclides Released	Units	Batch Mode				
		1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Annual
B. Tritium						
H-3	Ci	1.68E+02	1.54E+02	2.75E+01	6.99E+01	4.20E+02
C. Dissolved and Entrained Gases						
Kr-85	Ci	9.33E-04	0.00E+00	0.00E+00	0.00E+00	9.33E-04
Xe-133	Ci	2.99E-06	0.00E+00	0.00E+00	0.00E+00	2.99E-06
Total For Period	Ci	9.36E-04	0.00E+00	0.00E+00	0.00E+00	9.36E-04
D. Gross Alpha Activity						
No Nuclides Found	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Table A-2B: Liquid Effluents – Continuous Mode

Unit: Site

Starting: 1-Jan-2013 Ending: 31-Dec-2013

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

TURKEY POINT UNITS 3 AND 4
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
JANUARY 2013 THROUGH DECEMBER 2013

Table A-4: Dose Assessments 10 CFR Part 50, Appendix I: Dose to a member of the public due to Liquid Release

Unit: Site

Starting: 1-Jan-2013 Ending: 31-Dec-2013

Ogan Dose	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Annual
Bone	mRem	4.31E-05	1.06E-04	3.63E-05	1.31E-04	3.17E-04
Limit	mRem	10.000	10.000	10.000	10.000	20.000
Percent of Limit	%	0.000	0.001	0.000	0.001	0.002
Liver	mRem	4.31E-05	1.06E-04	3.63E-05	1.31E-04	3.17E-04
Limit	mRem	10.000	10.000	10.000	10.000	20.000
Percent of Limit	%	0.000	0.001	0.000	0.001	0.002
Total Body	mRem	4.31E-05	1.06E-04	3.63E-05	1.31E-04	3.17E-04
Limit	mRem	3.000	3.000	3.000	3.000	6.000
Percent of Limit	%	0.001	0.004	0.001	0.004	0.005
Thyroid	mRem	4.31E-05	1.06E-04	3.63E-05	1.31E-04	3.17E-04
Limit	mRem	10.000	10.000	10.000	10.000	20.000
Percent of Limit	%	0.000	0.001	0.000	0.001	0.002
Kidney	mRem	4.31E-05	1.06E-04	3.63E-05	1.31E-04	3.17E-04
Limit	mRem	10.000	10.000	10.000	10.000	20.000
Percent of Limit	%	0.000	0.001	0.000	0.001	0.002
Lung	mRem	4.31E-05	1.06E-04	3.63E-05	1.31E-04	3.17E-04
Limit	mRem	10.000	10.000	10.000	10.000	20.000
Percent of Limit	%	0.000	0.001	0.000	0.001	0.002
GI-Lli	mRem	4.31E-05	1.06E-04	3.63E-05	1.31E-04	3.17E-04
Limit	mRem	10.000	10.000	10.000	10.000	20.000
Percent of Limit	%	0.000	0.001	0.000	0.001	0.002

TURKEY POINT UNITS 3 AND 4
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
JANUARY 2013 THROUGH DECEMBER 2013

Table A-4: Dose Assessments 10 CFR Part 50, Appendix I: Dose to a member of the public due to Liquid Release

Unit: Site

Starting: 1-Jan-2013 Ending: 31-Dec-2013

Ogan Dose	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Annual
SoIn	mRem	4.93E-05	1.23E-04	4.22E-05	1.53E-04	3.69E-04
Limit	mRem	10.000	10.000	10.000	10.000	20.000
Percent of Limit	%	0.003	0.031	0.003	0.002	0.002

TURKEY POINT UNITS 3 AND 4
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
JANUARY 2013 THROUGH DECEMBER 2013

Table A-4: Dose Assessments 10 CFR Part 50, Appendix I: Air Dose Due to Gaseous Releases

Unit: Site

Starting: 1-Jan-2013 Ending: 31-Dec-2013

NG Dose	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Annual
Gamma Air	mRad	2.27E-06	1.00E-08	1.28E-08	8.50E-08	2.37E-06
Limit	mRad	10.000	10.000	10.000	10.000	20.000
Percent of Limit	%	2.27E-05	1.00E-07	1.28E-07	8.50E-07	1.19E-05
Beta Air	mRad	4.93E-06	2.96E-08	3.88E-08	1.98E-07	5.19E-06
Limit	mRad	20.000	20.000	20.000	20.000	40.000
Percent of Limit	%	2.47E-05	1.48E-07	1.94E-07	9.91E-07	1.30E-05
NG Total Body	mRem	2.00E-06	8.35E-09	1.06E-08	7.41E-08	2.10E-06
Limit	mRem	N/A	N/A	N/A	N/A	500
Percent of Limit	%	N/A	N/A	N/A	N/A	4.20E-07
NG Skin	mRem	4.59E-06	1.98E-08	2.57E-08	1.69E-07	4.80E-06
Limit	mRem	N/A	N/A	N/A	N/A	3000
Percent of Limit	%	N/A	N/A	N/A	N/A	1.60E-07

TURKEY POINT UNITS 3 AND 4
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
JANUARY 2013 THROUGH DECEMBER 2013

Table A-4: Dose Assessments 10 CFR Part 50, Appendix I: Dose due to Radioiodines, Tritium, and Particulates in Gaseous Releases

Unit: Site
Starting: 1-Jan-2013 Ending: 31-Dec-2013

Organ Dose	Units	1ST Quarter	2ND Quarter	3RD Quarter	4TH Quarter	Annual
Bone	mRem	4.97E-03	4.98E-03	4.98E-03	4.98E-03	1.99E-02
Limit	mRem	15.000	15.000	15.000	15.000	30.000
Percent of Limit	%	0.033	0.033	0.033	0.033	0.066
Liver	mRem	4.99E-03	5.00E-03	4.98E-03	4.98E-03	2.00E-02
Limit	mRem	15.000	15.000	15.000	15.000	30.000
Percent of Limit	%	0.033	0.033	0.033	0.033	0.067
Total Body	mRem	4.99E-03	5.00E-03	4.98E-03	4.98E-03	2.00E-02
Limit	mRem	N/A	N/A	N/A	N/A	N/A
Percent of Limit	%	N/A	N/A	N/A	N/A	N/A
Thyroid	mRem	4.99E-03	5.00E-03	4.98E-03	4.98E-03	2.00E-02
Limit	mRem	15.000	15.000	15.000	15.000	30.000
Percent of Limit	%	0.033	0.033	0.033	0.033	0.067
Kidney	mRem	1.11E-03	1.82E-03	7.18E-04	7.14E-04	3.93E-03
Limit	mRem	15.000	15.000	15.000	15.000	30.000
Percent of Limit	%	0.007	0.012	0.005	0.005	0.013
Lung	mRem	4.99E-03	5.00E-03	4.98E-03	4.98E-03	2.00E-02
Limit	mRem	15.000	15.000	15.000	15.000	30.000
Percent of Limit	%	0.033	0.033	0.033	0.033	0.067
GI-Li	mRem	4.99E-03	5.00E-03	4.98E-03	4.98E-03	2.00E-02
Limit	mRem	15.000	15.000	15.000	15.000	30.000
Percent of Limit	%	0.033	0.033	0.033	0.033	0.067

TURKEY POINT UNITS 3 AND 4
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
JANUARY 2013 THROUGH DECEMBER 2013

The totals are not adding up. Liquid and Gas Batch Release Summary

Unit: Site

Starting: 1-Jan-2013 Ending: 31-Dec-2013

A. Liquid Batch Release Totals	Units	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Year Totals
1. Number of Batch Releases		45	34	17	12	108
2. Total duration of batch releases	min	4.75E+03	3.37E+03	1.67E+03	1.16E+03	1.10E+04
3. Maximum batch release duration	min	1.34E+02	1.20E+02	1.23E+02	1.05E+02	1.34E+02
4. Average batch release duration	min	1.06E+02	9.92E+01	9.85E+01	9.65E+01	1.01E+02
5. Minimum batch release duration	min	9.00E+01	8.60E+01	7.00E+01	7.00E+01	7.00E+01
B. Gas Batch Release Totals	Units	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Year Totals
1. Number of Batch Releases		30	4	2	4	40
2. Total duration of batch releases	min	8.03E+04	1.62E+02	6.90E+01	1.57E+03	8.21E+04
3. Maximum batch release duration	min	2.74E+04	4.50E+01	3.50E+01	1.44E+03	2.74E+04
4. Average batch release duration	min	2.68E+03	4.05E+01	3.45E+01	3.92E+02	2.05E+03
5. Minimum batch release duration	min	3.00E+01	3.80E+01	3.40E+01	3.10E+01	3.00E+01

Table 6: Liquid and Gas Abnormal Release Summary

Unit: Site

Starting: 1-Jan-2013 Ending: 31-Dec-2013

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	Ci	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	1	1
2. Total Activity of abnormal releases	Ci	0.00E+00	0.00E+00	0.00E+00	3.41E-03	3.41E-03

ATTACHMENT A
REG. GUIDE 1.21 Table A-3
SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

A. SOLID WASTE SHIPPED OFFSITE FOR BURIAL OR DISPOSAL

1.	<u>TYPE OF WASTE</u>	<u>UNITS</u>	<u>12 MONTH PERIOD</u>	<u>% ERROR</u>
a.	Spent resin, filters, sludge, evaporator bottoms, etc.	m ³ Ci	3.00 E +00 5.05 E +01	2.00 E+00
b.	Dry compressible waste (Note 1)	m ³ Ci	1.55 E+03 1.72 E+00	2.00 E+00
c.	Irradiated components, control rods, etc.	m ³ Ci	0.00 E+00 0.00 E+00	2.00 E+00
d.	Other: non-compressed	m ³ Ci	1.08 E+02 4.37 E-02	2.00 E+00

2. ESTIMATE OF MAJOR NUCLIDE COMPOSITION (by type of waste)

a.	<u>NUCLIDE</u>	<u>UNITS</u>	<u>VALUE</u>
	Fe-55	%	5.01
	Co-58	%	3.45
	Co-60	%	11.03
	Ni-63	%	59.82
	Cs-134	%	8.38
	Cs-137	%	9.91
b.	<u>NUCLIDE</u>	<u>UNITS</u>	<u>VALUE</u>
	Fe-55	%	30.44
	Co-58	%	6.36
	Co-60	%	5.49
	Ni-63	%	12.35
	Zr-95	%	3.25
	Zn-65	%	31.88
	Nb-95	%	6.24

TURKEY POINT UNITS 3 AND 4
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
JANUARY 2013 THROUGH DECEMBER 2013

ATTACHMENT A
REG. GUIDE 1.21 Table A-3

c.	<u>NUCLIDE</u>	<u>UNITS</u>	<u>VALUE</u>
		None shipped	

d.	<u>NUCLIDE</u>	<u>UNITS</u>	<u>VALUE</u>
	Fe-55	%	44.97
	Co-58	%	9.81
	Co-60	%	8.01
	Ni-63	%	16.78
	Zn-65	%	5.01
	Nb-95	%	9.63

3. SOLID WASTE DISPOSITION (Note 2)

<u>Number of Shipments</u>	<u>Mode of Transportation</u>	<u>Destination</u>
40	Sole use truck	Energy Solutions Bear Creek Road Facility (Oak Ridge, TN)
6	Sole use truck	Energy Solutions Clive Facility (Clive, UT)
1	Sole use truck	Energy Solutions Gallaher Road Facility (Kingston, TN)
1	Sole use truck	Studsvik Processing Facility (Erwin, TN)

B. IRRADIATED FUEL SHIPMENTS (Disposition)

None

TURKEY POINT UNITS 3 AND 4
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
JANUARY 2013 THROUGH DECEMBER 2013

ATTACHMENT A
REG. GUIDE 1.21 Table A-3

SOLID WASTE SHIPMENTS

Waste Classification	Total Volume Cubic Feet	Total Curies (Note 3)	Principal Radionuclides (Note 4)	Type of Waste (Note 5)	R.G. 1.21 Category	Type of Container (Note 6)
Class A	5.84 E+04	1.77 E+00	None	Compressible Waste	1.b, 1.d	General Design
Class B/C	1.06 E+02	5.05 E+01	None	Primary Resin/Filters	1.a.	General Design/ Type B/ Type A

No solidification or absorbing agents were used or needed in the shipment of these waste types

ATTACHMENT A

REG. GUIDE 1.21 Table A-3

- NOTE 1: Dry compressible waste volume indicates volume shipped to a burial site following reduction by a waste processing facility.
- NOTE 2: Material transported to Tennessee was consigned to licensed processing facilities for volume reduction and decontamination activities. The material remaining after processing was transported by the processor to Clive, Utah in accordance with the appropriate burial license activity limits.
- NOTE 3: The total curie quantity and radionuclide composition of solid waste shipped from the Turkey Point Plant Units 3 and 4 are determined using a combination of qualitative and quantitative techniques. The Turkey Point Plant follows the guidelines in the Low Level Waste Licensing Branch Technical Position 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 inference from specific activity and mass or activity concentration and volume. Activation analysis may be applied when it is appropriate. The total activity determination by any of these methods is considered to be an estimate.
- The composition of radionuclides in the waste is determined by periodic off-site analysis for difficult to measure isotopes. Off-site analyses are used to establish scaling factors or other estimates for difficult to measure isotopes and principle Gamma emitters.
- NOTE 4: Principle radionuclide refers to those radionuclides contained in the waste in concentrations greater than 0.01 times the concentration of the nuclide listed in Table 1 or 0.01 times the smallest concentration of the nuclide listed in Table 2 of 10 CFR 61.55.
- NOTE 5: Type of waste is specified as described in NUREG 0782, Draft Environment Impact Statement on 10 CFR 61 "Licensing Requirements for Land Disposal of Radioactive Waste".
- NOTE 6: Type of container refers to the transport package.

TURKEY POINT UNITS 3 AND 4
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
JANUARY 2012 THROUGH DECEMBER 2012

Attachment B

ODCM Rev. 20 Issued 12/19/13