MAY 14 2013

L-2012-159
10 CFR 50.36b

FPL.

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D.C. 20555-00001

Re: Turkey Point Units 3 and 4
Docket Nos. 50-250 and 50-251
2012 Annual Radiological
Environmental Operating Report

Enclosed is the 2012 Annual Radiological Environmental Operating Report for Turkey Point Units 3 and 4, as required by Technical Specification 6.9.1.3.

Should there be any questions or comments regarding this information, please contact Robert J. Tomonto at (305) 246-7327.

Sincerely,

Michael Kiley
Vice President
Turkey Point Nuclear Plant

SM
Enclosure

cc: Regional Administrator, Region II, USNRC
Senior Resident Inspector, USNRC, Turkey Point Plant

Florida Power & Light Company
9760 S.W. 344th Street Homestead, FL 33035

IE25
NRR

2012
ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT
TURKEY POINT PLANT – UNITS 3 & 4

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2012
ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT
TURKEY POINT PLANT – UNITS 3 & 4

EXECUTIVE SUMMARY

The data obtained through the Turkey Point Radiological Environmental Monitoring Program verifies that the levels of radiation and concentrations of radioactive materials in environmental samples are not increasing. These measurements verify that the dose or dose commitment to members of the public, due to operation of Turkey Point Units 3 & 4, during the surveillance year, is well within the limits established by 10 CFR 50, Appendix I. The sampling period was from January 1, 2012 to December 31, 2012.

Additionally, supplemental samples collected by the State of Florida, DOH, do not indicate adverse trends in the radiological environment.

2012
ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT
TURKEY POINT PLANT – UNITS 3 & 4

I. INTRODUCTION

This report is submitted pursuant to Specification 6.9 of Turkey Point Units 3 & 4 Technical Specifications. The Annual Radiological Environmental Operating Report provides information, summaries and analytical results pertaining to the Radiological Environmental Monitoring Program for the calendar year indicated. This report covers surveillance activities described in the Offsite Dose Calculation Manual (ODCM) meeting the requirements of Unit 3 and Unit 4 Technical Specifications.

II. RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

A. Purpose

The purpose of the Radiological Environmental Monitoring Program is to provide representative measurements of radiation and of radioactive materials in those exposure pathways and for those radionuclides which lead to the highest potential radiation exposures of members of the public resulting from station operation. The Radiological Environmental Monitoring Program also supplements the radiological effluent monitoring program by verifying that the measurable concentrations of radioactive materials and levels of radiation are not higher than expected on the basis of the effluent measurements and the modeling of the environmental exposure pathways.

B. Program Description

The Radiological Environmental Monitoring Program (REMP) for the Turkey Point Plant is conducted pursuant to Control 5.1 of Turkey Point Unit 3 & 4 ODCM.

1. Sample Locations, Types and Frequencies:

   a. Direct radiation gamma exposure rate is monitored continuously at 23 locations by thermoluminescent dosimeters (TLDs). TLDs are collected and analyzed quarterly.

   b. Airborne radioiodine and particulate samplers are operated continuously at six locations. Samples are collected and analyzed weekly. Analyses include Iodine-131, gross beta, and gamma isotopic measurements.

   c. Surface water samples are collected from three locations. Samples are collected and analyzed monthly. Analyses include gamma isotopic and tritium measurements.

d. Shoreline sediment samples are collected from three locations coinciding with the locations for surface water samples. Samples are collected and analyzed semi-annually. Sediment samples are analyzed by gamma isotopic measurements.

e. Fish and invertebrate samples are collected from two locations coinciding with two of the locations for surface water samples. Samples are collected and analyzed semi-annually. Fish and invertebrate samples are analyzed by gamma isotopic measurements.

f. Broad leaf vegetation samples are collected from three locations. Samples are collected and analyzed monthly. Broad leaf vegetation samples are analyzed by gamma isotopic measurements.

Attachment A provides specific information pertaining to sample locations, types and frequencies.

Note: Ground Water Protection, NEI Initiative: The program and results are described in Attachment D

2. Analytical Responsibility:

Radiological environmental monitoring for the Turkey Point Plant is conducted by the State of Florida, Department of Health (DOH). Samples are collected and analyzed by DOH personnel.

Samples are analyzed at the DOH Environmental Radiation Control Laboratory in Orlando, Florida.

Note: The State is not involved in the (Industry Initiative) ground water monitoring program.

C. Analytical Results

Table 1, Environmental Radiological Monitoring Program Annual Summary provides a summary for all specified samples collected during the referenced surveillance period. Deviations from the sample schedule, missing data and/or samples not meeting the specified "A PRIORI" LLD, if any, are noted and explained in Tables 1A and 1B respectively. Analysis data for all specified samples analyzed during the surveillance period is provided in Attachment B.

D. Land Use Census

A land use census out to a distance of 5 miles radius from the Turkey Point Plant is conducted annually to determine the location of the nearest milk animal, residence, and garden producing broad leaf vegetation, in each of the sixteen meteorological sectors. A summary of the land use census for the surveillance year is provided in Table 2, Land Use Census Summary.

E. Interlaboratory Comparison Program

The intercomparison program consists of participating in the DOE Mixed Analyte Performance Evaluation Program (MAPEP).

This program provides similar testing (matrices, nuclides, and levels) as the former EPA Interlaboratory Comparison Program and is referred to as the Mixed Analyte Performance Evaluation Program (MAPEP).

The samples are analyzed using the methods applicable to the REMP (gamma spectroscopy, Gross Beta, and Tritium for water).

From the MAPEP handbook:
Acceptance criteria were developed from a review of precision and accuracy data compiled by other performance evaluation programs (PEPs), the analytical methods literature, from several MAPEP pilot studies, and from what is considered reasonable, acceptable, and achievable for routine analyses among the more experienced laboratories.

The results for nuclides associated with the REMP are listed in ATTACHMENT C, RESULTS FROM THE INTERLABORATORY COMPARISON PROGRAM.

III. DISCUSSION AND INTERPRETATION OF RESULTS

A. Reporting of Results

The Annual Radiological Environmental Operating Report contains the summaries, interpretations and information required by Control 1.4 of ODCM. Table 1 provides a summary of the measurements made for the nuclides required by ODCM Table 5.1-2, for all samples specified by Table 5.1-1. In addition, summaries are provided for other nuclides identified in the specified samples, including those not related to station operation. These include nuclides such as K-40, Th-232, Ra-226, and Be-7 which are common in the Florida environment.

B. Interpretation of Results

1. Direct Radiation:

   The results of direct radiation monitoring are consistent with past measurements for the specified locations.
   The exposure rate data shows no indication of any trends attributed to effluents from the plant. The measured exposure rates are consistent with exposure rates that were observed during the pre-operational surveillance program. Direct radiation monitoring results are summarized in Table 1.

2. Air Particulates/Radioiodine:

   For results attributed to plant effluents:
   The results for radioactive air particulate and radioiodine monitoring are consistent with past measurements and indicate no trends attributed to plant effluents. All samples for radioiodine yielded no detectable I-131. Gamma isotopic measurements yielded no indication of any nuclides attributed to station operation. The results for air particulate/radioiodine samples are consistent with measurements that were made during the pre-operational surveillance program. Air particulate and radioiodine monitoring results are summarized in Table 1.

3. Waterborne, Surface Water:

   The results of radioactivity measurements in surface water samples are consistent with past measurements. Tritium was reported as present in five of 24 indicator location and zero of 12 control location surface water samples collected. These results are consistent with the known subsurface interchange that occurs between the closed cooling canal and its surrounding waters, and the pressure gradients caused by the flow of aquifer subsurface waters in South Florida. The highest reported tritium is 4.3% of the required detection level specified by ODCM Table 5.1-3.

4. Waterborne, Sediment:
   Gamma isotopic measurements yielded no indication of any nuclides attributed to station operation.

5. Waterborne, Food Products:

The results are consistent with past measurements. Gamma isotopic measurements yielded no indication of any nuclides attributed to station operation.

6. Broad Leaf Vegetation

For results attributed to plant effluents:
The results of radioactivity measurements are consistent with past measurements. Cs-137 was detected in samples collected from the indicator locations. The maximum concentration reported was 13.4% of the reporting level specified by ODCM Table 5.1-2. No other fission products were detected.

7. Land Use Census

There were no additions to the land use relative to last year's report.

No locations yielding a calculated dose or dose commitment greater than the values currently being calculated were identified by the land use census.

No locations yielding a calculated dose or dose commitment (via the same exposure pathway) 20% greater than locations currently being sampled in the radiological environmental monitoring program were identified by the land use census.

8. Interlaboratory Comparison Program

The State laboratory participated in MAPEP 26 and 27.

In MAPEP 26, the results for Water, Air Filter, Gross Beta, mixed gamma emitters in Air Filters, and Soil matrices for those nuclides associated with nuclear power plant operation and using analytical methods used in the REMP are acceptable.
For the vegetation matrix there was one not acceptable result for Cs-137. The reported result for a 'blank' was too high; a "false positive" was reported for Cs-137.
An investigation was conducted by the State of Florida and determined that there was very low level contamination on the counting chamber from the previous vegetation sample counted just prior to counting the MAPEP sample. The State revised their applicable procedure and added a Section associated with contamination prevention. When samples are prepared and placed into the counting beakers, each sample container's exterior shall be wiped clean prior to mounting the sample on a detector.

In MAPEP 27, the results for Water, Air Filter, Gross Beta, mixed gamma emitters in Air Filters and Vegetation matrices for those nuclides associated with nuclear power plant operation and using analytical methods used in the REMP are acceptable.

The results are listed in Attachment C.

C. Conclusions

The data obtained through the Turkey Point Plant Radiological Environmental Monitoring Program verifies that the levels of radiation and concentrations of radioactive materials in environmental samples, representing the highest potential exposure pathways to members of the public, are not being increased.
The measured exposure rates are consistent with exposure rates that were observed during the pre-operational surveillance program.

The results for air particulate/radioiodine samples are consistent with measurements that were made during the pre-operational surveillance program.
The highest value of tritium in surface water was 4.3% of the required LLD listed in ODCM Table 5.1-3.

There were no indications of any other nuclides that could be attributed to plant effluents.

There were no indications of any nuclides in waterborne sediment or food products attributed to plant effluents.

The results of radioactivity measurements for broad leaf vegetation are consistent with past measurements.

Additionally, supplemental to the ODCM program, sampling of the direct exposure, inhalation, and ingestion pathways, performed by DOH, does not show adverse trends in levels of radiation and radioactive materials in unrestricted areas.

The measurements verify that the dose or dose commitment to members of the public, due to operation of Turkey Point Units 3 & 4, during the surveillance year, are well within "as low as reasonably achievable (ALARA)" criteria established by 10 CFR 50, Appendix I.

TABLE 1

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM ANNUAL SUMMARY
Name of Facility Turkey Point Units 3 & 4, Docket No(s). 50-250 & 50-251
Location of Facility Miami-Dade, Florida , Reporting Period January 1 - December 31, 2012
(County, State)

PATHWAY: DIRECT RADIATION
SAMPLES COLLECTED: TLD
UNITS: micro-R/hr

Type and Total Number of Analyses Performed	Lower Limit of Detection[a] (LLD)	All Indicator Locations Mean (f)[b] Range	Location with Highest Annual Mean: Name[c] Distance & Direction	Location with Highest Annual Mean: Mean (f)[b] Range	Control Locations Mean (f)[b] Range
Exposure Rate, 87[d]	---	4.4 (83/83) 3.2. - 8.6	NW-10 10 mi., NW	5.4 (4/4) 5.2 - 5.8	4.6 (4/4) 4.3 - 4.8

Number of Non-routine Reported Measurements = 0

TABLE 1

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM ANNUAL SUMMARY
Name of Facility Turkey Point Units 3 & 4, Docket No(s). 50-250 & 50-251
Location of Facility Miami-Dade, Florida , Reporting Period January 1 - December 31, 2012
(County, State)

PATHWAY: AIRBORNE
SAMPLES COLLECTED: RADIOIODINE AND PARTICULATES
UNITS: pCi/m^3

Type and Total Number of Analyses Performed	Lower Limit of Detection[a] (LLD)	All Indicator Locations Mean (f)[b] Range	Location with Highest Annual Mean: Name[c] Distance & Direction	Location with Highest Annual Mean: Mean (f)[b] Range	Control Locations Mean (f)[b] Range
^{131}I, 311	0.012	<MDA	—	—	< MDA
Gross Beta, 310	0.0064	0.015 (258/258) 0.004 - 0.034	T-72 < 1 mi, WSW	0.015 (52/52) 0.004 - 0.034	0.015 (52/52) 0.004 - 0.031
Composite Gamma Isotopic, 20					
^{7}Be	0.0006	0.129 (20/20) 0.092 - 0.214	T-58 1 mi., NW	0.1482 (4/4) 0.1078 - 0.214	0.1167 (4/4) 0.1139 - 0.1199
^{40}K	—	< MDA	—	—	< MDA
^{134}Cs	0.0008	< MDA	—	—	< MDA
^{137}Cs	0.0008	< MDA	—	—	< MDA
^{210}Pb	—	0.0152 (13/20) 0.0093 - 0.0291	T-58 1 mi., NW	0.0196 (3/4) 0.0121 – 0.0291	0.0147 (2/4) 0.0125 – 0.0169

Be-7,K-40 & Pb-210 are naturally occurring.

Number of Non-routine Reported Measurements = 0

TABLE 1

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM ANNUAL SUMMARY
Name of Facility Turkey Point Units 3 & 4, Docket No(s). 50-250 & 50-251
Location of Facility Miami-Dade, Florida , Reporting Period January 1 - December 31, 2012
(County, State)

PATHWAY: WATERBORNE
SAMPLES COLLECTED: SURFACE WATER
UNITS: pCi/L

Type and Total Number of Analyses Performed	Lower Limit of Detection[a] (LLD)	All Indicator Locations Mean (f)[b] Range	Location with Highest Annual Mean		Control Locations Mean (f)[b] Range
			Name[c] Distance & Direction	Mean (f)[b] Range	
Tritium, 36	172	108 (5/24) 88 - 129	T-81 6 mi., S	108 (5/24) 88 - 129	< MDA
Gamma Isotopic, 36					
^{40}K	58	313 (24/24) 136 - 478	T-81 6 mi., S	344 (12/12) 213 - 427	81 (12/12) 29 - 178
^{54}Mn	3	< MDA	---	---	< MDA
^{59}Fe	6	< MDA	---	---	< MDA
^{58}Co	3	< MDA	---	---	< MDA
^{60}Co	4	< MDA	---	---	< MDA
^{65}Zn	7	< MDA	---	---	< MDA
^{95}Zr-Nb	6	< MDA	---	---	< MDA
^{131}I	4	< MDA	---	---	< MDA
^{134}Cs	4	< MDA	---	---	< MDA
^{137}Cs	4	< MDA	---	---	< MDA
^{140}Ba-La	9	< MDA	---	---	< MDA

K-40 is naturally occurring.

Number of Non-routine Reported Measurements = 0

TABLE 1

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM ANNUAL SUMMARY
Name of Facility Turkey Point Units 3 & 4, Docket No(s). 50-250 & 50-251
Location of Facility Miami-Dade, Florida , Reporting Period January 1 - December 31, 2012
(County, State)

PATHWAY: WATERBORNE
SAMPLES COLLECTED: SHORELINE SEDIMENT
UNITS: pCi/kg, DRY

Type and Total Number of Analyses Performed	Lower Limit of Detection[a] (LLD)	All Indicator Locations Mean (f)[b] Range	Location with Highest Annual Mean Name[c] Distance & Direction	Location with Highest Annual Mean Mean (f)[b] Range	Control Locations Mean (f)[b] Range
Gamma Isotopic, 6					
^{7}Be	56	229 (2/4)	T-42 <1 mi., ENE	265 (1/2)	161 (2/2)
^{40}K	100	215 (4/4) 103 - 393	T-81 6 mi., S	272 (2/2) 150 – 393	257 (2/2) 154 - 360
^{58}Co	6	<MDA	—	—	< MDA
^{60}Co	7	<MDA	—	—	< MDA
^{134}Cs	7	<MDA	—	—	< MDA
^{137}Cs	7	<MDA	—	—	< MDA
^{210}Pb	—	1305 (3/4) 751 - 1831	T-42 < 1 mi, ENE	1931 (1/2)	330 (1/2)
^{226}Ra	15	1312 (3/4) 643 - 1821	T-81 6 mi., S	1232 (2/2) 643 - 1821	488 (2/2) 243 - 732
^{235}U	—	<MDA	—	—	47 (1/2)
^{238}U	—	529 (2/4) 503 - 555	T-81 6 mi., S	529 (2/4) 503 - 555	183 (1/2)

Be-7, K-40, Pb-210, Ra-226, U-235 & U-238 are naturally occurring.

Number of Non-routine Reported Measurements = 0

TABLE 1

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM ANNUAL SUMMARY
Name of Facility Turkey Point Units 3 & 4, Docket No(s). 50-250 & 50-251
Location of Facility Miami-Dade, Florida , Reporting Period January 1 - December 31, 2012
(County, State)

PATHWAY: INGESTION
SAMPLES COLLECTED: CRUSTACEA
UNITS: pCi/kg, WET

Type and Total Number of Analyses Performed	Lower Limit of Detection[a] (LLD)	All Indicator Locations Mean (f) Range	Location with Highest Annual Mean		Control Locations Mean (f)[b] Range
			Name[c] Distance & Direction	Mean (f)[b] Range	
Gamma Isotopic, 0					
^{40}K	270	---	---	---	---
^{226}Ra	300	---	---	---	---
^{54}Mn	16	---	---	---	---
^{59}Fe	28	---	---	---	---
^{58}Co	15	---	---	---	---
^{60}Co	16	---	---	---	---
^{65}Zn	32	---	---	---	---
^{134}Cs	16	---	---	---	---
^{137}Cs	16	---	---	---	---

No Crustacean samples were available during this period. Full complement of fish samples was collected. See next page.

Number of Non-routine Reported Measurements = 0

TABLE 1

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM ANNUAL SUMMARY
Name of Facility Turkey Point Units 3 & 4, Docket No(s). 50-250 & 50-251
Location of Facility Miami-Dade, Florida , Reporting Period January 1 - December 31, 2012
(County, State)

PATHWAY: INGESTION
SAMPLES COLLECTED: FISH
UNITS: pCi/kg, WET

Type and Total Number of Analyses Performed	Lower Limit of Detection[a] (LLD)	All Indicator Locations Mean (f) Range	Location with Highest Annual Mean		Control Locations Mean (f)[b] Range
			Name[c] Distance & Direction	Mean (f)[b] Range	
Gamma Isotopic, 4					
^{7}Be	---	<MDA	---	---	<MDA
^{40}K	270	2306 (2/2) 2243- 2369	T-81 6 mi., S	2306 (2/2) 2243- 2369	2375 (2/2) 1872 - 2879
^{54}Mn	16	<MDA	---	---	<MDA
^{59}Fe	28	<MDA	---	---	<MDA
^{58}Co	15	<MDA	---	---	<MDA
^{60}Co	16	<MDA	---	---	<MDA
^{65}Zn	32	<MDA	---	---	<MDA
^{134}Cs	16	<MDA	---	---	<MDA
^{137}Cs	16	<MDA	---	---	<MDA
^{226}Ra	300	<MDA	---	---	<MDA
^{238}U	---	<MDA	---	---	<MDA

Be-7, K-40, Pb-210, Ra-226 & U-238 are naturally occurring.

Number of Non-routine Reported Measurements = 0

TABLE 1

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM ANNUAL SUMMARY
Name of Facility Turkey Point Units 3 & 4, Docket No(s). 50-250 & 50-251
Location of Facility Miami-Dade, Florida , Reporting Period January 1 - December 31, 2012
(County, State)

PATHWAY: INGESTION
SAMPLES COLLECTED: BROAD LEAF VEGETATION
UNITS: pCi/kg, WET

Type and Total Number of Analyses Performed	Lower Limit of Detection[a] (LLD)	All Indicator Locations Mean (f)Range	Location with Highest Annual Mean: Name[c] Distance & Direction	Location with Highest Annual Mean: Mean (f)[b] Range	Control Locations Mean (f)[b] Range
Gamma Isotopic, 36					
^{7}Be	64	1496(24/24) 743 - 2209	T-41 2 mi., W/NW	1522 (12/12) 837 - 2898	1331 (12/12) 752 - 1947
^{40}K	120	3673 (24/24) 564 - 5462	T-40 3 mi., W	4132 (12/12) 2623 - 5462	4213 (12/12) 2765 - 6125
^{58}Co	6	<MDA	—	—	<MDA
^{60}Co	8	<MDA	—	—	<MDA
^{131}I	9	<MDA	—	—	<MDA
^{134}Cs	8	<MDA	—	—	<MDA
^{137}Cs	8	77 (21/24) 17 - 268	T-41 2 mi., W/NW	118 (11/12) 18 - 268	18 (2/12) 11 - 24
^{210}Pb	—	614 (5/24) 308 – 1180	T-41 2 mi., W/NW	681 (4/12) 308 - 1180	1038 (2/12) 342 - 1733
^{226}Ra	189	305 (4/24) 281 – 344	T-41 2 mi., W/NW	313 (3/12) 294 - 344	95 (1/12)

Be-7, K-40, Pb-210 & Ra-226 are naturally occurring.

Number of Non routine Reported Measurements = 0

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM ANNUAL SUMMARY
Name of Facility Turkey Point Units 3 & 4, Docket No(s). 50-250 & 50-251
Location of Facility Miami-Dade, Florida , Reporting Period January 1 - December 31, 2012
(County, State)

NOTES

a. The LLD is an "a priori" lower limit of detection which establishes the smallest concentration of radioactive material in a sample that will yield a net count above system background that will be detected with 95% probability with only 5% probability of falsely concluding that a blank observation represents a real signal.

LLDs in this column are at time of measurement. The MDAs reported in Attachment B for the individual samples have been corrected to the time of sample collection.

b. Mean and range based upon detectable measurements only. Fraction of detectable measurements at specified locations is indicated in parentheses (f).

c. Specific identifying information for each sample location is provided in Attachment A.

d. Results were based upon the average net response of three elements in a TLD. (Thermoluminescent Dosimeter).

MDA refers to minimum detectable activity.

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TABLE 1A

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DEVIATIONS / MISSING DATA

A)	Pathway:	Direct Exposure - TLDs
	Location:	SSE-1, 1 mile South Southeast
	Dates:	03/14/12 to 06/19/12.
	Deviation:	Failure to provide continuous monitoring.
	Description of Problem:	TLD missing; discovered at collection attempt
	Corrective action	Replaced TLD
B)	Pathway	Airborne – Particulates and iodines
	Location:	T-41, 1.6 mile West Northwest
	Dates:	05/21/12 to 05/30/12
	Deviation:	Failure to provide continuous monitoring. Did not meet gross beta LLD of 0.01 pCi / cu-m.
	Description of Problem:	Pump possibly failing. Sampling run time 13.2 hours of 142.4 hours deployment time
	Corrective Action	Restored pump. Air sample started 5/30/12.
C)	Pathway	Airborne – Particulates and iodines
	Location:	T-41, 1.6 mile West Northwest
	Dates:	05/30/12 to 06/06/12
	Deviation:	Failure to provide continuous monitoring.
	Description of Problem:	Pump failed and no collection or run time.
	Corrective Action	Replaced failed pump. Air sample started 6/06/12.
D)	Pathway	Airborne – Particulates
	Location:	T-64, 22 miles North Northeast
	Dates:	06/12/12 to 06/20/12
	Deviation:	Failure to provide continuous monitoring.
	Description of Problem:	The magnetic filter funnel was on the ground at time of collection; particulate filter missing.
	Corrective Action	Reinstalled filter and magnetic filter funnel. Air sample started 6/20/12.

TABLE 1A

(Page 2 of 2)

DEVIATIONS / MISSING DATA

E)	Pathway	Ingestion – Crustacean (semi-annual sample period)
	Locations and dates:	T-81 , 6 miles S All of year
		T-67, 13 to 18 miles N, NNE First half 2012
	Deviation:	Failure to collect sample specified in ODCM
	Description of Problem:	Lack of crustacean sample. Repeated sampling yielded insufficient sample to perform an assay. Crustaceans may be over harvested. Contacted local vendors to supplement the sampling program: They will not affirm the crustacean are from areas 'close' to the ODCM sample locations, and can not provide material at reasonable cost.
	Corrective Action	Continue attempts to collect sufficient sample mass. Fish sample media adequately collected for the year.
F)	Pathway	Ingestion – Crustacean (semi-annual sample period)
	Locations and dates:	T-81 , 6 miles S All of year
		T-67, 13 to 18 miles N, NNE Second half 2012
	Deviation:	Failure to collect sample specified in ODCM
	Description of Problem:	Lack of crustacean sample. Repeated sampling yielded insufficient sample to perform an assay. Crustaceans may be over harvested. Contacted local vendors to supplement the sampling program: They will not affirm the crustacean are from areas 'close' to the ODCM sample locations, and can not provide material at reasonable cost.
	Corrective Action	Continue attempts to collect sufficient sample mass. Fish sample media adequately collected for the year.

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TABLE 1B

ANALYSIS WITH LLDs ABOVE ODCM TABLE 5.1-3 DETECTION CAPABILITIES
1/1/2012 – 12/31/2012

Air sample at location T-41, located 1.6 miles west northwest from site did not meet the gross beta airborne LLD value of 0.01 pCi / cu-meter during sampling period May 21, 2012 through May 30, 2012. Reason for the deviation was pump failing.

The values specified in ODCM Table 5.1-3, Detection Capabilities

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TABLE 2

LAND USE CENSUS

Distance to Nearest (a, b)

Sector	07/12- 08/12 Milk (c) Animal	07/12- 08/12 Residence (g)	07/12- 08/12 Garden (d)
N	L (e)	2.0 / 354	L
NNE	O (f)	O	O
NE	O	O	O
ENE	O	O	O
E	O	O	O
ESE	O	O	O
SE	O	O	O
SSE	O	O	O
S	L	L	L
SSW	L	L	L
SW	L	L	L
WSW	L	L	L
W	L	L	L
WNW	L	3.7 / 302	4.5 / 303
NW	L	3.7 / 311	L
NNW	L	L	4.6 / 327

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TABLE 2

LAND USE CENSUS

NOTES

a. All categories surveyed out to 5 miles radius from the Turkey Point Plant.

b. The following format is used to denote the location:

distance (miles)/bearing (degrees)

For example, a residence located in the north sector at a distance of 2.0 miles bearing 354 degrees is recorded as 2.0 / 354.

c. Potential milk animal locations.

d. Gardens with an estimated growing area of 500 square feet or more.

e. L denotes that the sector area is predominantly a land area unoccupied by the category type.

f. O denotes that the sector area is predominantly an ocean area.

g. Non-residential occupied buildings in these sectors include the following:

Sector	Distance	Description
N	1.9 / 349	24-hour Security Staff Building
NNW	1.9 / 349	Security booth at park entrance
NNW	4.6 / 327	Livable house, does not appear to be occupied.

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ATTACHMENT A

KEY TO SAMPLE LOCATIONS

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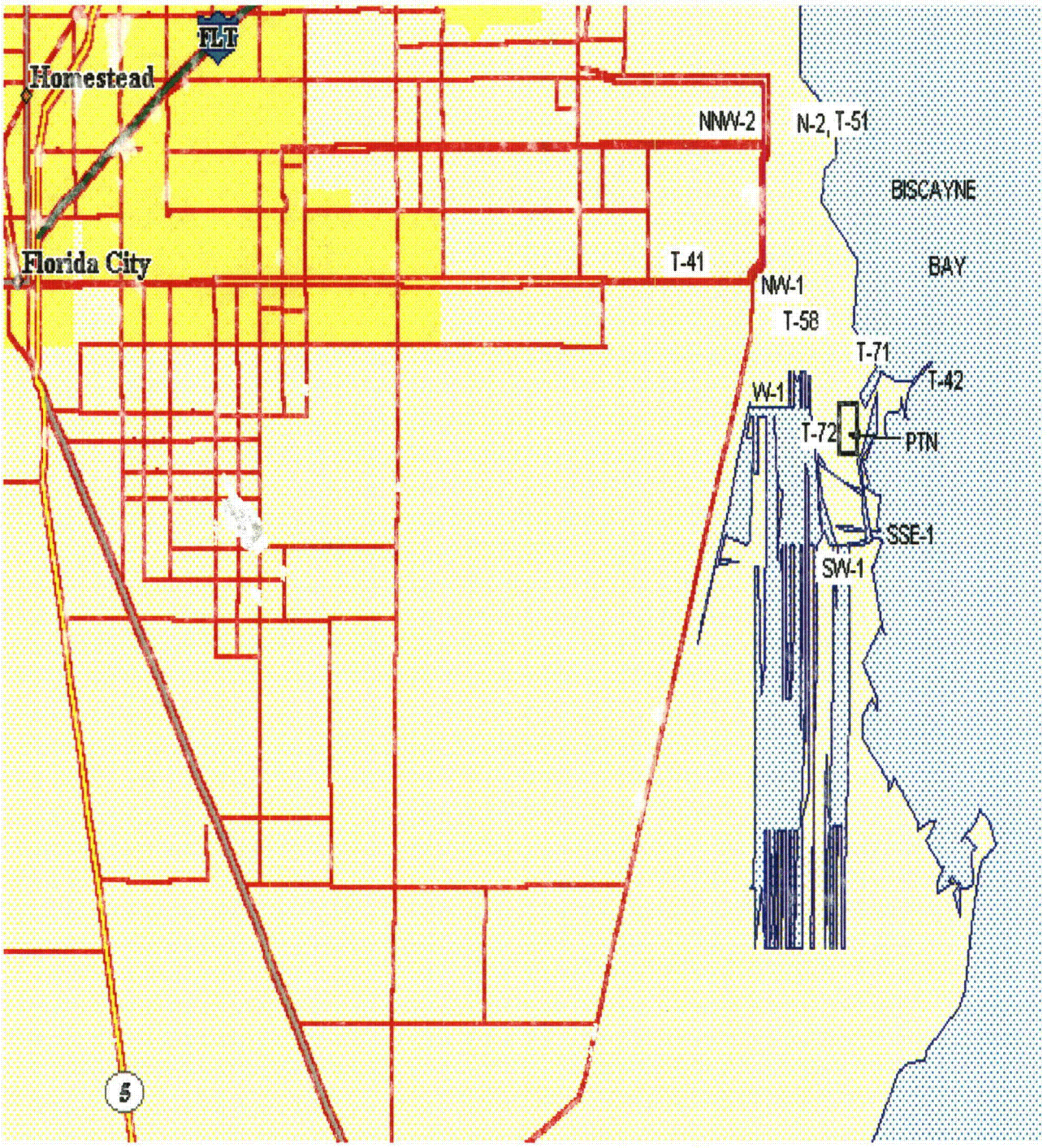
NEAR SITE SAMPLING LOCATIONS



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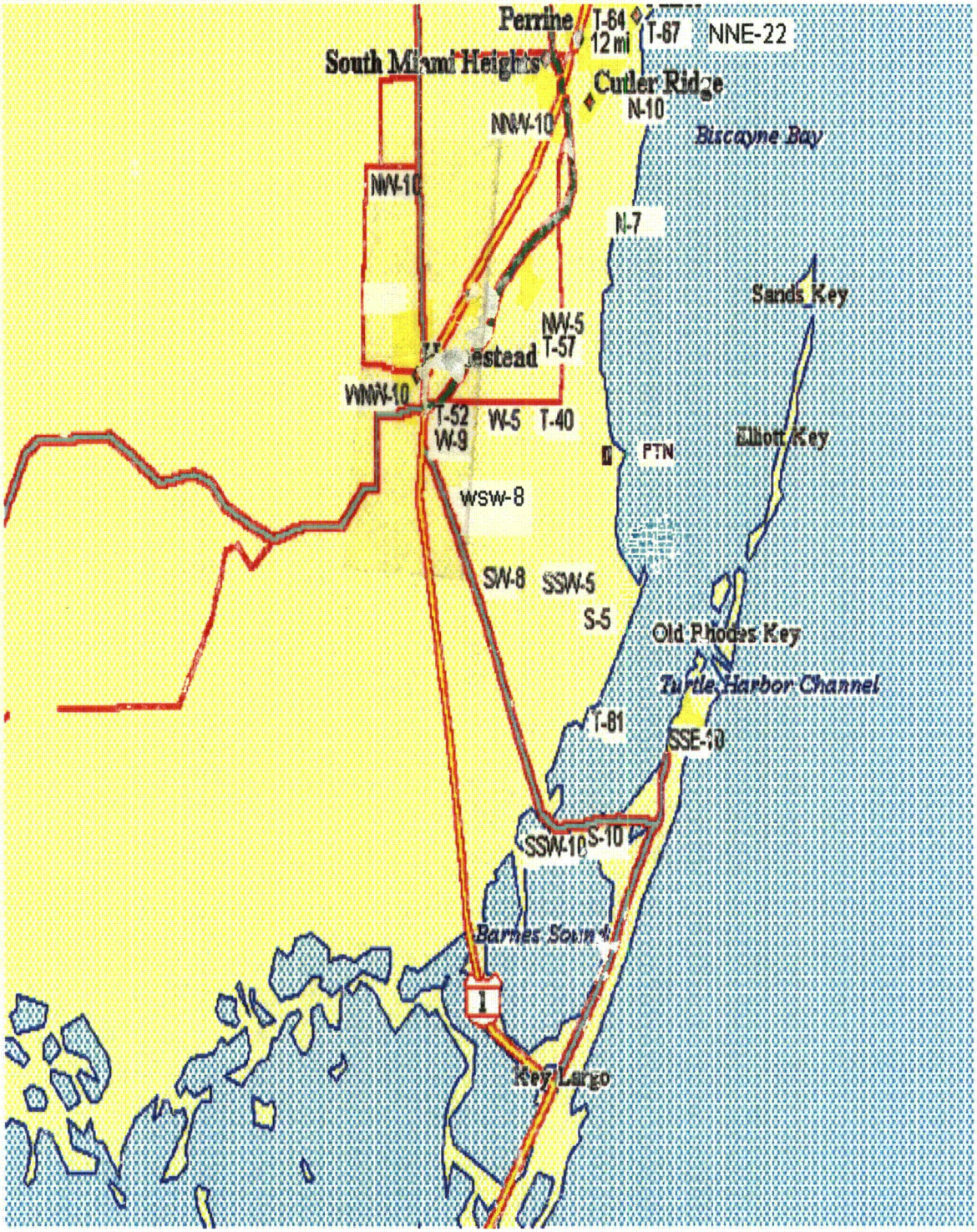
DISTANT REMP SAMPLING LOCATIONS



ATTACHMENT A

PATHWAY: DIRECT RADIATION
SAMPLES COLLECTED: TLD
SAMPLE COLLECTION FREQUENCY: QUARTERLY

Location [a] Name	Description
N-2	Convey Point, Parking Area
N-7	Black Point Marina Parking Lot
N-10	Old Cutler Rd. approx. 196th Street
NNW-2	East End North Canal Road
NNW-10	Bailes Road & U.S. #1
NW-1	Turkey Point Entrance Road
NW-5	Mowry Drive & 117th Avenue
NW-10	Newton Road, North of Coconut Palm Drive
WNW-2	Satellite School
WNW-10	Homestead Middle School
W-1	On-Site, North Side of Discharge Canal
W-5	Palm Drive & Tallahassee Road
W-9	Card Sound Road, 0.6 mile from U.S. #1
WSW-8	Card Sound Road, 3.4 miles from U.S. #1
SW-1	On-Site near Land Utilization Offices
SW-8	Card Sound Road, 5 miles from U.S. #1
SSW-5	On-Site, Southwest Corner of Cooling Canals
SSW-10	Card Sound Road, west side of Toll Plaza
S-5	On-Site, South East Corner of Cooling Canals
S-10	Card Sound Road at Steamboat Creek
SSE-1	Turtle Point
SSE-10	Ocean Reef
Control	
NNE-22	Natoma Substation, 2475 SW 16 Ct.

[a]The location name is the direction sector - approximate distance (miles)

ATTACHMENT A

PATHWAY: AIRBORNE
SAMPLES COLLECTED: RADIOIODINE AND PARTICULATES
SAMPLE COLLECTION FREQUENCY: WEEKLY

Location Name	Direction Sector	Approximate Distance (miles)	Description
T-51	NNW	2	Entrance Area to Biscayne National Park
T-57	NW	4	SW 107th Avenue at Mowry Canal
T-58	NW	1	Turkey Point Entrance Road
T-72	WSW	<1	Just before entrance to Land Utilization's access gate.
T-41	WNW	2	Satellite School, cement pole in school yard
Control:			
T-64	NNE	22	Natoma Substation , 2475 SW 16 Ct.

ATTACHMENT A

PATHWAY: WATERBORNE
SAMPLES COLLECTED: SURFACE WATER (OCEAN)
SAMPLE COLLECTION FREQUENCY: MONTHLY

Location Name	Direction Sector	Approximate Distance (miles)	Description
T-42	ENE	<1	Biscayne Bay at Turkey Point
T-81	S	6	Card Sound, near Mouth of Old Discharge Canal
Control:			
T-67	N, NNE	13-18	Near Biscayne Bay, Vicinity of Cutler Plant, North to Matheson Hammock Park

SAMPLES COLLECTED: SHORELINE SEDIMENT
SAMPLE COLLECTION FREQUENCY: SEMI-ANNUALLY

Location Name	Direction Sector	Approximate Distance (miles)	Description
T-42	ENE	<1	Biscayne Bay at Turkey Point
T-81	S	6	Card Sound, near Mouth of Old Discharge Canal
Control:			
T-67	N, NNE	13-18	Near Biscayne Bay, Vicinity of Cutler Plant, North to Matheson Hammock Park

ATTACHMENT A

PATHWAY: INGESTION
SAMPLES COLLECTED: CRUSTACEA AND FISH
SAMPLE COLLECTION FREQUENCY: SEMI-ANNUALLY

Location Name	Direction Sector	Approximate Distance (miles)	Description
T-81	S	6	Card Sound Vicinity of Turkey Point Facility
Control:			
T-67	N, NNE	13-18	Near Biscayne Bay, Vicinity of Cutler Plant, North to Matheson Hammock Park

SAMPLES COLLECTED: BROAD LEAF VEGETATION
SAMPLE COLLECTION FREQUENCY: MONTHLY

Location Name	Direction Sector	Approximate Distance (miles)	Description
T-40	W	3	South of Palm Dr. on S.W. 117th Street Extension
T-41	WNW	2	Palm Dr., West of Old Missile Site near Plant Site Boundary
Control:			
T-67	N, NNE	13-18	Near Biscayne Bay, Vicinity of Cutler Plant, North to Matheson Hammock Park

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ATTACHMENT B

RADIOLOGICAL SURVEILLANCE OF

FLORIDA POWER AND LIGHT COMPANY'S

TURKEY POINT SITE

2012

First Quarter, 2012

Second Quarter, 2012

Third Quarter, 2012

Fourth Quarter, 2012

TURKEY POINT SITE

Offsite Dose Calculation Manual Sampling

First Quarter, 2012

Sample Type	Collection Frequency	Number of Sample Locations	Number of Samples
1. Direct Radiation	Quarterly	22	22
2. Airborne			
2.a. Air Iodines	Weekly	6	78
2.b. Air Particulates	Weekly	6	78
3. Waterborne			
3.a. Surface Water	Monthly	3	9
3.b. Shoreline Sediment	Semiannually	3	3
4. Ingestion			
4.a. Fish and Invertebrates			
4.a.1. Crustacea	Semiannually	2	0
4.a.2. Fish	Semiannually	2	0
4.b. Broadleaf Vegetation	Monthly	3	9
			Total: 199

NOTE: Measurement results having magnitudes that are significantly above the background of the measurement system are reported as net values plus or minus a one-standard-deviation error term. Measurement results that are not significantly above background are reported as less than a Lower Limit of Detection (<LLD), which is an estimated upper limit (with at least 95% confidence) for the true activity in the sample.

The marine fauna listed in this report were collected in part, under Florida FWC SAL030.

1. DIRECT RADIATION - TLD's - (μR/hour)

Sample Site	Deployment 13-Dec-11 Collection 14-Mar-12
N-2	5.0 ± 0.1
N-7	4.3 ± 0.2
N-10	4.7 ± 0.3
NNW-2	4.10 ± 0.2
NNW-10	4.9 ± 0.4
NW-1	5.1 ± 0.3
NW-5	4.2 ± 0.2
NW-10	5.8 ± 0.2
WNW-10	5.3 ± 0.3
W-1	5.2 ± 0.1
W-5	4.4 ± 0.1
W-9	4.2 ± 0.3
WSW-8	4.5 ± 0.3
SW-1	4.0 ± 0.2
SW-8	3.9 ± 0.6
SSW-5	3.9 ± 0.3
SSW-10	4.3 ± 0.1
S-5	3.8 ± 0.3
S-10	4.4 ± 0.2
SSE-1	3.8 ± 0.3
SSE-10	8.6 ± 2.0
NNE-22	4.8 ± 0.2

2.a. IODINE-131 IN WEEKLY AIR CARTRIDGES - (pCi/m³)

Collection Date	T41	T51	T57	T58	T64	T72
04-Jan-12	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
09-Jan-12	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
17-Jan-12	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
24-Jan-12	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
01-Feb-12	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
07-Feb-12	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
21-Feb-12	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
21-Feb-12	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
29-Feb-12	<0.02	<0.02	<0.02	<0.02	<0.03	<0.02
07-Mar-12	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
13-Mar-12	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
20-Mar-12	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
27-Mar-12	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02

2.b.1. AIR PARTICULATES - GROSS BETA - (pCi/m³)

Collection Date	T41	T51	T57	T58	T64	T72
04-Jan-12	0.020 ± 0.002	0.018 ± 0.002	0.019 ± 0.002	0.021 ± 0.002	0.019 ± 0.002	0.019 ± 0.002
09-Jan-12	0.021 ± 0.003	0.024 ± 0.003	0.021 ± 0.003	0.018 ± 0.003	0.029 ± 0.003	0.023 ± 0.003
17-Jan-12	0.021 ± 0.002	0.017 ± 0.002	0.020 ± 0.002	0.017 ± 0.002	0.016 ± 0.002	0.021 ± 0.002
24-Jan-12	0.015 ± 0.002	0.014 ± 0.002	0.015 ± 0.002	0.014 ± 0.002	0.009 ± 0.002	0.013 ± 0.002
01-Feb-12	0.014 ± 0.002	0.014 ± 0.002	0.013 ± 0.002	0.012 ± 0.002	0.013 ± 0.002	0.015 ± 0.002
07-Feb-12	0.006 ± 0.002	0.011 ± 0.002	0.010 ± 0.002	0.022 ± 0.003	0.015 ± 0.002	0.011 ± 0.002
21-Feb-12	0.012 ± 0.002	0.013 ± 0.002	0.009 ± 0.002	0.016 ± 0.002	0.011 ± 0.002	0.011 ± 0.002
21-Feb-12	0.012 ± 0.002	0.013 ± 0.002	0.009 ± 0.002	0.016 ± 0.002	0.011 ± 0.002	0.011 ± 0.002
29-Feb-12	0.015 ± 0.002	0.014 ± 0.002	0.015 ± 0.002	0.011 ± 0.002	0.015 ± 0.003	0.014 ± 0.002
07-Mar-12	0.013 ± 0.002	0.015 ± 0.002	0.013 ± 0.002	0.011 ± 0.002	0.009 ± 0.002	0.013 ± 0.002
13-Mar-12	0.007 ± 0.002	0.006 ± 0.002	0.009 ± 0.002	0.011 ± 0.002	0.009 ± 0.002	0.010 ± 0.002
20-Mar-12	0.009 ± 0.002	0.009 ± 0.002	0.010 ± 0.002	0.008 ± 0.002	0.009 ± 0.002	0.007 ± 0.002
27-Mar-12	0.015 ± 0.002	0.018 ± 0.002	0.015 ± 0.002	0.015 ± 0.002	0.015 ± 0.002	0.017 ± 0.002
Average:	0.014 ± 0.001	0.014 ± 0.001	0.014 ± 0.001	0.015 ± 0.001	0.014 ± 0.001	0.014 ± 0.001

2.b.2. AIR PARTICULATES - GAMMA ANALYSIS OF QUARTERLY COMPOSITES - (pCi/m³)

Sample Site	Be-7	K-40	Cs-134	Cs-137	Pb-210
T41	0.1131 ± 0.0072	<0.0196	<0.0019	<0.0014	0.0113 ± 0.0020
T51	0.1788 ± 0.0130	<0.0294	<0.0020	<0.0015	<0.0837
T57	0.1083 ± 0.0071	<0.0202	<0.0019	<0.0014	0.0116 ± 0.0019
T58	0.2140 ± 0.0146	<0.0283	<0.0019	<0.0016	<0.0660
T64	0.1148 ± 0.0073	<0.0172	<0.0018	<0.0014	0.0125 ± 0.0021
T72	0.1721 ± 0.0129	<0.0238	<0.0016	<0.0009	0.0215 ± 0.0040

3.a. SURFACE WATER - (pCi/L)

Sample Site	Collection Date	H-3	K-40	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Zr-95 Nb-95 (A)	I-131	Cs-134	Cs-137	Ba-140 La-140 (B)
T42	24-Jan-12	<152	357 ± 42	<5	<4	<9	<7	<13	<9	<5	<7	<7	<12
	22-Feb-12	<146	299 ± 21	<2	<2	<5	<3	<6	<4	<3	<3	<3	<5
	14-Mar-12	<141	412 ± 33	<3	<3	<7	<5	<7	<5	<4	<5	<4	<6
T67	24-Jan-12	<152	178 ± 21	<4	<4	<7	<5	<6	<6	<5	<5	<4	<8
	21-Feb-12	<147	166 ± 24	<4	<4	<11	<8	<13	<9	<7	<6	<6	<10
	12-Mar-12	<141	35 ± 8	<4	<4	<8	<4	<8	<7	<5	<5	<5	<8
T81	24-Jan-12	<152	399 ± 34	<4	<3	<8	<4	<8	<7	<5	<5	<5	<8
	21-Feb-12	<147	422 ± 37	<3	<4	<8	<3	<8	<8	<6	<5	<5	<7
	13-Mar-12	95 ± 45	399 ± 32	<3	<4	<7	<5	<8	<7	<5	<4	<3	<7

(A) - These tabulated LLD values for Zr/Nb-95 are the higher of the individual parent or daughter LLD's.

(B) - These tabulated LLD values are for Ba-140, either based on direct measurement of Ba-140 or based on ingrowth of La-140, whichever method yields the greater sensitivity for a given sample.

3.b. SHORELINE SEDIMENT - (pCi/kg, dry weight)

Sample Site	Collection Date	Be-7	K-40	Co-58	Co-60	Cs-134	Cs-137	Pb-210	Ra-226	Th-232	U-235	U-238
T42	24-Jan-12	<131	103 ± 54	<11	<16	<14	<14	<2071	939 ± 134	<59	<96	<583
T67	24-Jan-12	231 ± 57	360 ± 57	<10	<17	<14	24 ± 6	<2104	732 ± 146	<61	<89	<529
T81	24-Jan-12	<91	393 ± 60	<10	<9	<11	<10	1232 ± 231	1821 ± 174	<46	<99	503 ± 183

4.a.1. CRUSTACEA - Mixed Species - (pCi/kg, wet weight)

Sample Site	Collection Date	K-40	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Cs-134	Cs-137	Ra-226	Ra-228
T67	This sample to be collected.										
T81	This sample to be collected.										

4.a.2. FISH - Mixed Species - (pCi/kg, wet weight)

Sample Site	Collection Date	K-40	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Cs-134	Cs-137	Ra-226	Ra-228
T67	This sample to be collected.										
T81	This sample to be collected.										

4.b. BROADLEAF VEGETATION - Brazilian Pepper - (pCi/kg, wet weight)

Sample Site	Collection Date	Be-7	K-40	I-131	Cs-134	Cs-137	Pb-210	Ra-226	Ra-228
T40	24-Jan-12	913 ± 86	2623 ± 217	<18	<12	28 ± 3	<286	<224	<45
	21-Feb-12	1539 ± 97	4571 ± 204	<22	<14	32 ± 8	<1714	<277	<65
	14-Mar-12	2090 ± 102	2649 ± 172	<21	<16	113 ± 12	<1782	<332	<60
T41	24-Jan-12	743 ± 84	4456 ± 221	<27	<21	<22	<2072	344 ± 125	<70
	21-Feb-12	1376 ± 103	5200 ± 223	<24	<14	22 ± 10	<1625	294 ± 116	<74
	14-Mar-12	1879 ± 78	2074 ± 109	<20	<13	196 ± 9	<1088	<252	<38
T67	24-Jan-12	1027 ± 101	4687 ± 227	<26	<21	24 ± 9	<1812	<321	<69
	21-Feb-12	752 ± 31	3073 ± 189	<14	<10	<9	<202	<163	<32
	12-Mar-12	1169 ± 91	4409 ± 210	<27	<16	<19	<1823	<317	<76

TURKEY POINT SITE

Offsite Dose Calculation Manual Sampling

Second Quarter, 2012

Sample Type	Collection Frequency	Locations Sampled	Number of Samples
1. Direct Radiation	Quarterly	22	21
2. Airborne			
2.a. Air Iodines	Weekly	6	77
2.b. Air Particulates	Weekly	6	77
3. Waterborne			
3.a. Surface Water	Monthly	3	9
3.b. Shoreline Sediment	Semiannually	3	0
4. Ingestion			
4.a. Fish and Invertebrates			
4.a.1. Crustacea	Semiannually	2	0
4.a.2. Fish	Semiannually	2	2
4.b. Broadleaf Vegetation	Monthly	3	9
			Total: 195

NOTE: Measurement results having magnitudes that are significantly above the background of the measurement system are reported as net values plus or minus a one-standard-deviation error term. Measurement results that are not significantly above background are reported as less than a Lower Limit of Detection (<LLD), which is an estimated upper limit (with at least 95% confidence) for the true activity in the sample.

The marine fauna listed in this report were collected in part, under Florida FWC SAL030.

1. DIRECT RADIATION - TLD's - (μR/hour)

Sample Site	Deployment 14-Mar-12 Collection 19-June-12
N-2	4.74 ± 0.50
N-7	3.69 ± 0.07
N-10	4.25 ± 0.25
NNW-2	3.48 ± 0.04
NNW-10	4.21 ± 0.33
NW-1	4.60 ± 0.30
NW-5	3.84 ± 0.18
NW-10	5.19 ± 0.20
WNW-10	4.70 ± 0.31
W-1	4.98 ± 0.45
W-5	3.96 ± 0.34
W-9	3.87 ± 0.26
WSW-8	4.37 ± 0.14
SW-1	3.56 ± 0.24
SW-8	3.57 ± 0.10
SSW-5	3.53 ± 0.14
SSW-10	3.93 ± 0.29
S-5	3.47 ± 0.15
S-10	4.21 ± 0.34
SSE-1	(A)
SSE-10	4.21 ± 0.28
NNE-22	4.55 ± 0.16

(A) TLD missing upon collection.

2.a. IODINE-131 IN WEEKLY AIR CARTRIDGES - (pCi/m³)

Collection Date	T41	T51	T57	T58	T64	T72
03-Apr-12	<0.02	<0.03	<0.02	<0.04	<0.02	<0.03
11-Apr-12	<0.02	<0.02	<0.02	<0.03	<0.02	<0.02
18-Apr-12	<0.02	<0.02	<0.02	<0.03	<0.02	<0.02
25-Apr-12	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
02-May-12	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
09-May-12	<0.03	<0.02	<0.02	<0.02	<0.04	<0.03
15-May-12	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
21-May-12	<0.05(A)	<0.02	<0.02	<0.02	<0.01	<0.02
30-May-12	(B)	<0.01	<0.01	<0.01	<0.02	<0.01
06-Jun-12	<0.01	<0.02	<0.01	<0.02	<0.02	<0.02
12-Jun-12	<0.03	<0.03	<0.03	<0.03	<0.02	<0.03
20-Jun-12	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
26-Jun-12	<0.02	<0.02	<0.02	<0.03	<0.02	<0.02

(A) Pump possibly failing. Estimated run time 13.2 out of 142.4 hours.
(B) Pump failed; no collection or run time recorded.

2.b.1 AIR PARTICULATES - GROSS BETA - (pCi/m³)

Collection Date	T41	T51	T57	T58	T64	T72
03-Apr-12	0.019 ± 0.002	0.020 ± 0.002	0.019 ± 0.002	0.018 ± 0.005	0.016 ± 0.002	0.015 ± 0.002
11-Apr-12	0.018 ± 0.002	0.018 ± 0.002	0.013 ± 0.002	0.022 ± 0.004	0.016 ± 0.002	0.017 ± 0.002
18-Apr-12	0.025 ± 0.003	0.026 ± 0.003	0.022 ± 0.002	0.028 ± 0.003	0.020 ± 0.002	0.017 ± 0.002
25-Apr-12	0.015 ± 0.002	0.018 ± 0.002	0.015 ± 0.002	0.017 ± 0.002	0.014 ± 0.002	0.014 ± 0.002
02-May-12	0.010 ± 0.002	0.015 ± 0.002	0.010 ± 0.002	0.014 ± 0.002	0.018 ± 0.002	0.012 ± 0.002
09-May-12	0.017 ± 0.002	0.014 ± 0.002	0.020 ± 0.002	0.009 ± 0.002	0.016 ± 0.003	0.018 ± 0.002
15-May-12	0.017 ± 0.002	0.014 ± 0.002	0.012 ± 0.002	0.019 ± 0.002	0.019 ± 0.002	0.017 ± 0.002
21-May-12	<0.071(A)	0.011 ± 0.002	0.012 ± 0.002	0.016 ± 0.002	0.010 ± 0.002	0.014 ± 0.002
30-May-12	(B)	0.010 ± 0.002	0.007 ± 0.001	0.007 ± 0.001	0.010 ± 0.002	0.008 ± 0.001
06-Jun-12	0.008 ± 0.002	0.007 ± 0.002	0.014 ± 0.002	0.009 ± 0.002	(C)	0.015 ± 0.002
12-Jun-12	0.015 ± 0.002	0.018 ± 0.002	0.017 ± 0.002	0.017 ± 0.002	0.010 ± 0.002	0.017 ± 0.002
20-Jun-12	0.010 ± 0.002	0.009 ± 0.002	0.009 ± 0.002	0.010 ± 0.002	0.008 ± 0.002	0.010 ± 0.002
26-Jun-12	0.017 ± 0.003	0.013 ± 0.002	0.020 ± 0.003	0.013 ± 0.003	0.013 ± 0.002	0.014 ± 0.002
Average:	<0.020	0.015 ± 0.001	0.015 ± 0.001	0.015 ± 0.001	0.014 ± 0.001	0.015 ± 0.001

(A) Pump possibly failing. Estimated run time 13.2 out of 142.4 hours.
(B) Pump failed; no collection or run time recorded.
(C) The magnetic filter funnel was on the ground at time of collection; particulate filter missing.

2.b.2 AIR PARTICULATES - GAMMA ANALYSIS OF QUARTERLY COMPOSITES - (pCi/m³)

Sample Site	Be-7	K-40	Cs-134	Cs-137	Pb-210
T41	0.1379 ± 0.0098	<0.0212	<0.0017	<0.0016	0.0093 ± 0.0020
T51	0.1275 ± 0.0139	<0.0193	<0.0015	<0.0013	<0.0729
T57	0.1299 ± 0.0131	<0.0195	<0.0011	<0.0012	<0.0735
T58	0.1247 ± 0.0092	<0.0218	<0.0016	<0.0013	0.0121 ± 0.0021
T64	0.1199 ± 0.0116	<0.0232	<0.0015	<0.0011	<0.0772
T72	0.0968 ± 0.0121	<0.0245	<0.0014	<0.0011	<0.0760

3.a. SURFACE WATER - (pCi/L)

Sample Site	Collection Date	H-3	K-40	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Zr-95 Nb-95 (A)	I-131	Cs-134	Cs-137	Ba-140 La-140 (B)
T42	24-Apr-12	<138	478 ± 36	<3	<4	<7	<4	<8	<8	<10	<5	<4	<7
	22-May-12	<143	342 ± 30	<3	<3	<7	<5	<7	<7	<5	<4	<3	<6
	20-Jun-12	<143	147 ± 15	<3	<3	<8	<4	<8	<5	<4	<4	<4	<7
T67	24-Apr-12	<138	<52	<3	<3	<7	<4	<9	<5	<7	<3	<3	<5
	21-May-12	<143	29 ± 8	<3	<4	<7	<3	<8	<6	<5	<4	<3	<6
	18-Jun-12	<143	46 ± 9	<3	<3	<6	<3	<8	<5	<4	<4	<4	<5
T81	24-Apr-12	<138	427 ± 37	<4	<4	<8	<5	<9	<8	<9	<5	<5	<5
	21-May-12	<143	375 ± 40	<5	<5	<10	<8	<13	<9	<7	<5	<6	<7
	18-Jun-12	<143	327 ± 29	<3	<4	<7	<4	<9	<7	<6	<5	<4	<6

(A) - These tabulated LLD values for Zr/Nb-95 are the higher of the individual parent or daughter LLD's.

(B) - These tabulated LLD values are for Ba-140, either based on direct measurement of Ba-140 or based on ingrowth of La-140, whichever method yields the greater sensitivity for a given sample.

3.b. SHORELINE SEDIMENT - (pCi/kg, dry weight)

Sample Site	Collection Date	Be-7	K-40	Co-58	Co-60	Cs-134	Cs-137	Pb-210	Ra-226	Th-232
These samples were previously collected.										

4.a.1. CRUSTACEA - Blue Crab - (pCi/kg, wet weight)

Sample Site	Collection Date	K-40	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Cs-134	Cs-137	Ra-226	Ra-228
T67	There was no sample available during the quarter.										
T81	There was no sample available during the quarter.										

4.a.2. FISH - Mixed Species - (pCi/kg, wet weight)

Sample Site	Collection Date	K-40	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Cs-134	Cs-137	Ra-226	Ra-228
T67	18-Jun-12	2879 ± 436	<59	<52	<134	<77	<96	<59	<58	<1232	<268
T81	18-Jun-12	2243 ± 196	<20	<16	<43	<26	<54	<25	<24	<397	<94

4.b. BROADLEAF VEGETATION - Brazilian Pepper - (pCi/kg, wet weight)

Sample Site	Collection Date	Be-7	K-40	I-131	Cs-134	Cs-137	Pb-210	Pb-212	Ra-226	Ra-228
T40	24-Apr-12	1163 ± 43	3917 ± 229	<20	<10	19 ± 2	349 ± 35	<17	<184	<40
	22-May-12	1113 ± 93	4587 ± 224	<28	<20	33 ± 10	<1774	<84	<339	<64
	20-Jun-12	826 ± 66	3767 ± 150	<17	<11	37 ± 7	<888	<85	<246	<47
T41	24-Apr-12	1915 ± 66	2365 ± 76	<17	<8	184 ± 7	<722	<60	<179	<25
	22-May-12	1180 ± 103	4583 ± 234	<29	<18	29 ± 9	<1916	<97	<343	<78
	20-Jun-12	1328 ± 90	1905 ± 139	<19	<13	102 ± 9	<1579	<81	<257	<53
T67	24-Apr-12	992 ± 48	4961 ± 190	<13	<7	<7	234 ± 24	<12	<131	<28
	21-May-12	1288 ± 96	3047 ± 207	<20	<12	<11	<256	<19	<219	<41
	18-Jun-12	1034 ± 89	6125 ± 228	<20	<18	<14	<1659	<84	<272	<63

TURKEY POINT SITE

Offsite Dose Calculation Manual Sampling

Third Quarter, 2012

Sample Type	Collection Frequency	Locations Sampled	Number of Samples
1. Direct Radiation	Quarterly	22	22
2. Airborne			
2.a. Air Iodines	Weekly	6	78
2.b. Air Particulates	Weekly	6	78
3. Waterborne			
3.a. Surface Water	Monthly	3	9
3.b. Shoreline Sediment	Semiannually	3	3
4. Ingestion			
4.a. Fish and Invertebrates			
4.a.1. Crustacea	Semiannually	2	0
4.a.2. Fish	Semiannually	2	2
4.b. Broadleaf Vegetation	Monthly	3	9
			Total: 201

NOTE: Measurement results having magnitudes that are significantly above the background of the measurement system are reported as net values plus or minus a one-standard-deviation error term. Measurement results that are not significantly above background are reported as less than a Lower Limit of Detection (<LLD), which is an estimated upper limit (with at least 95% confidence) for the true activity in the sample.

The marine fauna listed in this report were collected in part, under Florida FWC SAL030.

1. DIRECT RADIATION - TLD's - (μR/hour)

Sample Site	Deployment Collection 19-June-12 12-Sep-12
N-2	5.24 ± 0.23
N-7	4.36 ± 0.15
N-10	4.73 ± 0.28
NNW-2	4.02 ± 0.12
NNW-10	4.88 ± 0.11
NW-1	5.05 ± 0.49
NW-5	4.19 ± 0.02
NW-10	5.54 ± 0.20
WNW-10	5.07 ± 0.55
W-1	5.36± 0.48
W-5	4.33 ± 0.52
W-9	4.05 ± 0.10

Sample Site	Deployment Collection 19-June-12 12-Sep-12
WSW-8	4.69 ± 0.15
SW-1	3.99 ± 0.04
SW-8	4.11 ± 0.42
SSW-5	3.99 ± 0.50
SSW-10	4.32 ± 0.29
S-5	3.89 ± 0.28
S-10	4.54 ± 0.23
SSE-1	3.84 ± 0.12
SSE-10	4.41 ± 0.21
NNE-22	4.79 ± 0.15

2.a. IODINE-131 IN WEEKLY AIR CARTRIDGES - (pCi/m³)

Collection Date	T41	T51	T57	T58	T64	T72
02-Jul-12	<0.03	<0.03	<0.03	<0.02	<0.03	<0.03
09-Jul-12	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
17-Jul-12	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
24-Jul-12	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
31-Jul-12	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
08-Aug-12	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
13-Aug-12	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
20-Aug-12	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
29-Aug-12	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
05-Sep-12	<0.02	<0.02	<0.02	<0.02	<0.03	<0.02
12-Sep-12	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
19-Sep-12	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
24-Sep-12	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02

2.b.1 AIR PARTICULATES - GROSS BETA - (pCi/m³)

Collection Date	T41	T51	T57	T58	T64	T72
02-Jul-12	0.015 ± 0.002	0.015 ± 0.002	0.020 ± 0.003	0.018 ± 0.002	0.017 ± 0.002	0.021 ± 0.002
09-Jul-12	0.013 ± 0.002	0.010 ± 0.002	0.013 ± 0.002	0.014 ± 0.002	0.014 ± 0.002	<0.006
17-Jul-12	0.004 ± 0.001	0.004 ± 0.001	0.005 ± 0.001	0.015 ± 0.002	0.015 ± 0.002	0.018 ± 0.002
24-Jul-12	0.014 ± 0.002	0.015 ± 0.002	0.011 ± 0.002	0.014 ± 0.002	0.013 ± 0.002	0.011 ± 0.002
31-Jul-12	0.028 ± 0.003	0.027 ± 0.003	0.023 ± 0.002	0.024 ± 0.002	0.027 ± 0.003	0.034 ± 0.003
08-Aug-12	0.014 ± 0.002	0.015 ± 0.002	0.013 ± 0.002	0.017 ± 0.002	0.016 ± 0.002	0.012 ± 0.002
13-Aug-12	0.008 ± 0.002	0.010 ± 0.003	0.008 ± 0.002	0.009 ± 0.002	<0.010	0.009 ± 0.003
20-Aug-12	0.018 ± 0.002	0.019 ± 0.002	0.018 ± 0.002	0.020 ± 0.002	0.021 ± 0.002	0.020 ± 0.002
29-Aug-12	0.018 ± 0.002	0.017 ± 0.002	0.017 ± 0.002	0.015 ± 0.002	0.012 ± 0.002	0.017 ± 0.002
05-Sep-12	0.016 ± 0.002	0.016 ± 0.002	0.015 ± 0.002	0.016 ± 0.002	0.019 ± 0.003	0.015 ± 0.002
12-Sep-12	0.009 ± 0.002	0.012 ± 0.002	0.013 ± 0.002	0.014 ± 0.002	0.017 ± 0.002	0.014 ± 0.002
19-Sep-12	0.009 ± 0.002	0.012 ± 0.002	0.013 ± 0.002	0.010 ± 0.002	0.009 ± 0.002	0.011 ± 0.002
24-Sep-12	0.006 ± 0.002	<0.010	0.009 ± 0.002	0.005 ± 0.002	0.011 ± 0.002	0.008 ± 0.002
Average:	0.013 ± 0.001	<0.014	0.014 ± 0.001	0.015 ± 0.001	<0.015	<0.015

2.b.2 AIR PARTICULATES - GAMMA ANALYSIS OF QUARTERLY COMPOSITES - (pCi/m³)

Sample Site	Be-7	K-40	Cs-134	Cs-137	Pb-210
T41	0.0920 ± 0.0080	<0.0146	<0.0016	<0.0012	0.0099 ± 0.0023
T51	0.1078 ± 0.0086	<0.0198	<0.0017	<0.0014	0.0160 ± 0.0028
T57	0.0990 ± 0.0096	<0.0207	<0.0011	<0.0008	0.0137 ± 0.0029
T58	0.1078 ± 0.0105	<0.0229	<0.0011	<0.0009	0.0176 ± 0.0038
T64	0.1118 ± 0.0103	<0.0196	<0.0010	<0.0011	0.0169 ± 0.0036
T72	0.1124 ± 0.0088	<0.0186	<0.0016	<0.0013	0.0150 ± 0.0028

3.a. SURFACE WATER - (pCi/L)

Sample Site	Collection Date	H-3	K-40	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Zr-95 Nb-95 (A)	I-131	Cs-134	Cs-137	Ba-140 La-140 (B)
T42	24-Jul-12	<143	195 ± 15	<3	<3	<7	<4	<8	<5	<4	<3	<3	<7
	22-Aug-12	<131	251 ± 52	<3	<3	<7	<4	<7	<6	<4	<3	<3	<7
	12-Sep-12	<137	329 ± 45	<6	<5	<13	<7	<11	<9	<7	<7	<5	<13
T67	23-Jul-12	<143	<50	<3	<3	<7	<3	<6	<5	<5	<4	<3	<5
	21-Aug-12	<131	<64	<4	<4	<7	<4	<6	<6	<5	<5	<4	<6
	12-Sep-12	<137	<42	<4	<3	<6	<4	<9	<5	<4	<4	<3	<8
T81	23-Jul-12	106 ± 46	213 ± 41	<5	<5	<9	<7	<14	<7	<7	<7	<5	<13
	20-Aug-12	129 ± 43	328 ± 27	<3	<4	<7	<4	<7	<6	<4	<4	<4	<7
	12-Sep-12	88 ± 25	340 ± 32	<4	<3	<7	<4	<7	<5	<5	<4	<4	<8

(A) - These tabulated LLD values for Zr/Nb-95 are the higher of the individual parent or daughter LLD's.

(B) - These tabulated LLD values are for Ba-140, either based on direct measurement of Ba-140 or based on ingrowth of La-140, whichever method yields the greater sensitivity for a given sample.

3.b. SHORELINE SEDIMENT - (pCi/kg, dry weight)

Sample Site	Collection Date	Be-7	K-40	Co-58	Co-60	Cs-134	Cs-137	Pb-210	Ra-226	Th-232	U-235	U-238
T42	24-Jul-12	265 ± 56	213 ± 50	<9	<9	<11	<9	1931 ± 308	1473 ± 123	<45	<86	<377
T67	25-Jul-12	91 ± 13	154 ± 23	<8	<8	<9	<9	330 ± 56	243 ± 54	<41	<7	183 ± 18
T81	23-Jul-12	192 ± 20	150 ± 24	<12	<11	<12	<12	751 ± 110	643 ± 151	<44	45 ± 7	555 ± 30

4.a.1. CRUSTACEA - Blue Crab - (pCi/kg, wet weight)

Sample Site	Collection Date	K-40	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Cs-134	Cs-137	Ra-226	Ra-228
T67	This sample not yet collected.										
T81	This sample not yet collected.										

4.a.2. FISH - Mixed Species - (pCi/kg, wet weight)

Sample Site	Collection Date	K-40	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Cs-134	Cs-137	Ra-226	Ra-228
T67	12-Sep-12	1872 ± 135	<28	<30	<52	<26	<60	<31	<26	<484	<103
T81	13-Sep-12	2369 ± 490	<25	<26	<60	<29	<63	<29	<28	<500	<106

4.b. BROADLEAF VEGETATION - Brazilian Pepper - (pCi/kg, wet weight)

Sample Site	Collection Date	Be-7	K-40	I-131	Cs-134	Cs-137	Pb-210	Pb-212	Ra-226	Ra-228
T40	24-Jul-12	2209 ± 122	4973 ± 230	<25	<20	54 ± 8	<2390	<127	<387	<76
	20-Aug-12	1744 ± 103	4780 ± 212	<27	<18	27 ± 8	<1954	<105	281 ± 129	<71
	12-Sep-12	1795 ± 109	4209 ± 215	<21	<18	<23	<1974	<92	<340	<71
T41	24-Jul-12	1741 ± 93	3439 ± 164	<23	<14	268 ± 13	<1668	<80	<286	<53
	20-Aug-12	1126 ± 61	2794 ± 110	<20	<12	250 ± 11	<1391	<66	300 ± 113	<41
	12-Sep-12	2077 ± 89	4857 ± 164	<16	<11	<15	1180 ± 319	<80	<261	<35
T67	23-Jul-12	1576 ± 90	4705 ± 167	<23	<11	11 ± 4	<1073	<83	<268	<48
	21-Aug-12	1523 ± 93	4579 ± 168	<18	<10	<10	<999	<88	<244	<41
	12-Sep-12	1947 ± 90	3429 ± 164	<17	<16	<13	<1726	<86	<274	<56

TURKEY POINT SITE

Offsite Dose Calculation Manual Sampling

Fourth Quarter, 2012

Sample Type	Collection Frequency	Locations Sampled	Number of Samples
1. Direct Radiation	Quarterly	22	22
2. Airborne			
2.a. Air Iodines	Weekly	6	78
2.b. Air Particulates	Weekly	6	78
3. Waterborne			
3.a. Surface Water	Monthly	3	9
3.b. Shoreline Sediment	Semiannually	3	0
4. Ingestion			
4.a. Fish and Invertebrates			
4.a.1. Crustacea	Semiannually	2	0
4.a.2. Fish	Semiannually	2	0
4.b. Broadleaf Vegetation	Monthly	3	9
			Total: 196

NOTE: Measurement results having magnitudes that are significantly above the background of the measurement system are reported as net values plus or minus a one-standard-deviation error term. Measurement results that are not significantly above background are reported as less than a Lower Limit of Detection (<LLD), which is an estimated upper limit (with at least 95% confidence) for the true activity in the sample.

The marine fauna listed in this report were collected in part, under Florida FWC SAL030.

1. DIRECT RADIATION - TLD's - (μR/hour)

Sample Site	Deployment Collection 12-Sep-12 11-Dec-12
N-2	4.66 ± 0.19
N-7	3.79 ± 0.18
N-10	4.13 ± 0.46
NNW-2	3.49 ± 0.12
NNW-10	4.31 ± 0.32
NW-1	4.49 ± 0.24
NW-5	3.67 ± 0.16
NW-10	5.16 ± 0.30
WNW-10	4.66 ± 0.09
W-1	4.68 ± 0.53
W-5	3.91 ± 0.33
W-9	3.74 ± 0.10
WSW-8	3.75 ± 0.30
SW-1	3.54 ± 0.14
SW-8	3.22 ± 0.29
SSW-5	3.37 ± 0.17
SSW-10	3.59 ± 0.22
S-5	3.35 ± 0.26
S-10	4.21 ± 0.21
SSE-1	3.22 ± 0.33
SSE-10	3.99 ± 0.19
NNE-22	4.31 ± 0.32

2.a. IODINE-131 IN WEEKLY AIR CARTRIDGES - (pCi/m³)

Collection Date	T41	T51	T57	T58	T64	T72
02-Oct-12	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
10-Oct-12	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
15-Oct-12	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
22-Oct-12	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
31-Oct-12	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
07-Nov-12	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
13-Nov-12	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
19-Nov-12	<0.03	<0.02	<0.02	<0.02	<0.03	<0.02
28-Nov-12	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
05-Dec-12	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
11-Dec-12	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
19-Dec-12	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
26-Dec-12	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03

2.b.1 AIR PARTICULATES - GROSS BETA - (pCi/m³)

Collection Date	T41	T51	T57	T58	T64	T72
02-Oct-12	0.010 ± 0.002	0.012 ± 0.002	0.013 ± 0.002	0.016 ± 0.002	0.010 ± 0.002	0.012 ± 0.002
10-Oct-12	0.010 ± 0.002	0.006 ± 0.001	0.013 ± 0.002	0.011 ± 0.002	0.007 ± 0.002	0.008 ± 0.002
15-Oct-12	0.023 ± 0.003	0.019 ± 0.003	0.023 ± 0.003	0.020 ± 0.003	0.024 ± 0.003	0.014 ± 0.003
22-Oct-12	0.011 ± 0.002	0.010 ± 0.002	0.014 ± 0.002	0.014 ± 0.002	0.013 ± 0.002	0.012 ± 0.002
31-Oct-12	0.007 ± 0.001	0.007 ± 0.001	0.017 ± 0.002	0.018 ± 0.002	0.021 ± 0.002	0.018 ± 0.002
07-Nov-12	0.009 ± 0.002	0.011 ± 0.002	0.026 ± 0.003	0.026 ± 0.003	0.024 ± 0.002	0.029 ± 0.003
13-Nov-12	0.014 ± 0.002	0.013 ± 0.002	0.030 ± 0.003	0.030 ± 0.003	0.028 ± 0.003	0.031 ± 0.003
19-Nov-12	0.012 ± 0.002	0.008 ± 0.002	0.008 ± 0.002	0.010 ± 0.002	0.008 ± 0.002	0.012 ± 0.002
28-Nov-12	0.029 ± 0.002	0.024 ± 0.002	0.026 ± 0.002	0.028 ± 0.002	0.031 ± 0.002	0.028 ± 0.002
05-Dec-12	0.023 ± 0.002	0.018 ± 0.002	0.015 ± 0.002	0.017 ± 0.002	0.013 ± 0.002	0.016 ± 0.002
11-Dec-12	0.006 ± 0.002	0.007 ± 0.002	0.008 ± 0.002	0.005 ± 0.002	0.004 ± 0.001	0.007 ± 0.002
19-Dec-12	0.006 ± 0.002	<0.006	<0.006	0.005 ± 0.001	0.009 ± 0.002	0.004 ± 0.001
26-Dec-12	0.014 ± 0.002	0.017 ± 0.002	0.019 ± 0.002	0.018 ± 0.002	0.014 ± 0.002	0.021 ± 0.002
Average:	0.013 ± 0.001	<0.012	<0.017	0.017 ± 0.001	0.016 ± 0.001	0.016 ± 0.001

2.b.2 AIR PARTICULATES - GAMMA ANALYSIS OF QUARTERLY COMPOSITES - (pCi/m³)

Sample Site	Be-7	K-40	Cs-134	Cs-137	Pb-210
T41	0.1358 ± 0.0089	<0.0152	<0.0011	<0.0010	0.0106 ± 0.0018
T51	0.1231 ± 0.0084	<0.0157	<0.0012	<0.0010	<0.0107
T57	0.1165 ± 0.0135	<0.0190	<0.0016	<0.0013	0.0204 ± 0.0047
T58	0.1462 ± 0.0144	<0.0203	<0.0011	<0.0013	0.0291 ± 0.0049
T64	0.1139 ± 0.0220	<0.0153	<0.0011	<0.0010	<0.0109
T72	0.1258 ± 0.0224	<0.0151	<0.0014	<0.0012	<0.0112

3.a. SURFACE WATER - (pCi/L)

Sample Site	Collection Date	H-3	K-40	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Zr-95 Nb-95 (A)	I-131	Cs-134	Cs-137	Ba-140 La-140 (B)
T42	16-Oct-12	<151	188 ± 31	<3	<4	<7	<3	<6	<6	<5	<4	<4	<6
	14-Nov-12	<137	136 ± 25	<2	<2	<5	<2	<5	<4	<3	<3	<2	<4
	12-Dec-12	<138	254 ± 19	<3	<3	<6	<4	<6	<5	<3	<3	<3	<6
T67	15-Oct-12	<137	63 ± 6	<2	<2	<4	<2	<4	<3	<2	<2	<2	<3
	14-Nov-12	<137	87 ± 11	<2	<2	<5	<3	<5	<4	<3	<2	<2	<5
	11-Dec-12	<138	43 ± 9	<3	<3	<6	<4	<9	<6	<4	<3	<4	<6
T81	15-Oct-12	124 ± 45	305 ± 30	<3	<4	<7	<4	<6	<7	<5	<3	<4	<6
	14-Nov-12	<137	227 ± 80	<2	<3	<5	<3	<5	<4	<3	<2	<3	<4
	10-Dec-12	<138	371 ± 32	<3	<3	<7	<4	<7	<6	<6	<4	<4	<5

(A) - These tabulated LLD values for Zr/Nb-95 are the higher of the individual parent or daughter LLD's.

(B) - These tabulated LLD values are for Ba-140, either based on direct measurement of Ba-140 or based on ingrowth of La-140, whichever method yields the greater sensitivity for a given sample.

3.b. SHORELINE SEDIMENT - (pCi/kg, dry weight)

Sample Site	Collection Date	Be-7	K-40	Co-58	Co-60	Cs-134	Cs-137	Pb-210	Ra-226	Th-232	Others:
T42	This sample was previously collected.										
T67	This sample was previously collected.										
T81	This sample was previously collected.										

4.a.1. CRUSTACEA - Blue Crab - (pCi/kg, wet weight)

Sample Site	Collection Date	K-40	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Cs-134	Cs-137	Ra-226	Ra-228
T67	There was no sample available this quarter.										
T81	There was no sample available this quarter.										

4.a.2. FISH - Mixed Species - (pCi/kg, wet weight)

Sample Site	Collection Date	K-40	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Cs-134	Cs-137	Ra-226	Ra-228
T67	This sample was previously collected.										
T81	This sample was previously collected.										

4.b. BROADLEAF VEGETATION - Brazilian Pepper - (pCi/kg, wet weight)

Sample Site	Collection Date	Be-7	K-40	I-131	Cs-134	Cs-137	Pb-210	Pb-212	Ra-226	Ra-228
T40	15-Oct-12	1231 ± 47	3707 ± 222	<22	<12	17 ± 8	<255	<18	<220	<42
	14-Nov-12	1363 ± 79	4340 ± 161	<13	<12	19 ± 5	<1003	<90	<262	<45
	12-Dec-12	1653 ± 114	5462 ± 182	<25	<14	62 ± 6	<1204	<98	<300	<47
T41	15-Oct-12	1926 ± 105	5364 ± 185	<29	<13	29 ± 7	878 ± 358	<97	<298	<49
	14-Nov-12	1615 ± 54	2809 ± 198	<9	<8	79 ± 4	357 ± 101	<15	<178	<32
	12-Dec-12	1362 ± 63	3624 ± 167	<10	<6	18 ± 2	308 ± 29	<11	<123	<25
T67	15-Oct-12	1725 ± 79	4200 ± 160	<25	<12	<12	1733 ± 383	<90	<257	<40
	14-Nov-12	1461 ± 77	4572 ± 166	<14	<16	<14	<1106	<84	<260	<52
	11-Dec-12	1480 ± 52	2765 ± 196	<16	<8	<8	342 ± 40	<14	95 ± 28	<33

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ATTACHMENT C

RESULTS FROM THE 2012

INTERLABORATORY COMPARISON PROGRAM

CONDUCTED BY

DEPARTMENT OF ENERGY

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DOE-MAPEP 26 RESULTS

Radionuclide	Result	Ref. Value	Flag (Evaluation)	Acceptance Range
Matrix: RdF Air Filter Bq/filter				
MN54	3.66	3.24	A	2.27 – 4.21
CO57	0.01	0.11*	A	False Positive Test
CO60	2.18	2.182	A	1.527 - 2.837
ZN65	3.43	2.99	A	2.09 - 3.89
CS134	2.12	2.38	A	1.67 – 3.09
CS137	1.93	1.79	A	1.25 – 2.33
Matrix: GrF Air Filter Bq/filter				
Gross Beta	2.57	2.40	A	1.2 – 3.6
Matrix: MaS Soil Bq/kg				
K40	1558.35	1491	A	1044 - 1938
MN54	602.87	558	A	391 - 725
CO57	1201.03	1179	A	825 -1533
CO60	1.53	1.56	A	Sensitivity Evaluation
ZN65	712.63	642	A	449 - 835
CS134	847.22	828	A	580 - 1076
CS137	0.62	0.94*	A	False Positive Test
Matrix: MaW Water Bq/L				
H3	446.30	437	A	306 – 568
MN54	33.49	31.8	A	22.3 – 41.3
CO57	30.56	32.9	A	23.0 – 42.8
CO60	24.19	23.72	A	16.60 - 30.84
NI63	55.05	60.0	A	42.0 – 78.0
ZN65	0.67	0.73*	A	False Positive Test
CS134	-0.12	0.16*	A	False Positive Test
CS137	40.37	39.9	A	27.9 – 51.9
SR90	0.17	0.14*	A	False Positive Test
Matrix: RdV Vegetation, Bq/sample :				
MN54	0.02	0.06*	A	False Positive Test
CO57	10.40	12.0	A	8.4 – 15.6
CO60	5.24	6.05	A	4.24 – 7.87
ZN65	8.14	8.90	A	6.23 – 11.57
CS134	7.91	8.43	A	5.90 - 10.96
CS137	0.18	0.04	N	False Positive Test

Evaluation: A = Acceptable, W = Acceptable with Warning, N = Not Acceptable
* Acceptable Uncertainty Value for False Positive.

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DOE-MAPEP 27 RESULTS

Radionuclide	Result	Ref. Value	Flag (Evaluation)	Acceptance Range
Matrix: RdF Air Filter Bq/filter				
MN54	2.56	2.36	A	1.65 - 3.07
CO57	1.81	1.91	A	1.34 – 2.48
CO60	1.70	1.728	A	1.210 – 2.246
ZN65	0.03	0.11*	A	False Positive Test
CS134	2.49	2.74	A	1.92 - 3.56
CS137	-0.04	0.05*	A	False Positive Test
Matrix: GrF Air Filter Bq/filter				
Gross Beta	1.59	1.92	A	0.96 - 2.88
Matrix: MaS Soil Bq/kg				
K40	661.22	632	A	442 - 822
MN54	960.09	920	A	644 - 1102
CO57	1197.21	1180	A	826 -1196
CO60	540.54	531	A	372 - 690
ZN65	657.47	606	A	424 - 788
CS134	940.11	939	A	657 - 1221
CS137	1158.87	1150	A	805 - 1495
Matrix: MaW Water Bq/L				
H3	371.05	334	A	234 – 434
MN54	19.01	17.8	A	12.5 – 23.1
CO57	28.33	29.3	A	20.5 – 38.1
CO60	0.09	0.10*	A	False Positive Test
ZN65	28.79	25.9	A	18.1 - 33.7
CS134	23.18	23.2	A	16.2 - 30.2
CS137	17.16	16.7	A	11.7 - 21.7
Matrix: RdV Vegetation, Bq/sample :				
MN54	2.99	3.27	A	2.29 – 4.25
CO57	5.28	5.66	A	3.96 - 7.36
CO60	4.63	5.12	A	3.58 - 6.66
ZN65	0.005	0.078*	A	False Positive Test
CS134	6.27	6.51	A	4.56 - 8.46
CS137	3.96	4.38	A	3.07 – 5.69

Evaluation: A = Acceptable, W = Acceptable with Warning, N = Not Acceptable
* Acceptable Uncertainty Value for False Positive.

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ATTACHMENT D

Industry Initiative

Ground Water Protection Program

Tritium in Ground Water Monitoring

2012

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A. Description of Program:

Turkey Point maintains a sampling and analysis program to meet the requirements of NEI 07-07, Industry Ground Water Protection Initiative. The procedures that govern the performance are EV-AA-100-1001, Fleet Ground Water Protection Program Implementing Guideline and 0-ADM-654, Ground Water Protection Program.

The sampling frequency is quarterly; more often if conditions warrant.

Sample assay is performed by a private contractor. This contractor provides other radiological assay for the effluents & rad-waste program; this affords QA for the Industry Initiative monitoring program.

B. Discussion

The Turkey Point Nuclear site is surrounded on three sides by the closed cooling canal system. This canal system, in addition to being the source of tertiary cooling, is the body of water receiving permitted liquid radiological waste; the canal system tritium level averages about 4,000 pCi/L. This supports the expectation to see tritium in subsurface water collected either on-site or off-site close to the (within the Owner Controlled Area) cooling canal system.

28 wells were involved in the 2012 monitoring program; some locations have multiple (two or three) depths.

Samples are analyzed for Tritium & Gamma emitters. As conditions warrant, analysis included Fe-55, Ni-63, Sr-89/90 and alpha (all were < LLD).

76 'routine' samples were collected.

Note: Wells in the L and G series which were reported last year are no longer part of the Industry Initiative for Ground Water Protection. Sample. Analysis of these wells are part of the Comprehensive Pre-Uprate Monitoring Program, results are available upon request.

C. Results

Tritium was detected in those locations reasonably affected by the cooling canal. The tritium results were from <177 to 3320 pico curies per liter. 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. Cooling canal tritium values typically vary from 4,000 to 5,000 pCi/L.

Tabular results follow:

C. Results, continued

Turkey Point 2011 Well Sampling Results, pCi/L

Note: -- denotes less than detectable, Typical MDAs K-40: 90 pCi/L Cs-137: 7 pCi/L

Well number	First Quarter 2010			Second Quarter 2010			Third Quarter 2010			Fourth Quarter 2010		
	H-3	K-40	Cs-137	H-3	K-40	Cs-137	H-3	K-40	Cs-137	H-3	K-40	Cs-137
PTPED-1	379	--	11.45	614	--	13.95	401	--	15.2	405	--	17.6
CD-1	334	52.33	---	441	---	---	177	--	--	235	--	--
P-94-2	1180	27.22	--				954	136	--			
P-94-4	891	--	7.602	768	--	7.8	<114	--	---	347	--	---
STP-1	255	--	--				<144	--	--			
PTN-MW-1s	<211	--	--				<177	--	--			
PTN-MW-1i	<210	297.6	--				580	408	--			
PTN-MW-1d	1490	397.1	--				1710	438	--			
PTN-MW-2s	<203	--	--				<177	--	--			
PTN-MW-3s	<210	--	--	<276			<179	--	--			
PTN-MW-4s	<204	96.44	--				<177	--	--	<154	---	--
PTN-MW-4i	3270	475.7	--				2990	488	--	3230	391	--
PTN-MW-4d	232	---	--				3320	227	--	<220	---	--
PTN-MW-5s	<192	323	--				212	275	--	179	227	--
PTN-MW-5i	<185	368.9	--				451	402	--	398	16	--
PTN-MW-5d	2330	469.9	--				2780	574	--	322	120	--
PTN-MW-6s	<192	95.6	--				<193	---	--			
PTN-MW-6d	741	380.7	--				1630	488	--			
PTN-MW-7s	<190	--	--				<188	218	--			
PTN-MW-7i	213	357.4	--				1980	437	--			
PTN-MW-7d	1430	516	--				2300	438	--			
PTN-MW-8s	2070	100	32.58	1320	--	12.79	1360	--	15.16	1710	88.3	17.2
PTN-MW-9s	<260	---	--	<273	--	--	<291	--	--	269	76.5	5.9
PTN-MW-10s	<192	--	--				<189	--	--			
PTN-MW-10i	1900	371.5	--				2060	339	--			

C. Results (continued) **Turkey Point 2011 Well Sampling Results, pCi/L**

Note: -- denotes less than detectable, Typical MDAs K-40: 90 pCi/L Cs-137: 7 pCi/L

Well number	First Quarter 2010			Second Quarter 2010			Third Quarter 2010			Fourth Quarter 2010		
	H-3	K-40	Cs-137	H-3	K-40	Cs-137	H-3	K-40	Cs-137	H-3	K-40	Cs-137
PTN-MW-10d	1380	578.6	--				3113	504	--			
PTN-MW-11s	<266	--	--	<273	--	--	<289	--	--	<166	--	--
PTN-MW-12s	522	130.5	--	796	115	--	563	--	--	778	--	--

Blank boxes indicate not sampled this period.

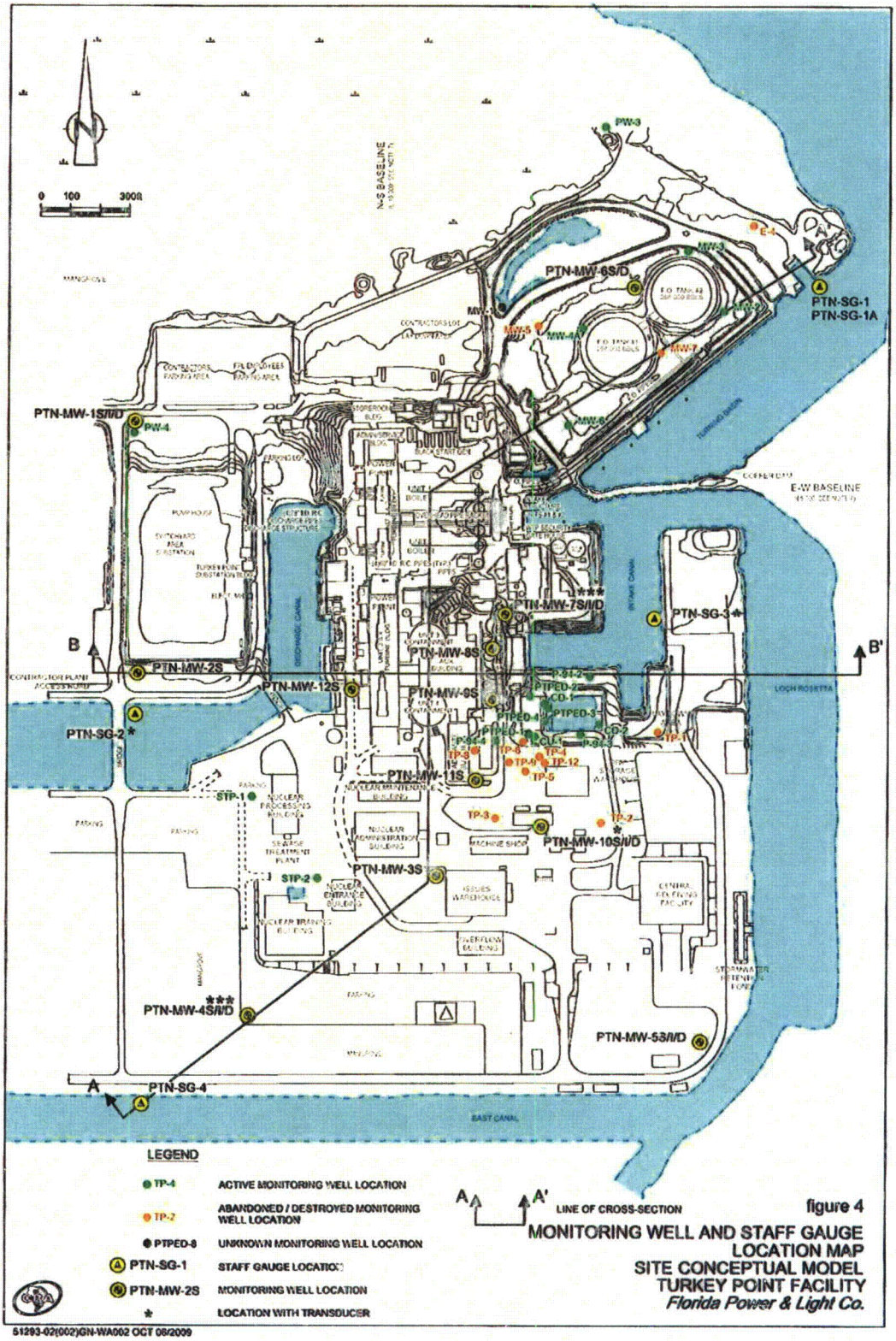
Description of Well locations follows:

D. List of wells and their locations

Well Name	**Location**
PTN-MW-1s PTN-MW-1i PTN-MW-1d	Northeast of Switch Yard, South of entrance road to Fossil Plant
PTN-MW-2s	South Switch Yard by parking lot
PTN-MW-3s	Northeast of new Issues Warehouse
PTN-MW-4s PTN-MW-4i PTN-MW-4d	SW corner of parking lot South of Training Bldg
PTN-MW-5s PTN-MW-5i PTN-MW-5d	SW of CRF, by canal
PTN-MW-6s PTN-MW-6d	NE of site in the berm for fossil oil tanks
PTN-MW-7s PTN-MW-7i PTN-MW-7d	NE of RCA, by Neutralization Tank
PTN-MW-8s	Near U3 RWST
PTN-MW-9s	Near U4 RWST
PTN-MW-10s PTN-MW-10i PTN-MW-10d	SE of Radwaste Bldg by S/G Bldg
PTN-MW-11s	South of truck entrance to Rad Waste Bldg
PTN-MW-12s	West of Condenser Polisher road
STP-1	West of Maintenance Bldg on corner or road into parking lot
P-94-4	East of Dressout Building, under delay fence
P-94-2	By Neutralization Basin, East of the RCA
CD-1	By Neutralization Basin, East of the RCA
PTPED-1	By Neutralization Basin, East of the RCA

Note: s, i and d refer to well depth: shallow - 20 ft., intermediate - 40 ft. and deep - 60 ft
Maps depicting the well locations follow.

Onsite H3 Monitoring Wells



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