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MAY 02 2012

L-2012-189
10 CFR 50.36b

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
2011 Annual Radiological
Environmental Operating Report

Enclosed is the 2011 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

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NRR

2011

ANNUAL

RADIOLOGICAL ENVIRONMENTAL

OPERATING REPORT

TURKEY POINT PLANT

UNITS 3 & 4

LICENSE NOS. DPR-31, DPR-41

DOCKET NOS. 50-250, 50-251

Data Submitted by: Florida DOH

Prepared by: 4/11/12

Reviewed by: 4/11/2012

2011
ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT
TURKEY POINT PLANT – UNITS 3 & 4

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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, 2011 to December 31, 2011.

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

2011
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.

   For results attributed to Fukushima Nuclear Power Plants event:
   Elevated levels of air particulate and radioiodine were measured during the period March 23 through April 26 attributed to the Fukushima Nuclear power plants event. Elevated levels were measured through-out the United States.

3. Waterborne, Surface Water:

   The results of radioactivity measurements in surface water samples are consistent with past measurements. Tritium was reported as present in seven of 24 indicator location and two 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 11% 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 less than 7% of the reporting level specified by ODCM Table 5.1-2. No other fission products were detected.

For results attributed to Fukushima Nuclear Power Plants event:
Radioiodine was measured during the period March 23 through May 11 attributed to the Fukushima Nuclear Power Plants event. Elevated levels of radioiodine were measured through-out the United States.

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 24 and 25.

In MAPEP 24, the results for Water, Air Filter Gross Beta, mixed gamma emitters in Air Filters, Soil and Vegetation matrices for those nuclides associated with nuclear power plant operation and using analytical methods used in the REMP are acceptable. There was a warning for Sr-90 in water, the result is high but within acceptance range.

In MAPEP 25, 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 identified one not acceptable result for gross beta on the air filter. The reported result for a 'blank' was too high; a "false positive" was reported.

An investigation was conducted by the State of Florida and determined that there was a slight shift in the beta efficiency value that generated the false positive value for the gross beta air filter MAPEP result. A new beta standard was ordered and a new beta efficiency value for the detector was generated on February 29, 2012.

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.

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, 2011
(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		Control Locations Mean (f)[b] Range
			Name[c] Distance & Direction	Mean (f)[b] Range	
Exposure Rate, 86[d]	---	4.9 (82/82) 3.7. - 7.3	NW-10 10 mi., NW	6.9 (4/4) 6.4 - 7.3	5.5 (4/4) 5.4 - 5.9

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, 2011
(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 [0.152 - 0.501]*	—	—	< MDA [0.011 - 0.572]*
Gross Beta, 311	0.0064	0.015 (259/259) 0.004 - 0.112*	T-72 < 1 mi, WSW	0.016 (51/51) 0.005 - 0.092*	0.016 (52/52) 0.004 - 0.140*
Composite Gamma Isotopic, 20					
^{7}Be	0.0006	0.145 (20/20) 0.0668 - 0.1910	T-57 1 mi., NW	0.1513 (4/4) 0.1068 - 0.1836	0.1619 (4/4) 0.0881 - 0.2060
^{40}K	—	< MDA	—	—	< MDA
^{134}Cs	0.0008	< MDA	—	—	< MDA
^{137}Cs	0.0008	0.0019* (1/20)	T-41 2 mi., WNW	0.0020*(1/20)	0.0027* (1/4)
^{210}Pb	—	0.0143 (11/20) 0.0020 - 0.0274	T-41 2 mi., WNW	0.0198 (2/4) 0.0122 – 0.0274	0.0105 (2/4) 0.0066 – 0.0143

* Elevated levels measured during Fukushima Nuclear Power Plants event from March 23, 2011 through April 26, 2011.

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, 2011
(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	165 (7/24) 92 - 333	T-81 6 mi., S	176 (6/12) 92 - 333	126 (2/12) 95 - 157
Gamma Isotopic, 36					
^{40}K	58	333 (24/24) 125 - 435	T-81 6 mi., S	340 (12/12) 245 - 435	107 (10/12) 43 - 337
^{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

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, 2011
(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	126 (1/2)	T-81 6 mi., S	126 (1/2)	< MDA
^{40}K	100	227 (4/4) 137 - 285	T-81 6 mi., S	278 (2/2) 270 – 285	294 (2/2) 273 - 315
^{58}Co	6	<MDA	—	—	< MDA
^{60}Co	7	<MDA	—	—	< MDA
^{134}Cs	7	<MDA	—	—	< MDA
^{137}Cs	7	<MDA	—	—	< MDA
^{210}Pb	—	1139 (3/4) 1035 - 1263	T-42 < 1 mi, ENE	1149 (2/2) 1035 - 1263	602 (1/2)
^{226}Ra	15	1431 (4/4) 1123 - 1794	T-81 6 mi., S	1664 (2/2) 1534 - 1794	800 (2/2) 775 - 824
^{235}U	—	<MDA	—	—	47 (1/2)
^{238}U	—	533 (3/4) 495 - 876	T-81 6 mi., S	533 (2/2) 495 - 570	603 (1/2)

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, 2011
(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, 1					
^{40}K	270	< MDA	—	—	2018 (1/1)
^{226}Ra	300	< MDA	—	—	< MDA
^{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

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, 2011
(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	2253 (2/2) 2013- 2293	T-81 6 mi., S	2253 (2/2) 2013- 2293	2027 (2/2) 2019 - 2035
^{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	171 (1/2)	T-81 6 mi., S	171 (1/2)	<MDA
^{238}U	—	<MDA	—	—	<MDA

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, 2011
(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, 46*					
^{7}Be	64	1457(24/24) 835 - 3192	T-41 2 mi., W/NW	1544 (12/12) 837 - 2898	1110 (22/22) 673 - 2081
^{40}K	120	4808 (24/24) 2740 - 6185	T-41 2 mi., W/NW	5040 (12/12) 3301 - 6233	4613 (22/22) 2675 - 6459
^{58}Co	6	<MDA	—	—	<MDA
^{60}Co	8	<MDA	—	—	<MDA
^{131}I *	9	188 (2/24) 159 - 217	T-41 2 mi., W/NW	217 (1/12)	501 (10/22) 9 - 1372
^{134}Cs	8	<MDA	—	—	<MDA
^{137}Cs	8	38 (19/24) 7 - 138	T-41 2 mi., W/NW	40 (11/12) 7 - 138	27 (6/22) 12 - 42
^{210}Pb	—	385 (8/24) 220 – 939	T-40 3 mi., W	1049 (4/12) 220 - 2782	519 (11/22) 220 - 2883
^{226}Ra	189	<MDA	—	—	134 (1/12)

* Additional samples taken from March 22 through May 11 and elevated levels measured associated with the Fukushima Nuclear Power Plants event.

Number of Non routine Reported Measurements = 0

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM ANNUAL SUMMARY
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Location of Facility Miami-Dade, Florida, Reporting Period January 1 - December 31, 2011
(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:	NW-5 , 3.9 miles Northwest
	Dates:	06/15/11 to 09/21/11.
	Deviation:	Failure to provide continuous monitoring.
	Description of Problem:	TLD missing; discovered at collection attempt
	Corrective action	Replaced TLD
B)	Pathway:	Direct Exposure - TLDs
	Location:	WSW-8 , 7.8 miles West Southwest
	Dates:	06/15/11 to 09/21/11.
	Deviation:	Failure to provide continuous monitoring.
	Description of Problem:	TLD missing; discovered at collection attempt
	Corrective Action	Replaced TLD
C)	Pathway	Direct Exposure - TLDs
	Location:	WSW-8 , 7.8 miles West Southwest
	Dates:	09/21/11 to 12/13/11.
	Deviation:	Failure to provide continuous monitoring.
	Description of Problem:	TLD missing; discovered at collection attempt
	Corrective Action	Replaced TLD
D)	Pathway	Airborne – Particulates and iodines
	Location:	T-72, <1 mile West Southwest
	Dates:	09/13/11 to 09/20/11
	Deviation:	Failure to provide continuous monitoring
	Description of Problem:	Power failure due to lightening strike; sampling run time 10.7 hours of 172.1 hours deployment time
	Corrective Action	Replaced damaged power line and pole. Air sample started 9/28/11.

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TABLE 1A

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DEVIATIONS / MISSING DATA

E)	Pathway:	Airborne – Particulates and iodines
	Location:	T-64 , 22 miles North Northeast
	Dates:	07/018/11 to 07/27/11
	Deviation:	Failure to provide continuous monitoring.
	Description of Problem:	Air sample pump failed; sampling run time 171.5 hours of 218.6 hours deployment time.
	Corrective Action	Replaced pump, verified system as operable.
F)	Pathway:	Airborne – Particulates and iodines
	Location:	T-72, <1 mile West Southwest
	Dates:	09/20/11 to 09/28/11
	Deviation:	Failure to provide continuous monitoring
	Description of Problem:	Power failure due to lightening strike; No sample run time.
	Corrective Action	Replaced damaged power line and pole. Air sample started 9/28/11.
G)	Pathway	Airborne – Particulates and iodines
	Locations and dates:	T-57, 4 miles Northwest
	Deviation:	09/20/11 to 09/28/11
	Description of Problem:	Iodine cartridge inadvertently did not get changed out.
	Corrective Action	Changed out iodine cartridge during following week.
H)	Pathway	Ingestion – Crustacea (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 2011
	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
1/1/2011 – 12/31/2011

The values specified in ODCM Table 5.1-3, Detection Capabilities, were achieved for all samples.

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TABLE 2

LAND USE CENSUS

Distance to Nearest (a, b)

Sector	8/10 Milk (c) Animal	8/10 Residence (g)	8/10 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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ATTACHMENT A

KEY TO SAMPLE LOCATIONS

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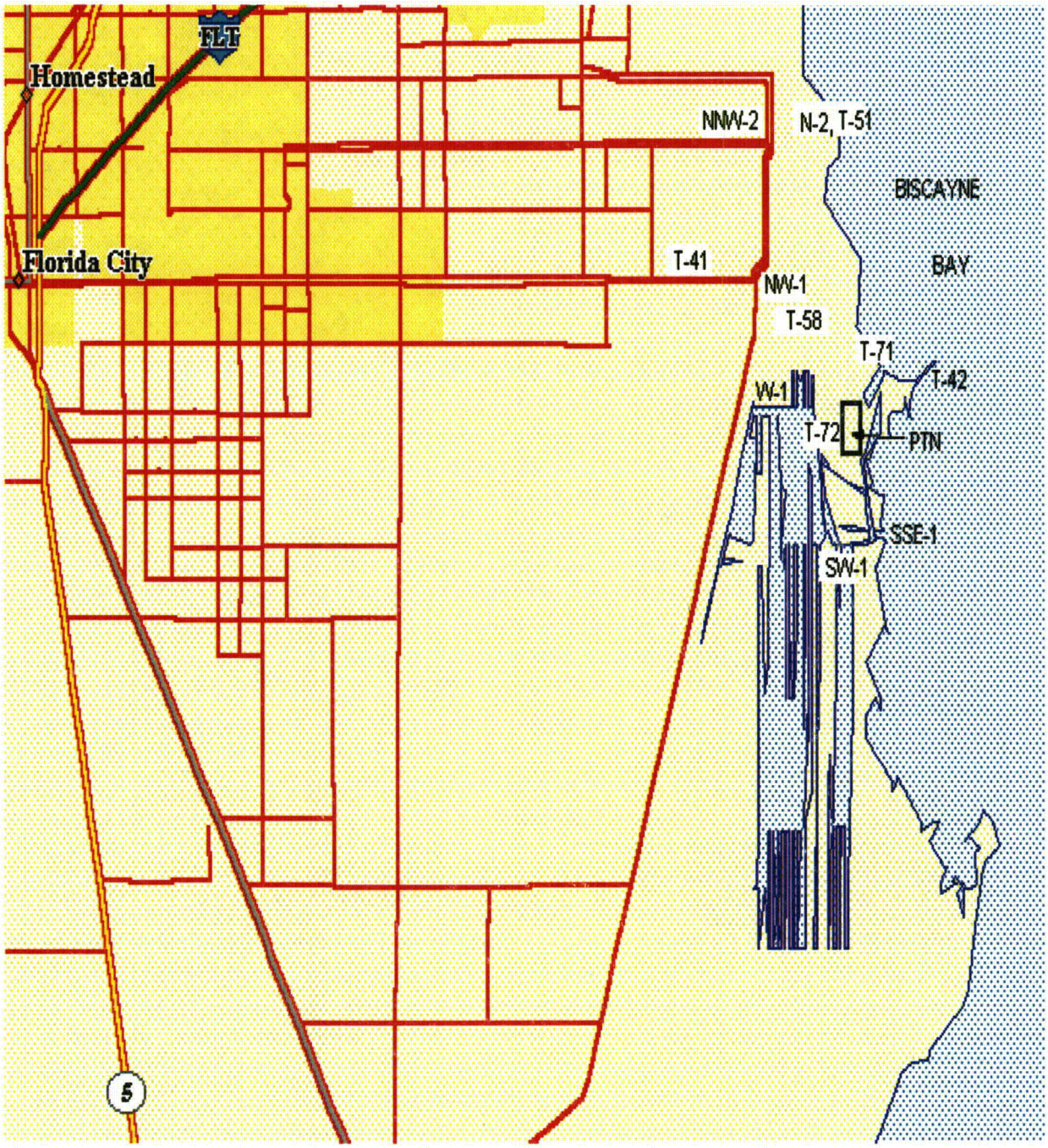
NEAR SITE SAMPLING LOCATIONS



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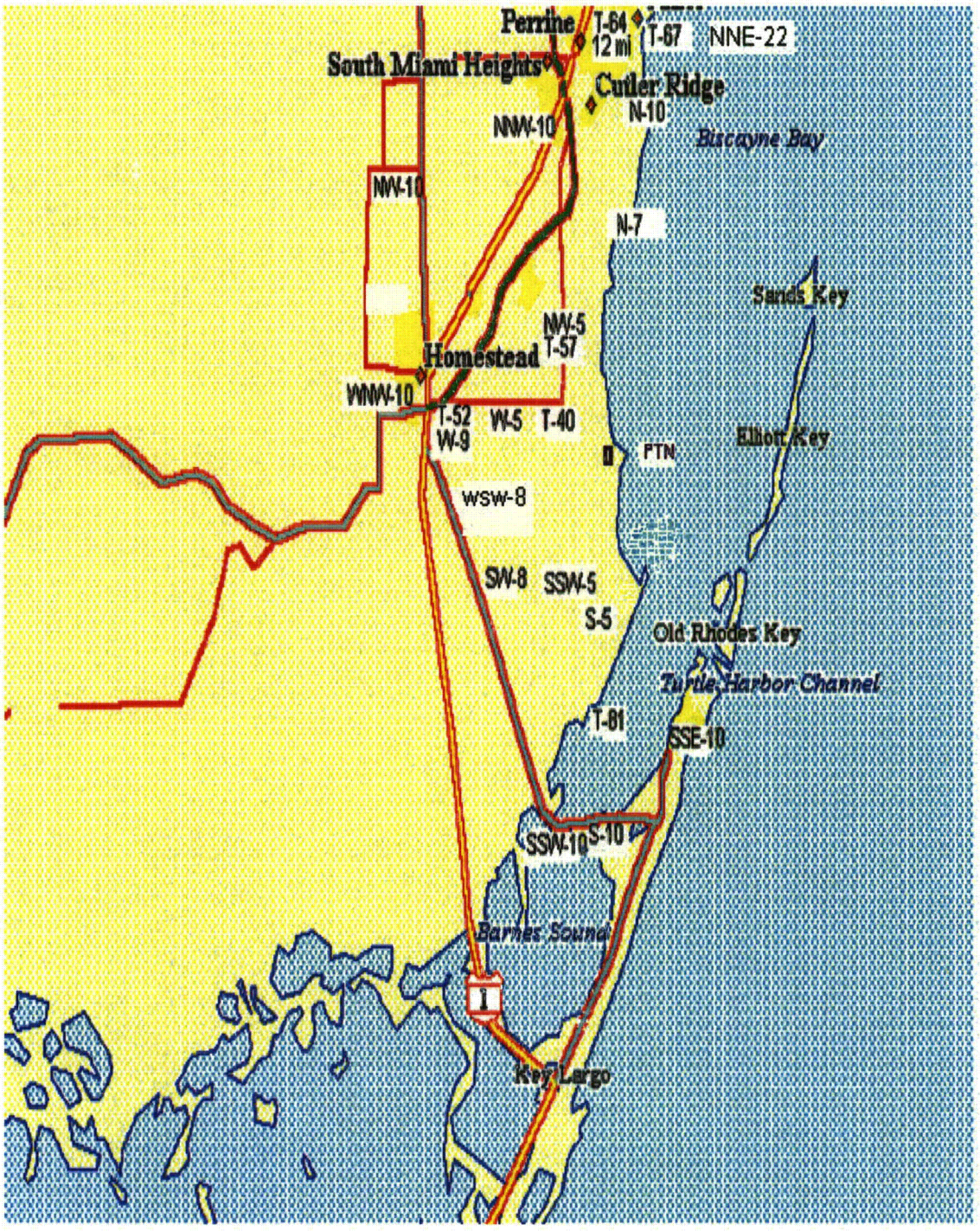
DISTANT REMP SAMPLING LOCATIONS



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

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

2011
ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT
TURKEY POINT PLANT – UNITS 3 & 4

ATTACHMENT B

RADIOLOGICAL SURVEILLANCE OF

FLORIDA POWER AND LIGHT COMPANY'S

TURKEY POINT SITE

2011

First Quarter, 2011

Second Quarter, 2011

Third Quarter, 2011

Fourth Quarter, 2011

RADIOLOGICAL SURVEILLANCE

OF

FLORIDA POWER AND LIGHT COMPANY

TURKEY POINT SITE

FIRST QUARTER 2011

BUREAU OF RADIATION CONTROL

TURKEY POINT SITE

Offsite Dose Calculation Manual Sampling

First Quarter, 2011

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	11
			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 14-Dec-10 Collection 15-Mar-11
N-2	4.8 ± 0.6
N-7	4.0 ± 0.4
N-10	4.7 ± 0.4
NNW-2	4.3 ± 0.5
NNW-10	5.0 ± 0.5
NW-1	5.3 ± 0.5
NW-5	3.7 ± 0.4
NW-10	5.9 ± 0.6
WNW-10	5.4 ± 0.5
W-1	5.2 ± 0.6
W-5	4.3 ± 0.5
W-9	4.2 ± 0.3

Sample Site	Deployment 14-Dec-10 Collection 15-Mar-11
WSW-8	4.0 ± 0.4
SW-1	3.9 ± 0.3
SW-8	3.9 ± 0.4
SSW-5	4.1 ± 0.4
SSW-10	4.5 ± 0.3
S-5	3.9 ± 0.3
S-10	4.7 ± 0.3
SSE-1	3.9 ± 0.4
SSE-10	4.7 ± 0.3
NNE-22	4.8 ± 0.4

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

Collection Date	T41	T51	T57	T58	T64	T72
03-Jan-11	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
12-Jan-11	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01
18-Jan-11	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
26-Jan-11	<0.02	<0.02	<0.02	<0.02	<0.03	<0.02
02-Feb-11	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
08-Feb-11	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
15-Feb-11	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
22-Feb-11	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
02-Mar-11	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
09-Mar-11	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
14-Mar-11	<0.03	<0.03	<0.03	<0.03	<0.02	<0.03
23-Mar-11(A)	0.489 ± 0.023	0.425 ± 0.012	0.392 ± 0.014	0.501 ± 0.016	0.572 ± 0.022	0.411 ± 0.015
30-Mar-11(A)	0.208 ± 0.020	0.152 ± 0.023	0.174 ± 0.020	0.186 ± 0.015	0.169 ± 0.021	0.207 ± 0.018

(A) Iodine levels attributed to Japan incident.

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

Collection Date	T41	T51	T57	T58	T64	T72
03-Jan-11	0.014 ± 0.003	0.014 ± 0.002	0.018 ± 0.003	0.017 ± 0.003	0.022 ± 0.003	0.017 ± 0.003
12-Jan-11	0.023 ± 0.002	0.021 ± 0.002	0.023 ± 0.002	0.023 ± 0.002	0.030 ± 0.002	0.020 ± 0.002
18-Jan-11	0.016 ± 0.002	0.016 ± 0.002	0.021 ± 0.002	0.014 ± 0.002	0.015 ± 0.002	0.021 ± 0.003
26-Jan-11	0.010 ± 0.002	0.010 ± 0.002	0.012 ± 0.002	0.011 ± 0.002	0.018 ± 0.002	0.014 ± 0.002
02-Feb-11	0.020 ± 0.002	0.016 ± 0.002	0.017 ± 0.002	0.018 ± 0.002	0.017 ± 0.002	0.011 ± 0.002
08-Feb-11	0.024 ± 0.003	0.013 ± 0.002	0.009 ± 0.002	0.007 ± 0.002	0.011 ± 0.002	0.008 ± 0.002
15-Feb-11	0.014 ± 0.002	0.014 ± 0.002	0.014 ± 0.002	0.018 ± 0.002	0.017 ± 0.002	0.021 ± 0.002
22-Feb-11	0.019 ± 0.002	0.019 ± 0.002	0.015 ± 0.002	0.018 ± 0.002	0.019 ± 0.002	0.014 ± 0.002
02-Mar-11	0.016 ± 0.002	0.015 ± 0.002	0.016 ± 0.002	0.016 ± 0.002	0.014 ± 0.002	0.015 ± 0.002
09-Mar-11	0.013 ± 0.002	0.013 ± 0.002	0.013 ± 0.002	0.013 ± 0.002	0.012 ± 0.002	0.013 ± 0.002
14-Mar-11	0.014 ± 0.003	0.020 ± 0.003	0.016 ± 0.003	0.020 ± 0.003	0.014 ± 0.002	0.018 ± 0.003
23-Mar-11(A)	0.082 ± 0.004	0.010 ± 0.002	0.112 ± 0.004	0.095 ± 0.004	0.140 ± 0.006	0.092 ± 0.004
30-Mar-11(A)	0.039 ± 0.003	0.032 ± 0.003	0.025 ± 0.003	0.028 ± 0.003	0.031 ± 0.003	0.026 ± 0.003
Average:	0.023 ± 0.001	0.016 ± 0.001	0.024 ± 0.001	0.023 ± 0.001	0.028 ± 0.001	0.022 ± 0.001

(A) Elevated Gross Beta levels attributed to Japan incident.

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

Sample Site	Be-7	K-40	I-131(A)	Cs-134	Cs-137	Pb-210
T41	0.1775 ± 0.0136	<0.0308	<0.0819	<0.0021	0.0019 ± 0.0004	<0.0609
T51	0.1764 ± 0.0126	<0.0170	0.2562 ± 0.0382	<0.0020	<0.0016	<0.0495
T57	0.1785 ± 0.0153	<0.0291	0.3091 ± 0.0392	<0.0024	<0.0013	<0.0610
T58	0.1909 ± 0.0169	<0.0203	0.3019 ± 0.0503	<0.0024	<0.0016	<0.0643
T64	0.2061 ± 0.0153	<0.0207	0.2751 ± 0.0479	<0.0024	0.0027 ± 0.0005	<0.0608
T72	0.1910 ± 0.0126	<0.0244	<0.0739	<0.0018	<0.0011	0.0196 ± 0.0036

(A) Iodine levels attributed to Japan incident.

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	19-Jan-11	<130	350 ± 28	<4	<3	<6	<4	<8	<6	<4	<5	<4	<7
	07-Feb-11	<139	295 ± 15	<2	<2	<5	<3	<7	<4	<3	<3	<3	<5
	16-Mar-11	<154	387 ± 34	<3	<4	<8	<4	<9	<6	<5	<5	<4	<6
T67	18-Jan-11	<130	43 ± 11	<4	<4	<7	<5	<13	<7	<6	<5	<4	<8
	07-Feb-11	<139	59 ± 11	<4	<4	<8	<4	<12	<7	<5	<4	<4	<8
	14-Mar-11	<155	66 ± 12	<4	<4	<8	<4	<10	<6	<5	<4	<4	<7
T81	18-Jan-11	138 ± 43	309 ± 30	<3	<3	<7	<3	<7	<6	<4	<4	<3	<5
	07-Feb-11	333 ± 51	282 ± 21	<2	<2	<5	<3	<5	<4	<3	<3	<3	<4
	14-Mar-11	<155	416 ± 44	<5	<5	<13	<7	<10	<10	<7	<6	<7	<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	U-235	U-238
T42	19-Jan-11	<54	214 ± 39	<5	<6	<7	<6	1035 ± 161	1123 ± 79	<29	<56	876 ± 135
T67	18-Jan-11	<93	315 ± 72	<12	<12	<11	<14	<1490	775 ± 120	<59	<75	<475
T81	18-Jan-11	126 ± 39	285 ± 50	<9	<9	<9	<9	<668	1534 ± 166	<45	<92	495 ± 149

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	19-Jan-11	984 ± 87	4173 ± 221	<25	<22	<19	<1896	<358	<76
	08-Feb-11	1236 ± 51	5024 ± 199	<16	<16	23 ± 3	<1730	<269	<66
	16-Mar-11	1193 ± 92	4480 ± 209	<20	<17	<20	<1943	<323	<59
T41	19-Jan-11	1302 ± 66	5053 ± 154	<16	<14	20 ± 4	<1422	<231	<50
	08-Feb-11	1224 ± 52	4762 ± 175	<15	<14	11 ± 2	245 ± 40	<286	<49
	16-Mar-11	1059 ± 86	5770 ± 238	<21	<18	18 ± 7	<2211	<323	<71
T67	18-Jan-11	759 ± 39	4928 ± 172	<19	<13	12 ± 2	220 ± 35	<236	<48
	07-Feb-11	786 ± 60	5602 ± 278	<27	<24	<22	<2640	<399	<103
	14-Mar-11	765 ± 61	6459 ± 183	<22	<13	<12	<1049	<259	<46
T67J	23-Mar-11	956 ± 44	4526 ± 165	1372 ± 26	<15	33 ± 3	298 ± 45	<401	<50
T67J	30-Mar-11	850 ± 86	3711 ± 169	820 ± 18	<19	<15	<1157	<398	<60

T67J - Additional non-routine samples collected in response to Japan incident.

RADIOLOGICAL SURVEILLANCE

OF

FLORIDA POWER AND LIGHT COMPANY

TURKEY POINT SITE

SECOND QUARTER 2011

BUREAU OF RADIATION CONTROL

TURKEY POINT SITE

Offsite Dose Calculation Manual Sampling

Second Quarter, 2011

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	1
4.a.2. Fish	Semiannually	2	2
4.b. Broadleaf Vegetation	Monthly	3	15
			Total: 205

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 15-Mar-11 Collection 15-June-11
N-2	4.7 ± 0.4
N-7	4.2 ± 0.4
N-10	5.0 ± 0.4
NNW-2	4.2 ± 0.4
NNW-10	5.4 ± 0.5
NW-1	5.9 ± 0.6
NW-5	4.1 ± 0.4
NW-10	6.8 ± 0.7
WNW-10	6.0 ± 0.5
W-1	5.8 ± 0.7
W-5	4.9 ± 0.5
W-9	4.7 ± 0.4
WSW-8	4.5 ± 0.5
SW-1	4.5 ± 0.4
SW-8	4.1 ± 0.4
SSW-5	4.4 ± 0.4
SSW-10	4.9 ± 0.4
S-5	4.2 ± 0.4
S-10	4.9 ± 0.5
SSE-1	4.2 ± 0.4
SSE-10	5.2 ± 0.5
NNE-22	5.3 ± 0.4

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

Collection Date	T41	T51	T57	T58	T64	T72
06-Apr-11(A)	<0.03	<0.03	<0.02	<0.02	0.011 ± 0.003	0.010 ± 0.003
11-Apr-11	<0.03	<0.03	<0.03	<0.03	<0.04	<0.03
20-Apr-11	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
25-Apr-11	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
04-May-11	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01
11-May-11	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
16-May-11	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
25-May-11	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
01-Jun-11	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
07-Jun-11	<0.03	<0.03	<0.03	<0.03	<0.02	<0.03
14-Jun-11	<0.03	<0.02	<0.02	<0.03	<0.03	<0.03
20-Jun-11	<0.02	<0.03	<0.03	<0.02	<0.03	<0.02
29-Jun-11	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

(A) Iodine levels are attributed to the Japan incident in March.

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

Collection Date	T41	T51	T57	T58	T64	T72
06-Apr-11	0.018 ± 0.002	0.019 ± 0.002	0.017 ± 0.002	0.017 ± 0.002	0.011 ± 0.002	0.014 ± 0.002
11-Apr-11	0.010 ± 0.002	0.012 ± 0.002	0.018 ± 0.003	0.016 ± 0.003	0.015 ± 0.003	0.022 ± 0.003
20-Apr-11	0.014 ± 0.002	0.016 ± 0.002	0.016 ± 0.002	0.018 ± 0.002	0.016 ± 0.002	0.020 ± 0.002
25-Apr-11	0.016 ± 0.003	0.018 ± 0.003	0.015 ± 0.003	0.012 ± 0.002	0.012 ± 0.002	0.013 ± 0.002
04-May-11	0.013 ± 0.002	0.011 ± 0.002	0.010 ± 0.001	0.012 ± 0.002	0.014 ± 0.002	0.010 ± 0.002
11-May-11	0.021 ± 0.002	0.020 ± 0.002	0.023 ± 0.002	0.018 ± 0.002	0.019 ± 0.002	0.011 ± 0.002
16-May-11	0.023 ± 0.003	0.022 ± 0.003	0.020 ± 0.003	0.021 ± 0.003	0.022 ± 0.003	0.019 ± 0.003
25-May-11	0.016 ± 0.002	0.016 ± 0.002	0.016 ± 0.002	0.020 ± 0.002	0.021 ± 0.002	0.016 ± 0.002
01-Jun-11	0.012 ± 0.002	0.011 ± 0.002	0.010 ± 0.002	0.013 ± 0.002	0.014 ± 0.002	0.012 ± 0.002
07-Jun-11	0.012 ± 0.002	0.015 ± 0.002	0.010 ± 0.002	0.011 ± 0.002	0.014 ± 0.002	0.010 ± 0.002
14-Jun-11	0.015 ± 0.002	0.013 ± 0.002	0.013 ± 0.002	0.016 ± 0.002	0.015 ± 0.002	0.016 ± 0.002
20-Jun-11	0.013 ± 0.002	0.019 ± 0.003	0.018 ± 0.003	0.016 ± 0.002	0.017 ± 0.003	0.016 ± 0.002
29-Jun-11	0.011 ± 0.002	0.019 ± 0.002	0.015 ± 0.002	0.014 ± 0.002	0.009 ± 0.001	0.012 ± 0.002
Average:	0.015 ± 0.001	0.016 ± 0.001	0.015 ± 0.001	0.016 ± 0.001	0.015 ± 0.001	0.015 ± 0.001

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

Sample Site	Be-7	K-40	Cs-134	Cs-137	Pb-210
T41	0.1618 ± 0.0087	<0.0069	<0.0009	<0.0008	0.0274 ± 0.0028
T51	0.1748 ± 0.0102	<0.0169	<0.0010	<0.0008	<0.0382
T57	0.1836 ± 0.0099	<0.0193	<0.0014	<0.0008	<0.0395
T58	0.1536 ± 0.0070	<0.0105	<0.0007	<0.0005	<0.0237
T64	0.1586 ± 0.0061	<0.0088	<0.0006	<0.0005	0.0143 ± 0.0022
T72	0.1653 ± 0.0124	<0.0136	<0.0014	<0.0009	0.0153 ± 0.0043

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	12-Apr-11	<134	424 ± 44	<6	<5	<12	<6	<12	<8	<6	<6	<5	<9
	18-May-11	<136	393 ± 26	<4	<4	<8	<5	<9	<7	<4	<4	<4	<13
	14-Jun-11	<131	415 ± 45	<5	<4	<11	<5	<13	<9	<5	<7	<4	<11
T67	12-Apr-11	95 ± 43	99 ± 20	<2	<2	<5	<3	<5	<4	<3	<3	<3	<5
	17-May-11	<133	185 ± 22	<3	<3	<6	<4	<6	<6	<4	<4	<3	<7
	15-Jun-11	<131	337 ± 16	<2	<2	<5	<3	<6	<4	<3	<3	<3	<7
T81	11-Apr-11	<134	349 ± 33	<3	<4	<8	<4	<8	<6	<5	<4	<4	<7
	17-May-11	<133	398 ± 24	<3	<2	<5	<3	<5	<5	<3	<3	<3	<5
	14-Jun-11	<131	412 ± 26	<4	<4	<8	<4	<10	<7	<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	U235	U238
T42	This sample to be collected.											
T67	This sample to be collected.											
T81	This sample to be 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	17-May-11	2018 ± 154	<29	<27	<59	<29	<73	<34	<30	<544	<113
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	10-Jun-11	2019 ± 159	<25	<25	<60	<27	<60	<32	<27	<492	<95
T81	10-Jun-11	2013 ± 132	<21	<22	<45	<24	<53	<26	<21	171 ± 53	<88

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

Sample Site	Collection Date	Be-7	K-40	I-131 (A)	Cs-134	Cs-137	Pb-210	Pb-212	Ra-226	Ra-228
T40	12-Apr-11	969 ± 84	4913 ± 266	159 ± 16	<21	<24	<2176	<95	<338	<65
	18-May-11	836 ± 45	4970 ± 184	<23	<16	14 ± 3	220 ± 40	<24	<270	<57
	15-Jun-11	835 ± 78	2740 ± 175	<15	<16	29 ± 6	<2178	<85	<266	<66
T41	12-Apr-11	1438 ± 103	5325 ± 215	217 ± 14	<17	47 ± 9	<1282	<121	<370	<59
	18-May-11	837 ± 100	3301 ± 193	<27	<18	138 ± 12	<2081	<105	<328	<74
	15-Jun-11	853 ± 83	4399 ± 237	<15	<17	53 ± 8	<2216	<88	<336	<74
T67	12-Apr-11	1143 ± 67	2675 ± 110	186 ± 9	<11	42 ± 6	2883 ± 580	<57	<202	<41
	17-May-11	924 ± 27	3349 ± 68	<9	<6	<5	<665	<28	134 ± 47	<23
	15-Jun-11	673 ± 83	5764 ± 196	<16	<16	<14	<893	<95	<301	<52
T67J	06-Apr-11	1008 ± 103	4549 ± 242	273 ± 15	<25	<22	<2442	<107	<366	<72
	20-Apr-11	1430 ± 56	3031 ± 129	76 ± 4	<14	16 ± 3	335 ± 42	17 ± 3	<282	<48
	25-Apr-11	987 ± 73	5101 ± 173	65 ± 8	<14	<11	<889	<93	<257	<52
	04-May-11	1348 ± 53	2742 ± 117	15 ± 2	<13	23 ± 3	317 ± 39	8 ± 3	<260	<42
	11-May-11	940 ± 44	4749 ± 173	9 ± 2	<14	<13	225 ± 38	<24	<263	<55
	25-May-11	673 ± 36	5912 ± 200	<13	<14	<13	226 ± 37	<23	<260	<51

(A) Iodine levels are attributed to the Japan incident in March.
T67J - Additional non-routine samples collected in response to Japan incident; these collections concluded the end of May.

RADIOLOGICAL SURVEILLANCE

OF

FLORIDA POWER AND LIGHT COMPANY

TURKEY POINT SITE

THIRD QUARTER 2011

BUREAU OF RADIATION CONTROL

TURKEY POINT SITE

Offsite Dose Calculation Manual Sampling

Third Quarter, 2011

Sample Type	Collection Frequency	Locations Sampled	Number of Samples
1. Direct Radiation	Quarterly	22	20
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	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: 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 15-June-11 Collection 21-Sep-11	Sample Site	Deployment 15-June-11 Collection 21-Sep-11
N-2	3.9 ± 0.3	WSW-8	(B)
N-7	3.5 ± 0.3		
N-10	4.2 ± 0.3	SW-1	3.6 ± 0.4
		SW-8	3.3 ± 0.3
NNW-2	3.5 ± 0.3		
NNW-10	4.1 ± 0.4	SSW-5	3.5 ± 0.4
		SSW-10	3.8 ± 0.3
NW-1	4.5 ± 0.5		
NW-5	(A)	S-5	3.4 ± 0.3
NW-10	7.8 ± 0.8	S-10	4.0 ± 0.3
WNW-10	4.7 ± 0.3	SSE-1	3.3 ± 0.3
		SSE-10	3.9 ± 0.4
W-1	4.5 ± 0.5		
W-5	3.9 ± 0.3	NNE-22	4.3 ± 0.3
W-9	3.8 ± 0.3		

(A) TLD lost when siren pole was replaced.
(B) TLD lost when siren pole was destroyed by a vehicle accident.

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

Collection Date	T41	T51	T57	T58	T64	T72
06-Jul-11	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
12-Jul-11	<0.03	<0.03	<0.03	<0.03	<0.02	<0.03
18-Jul-11	<0.02	<0.02	<0.02	<0.02	<0.03	<0.02
27-Jul-11	<0.01	<0.01	<0.01	<0.01	<0.02(A)	<0.01
02-Aug-11	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
09-Aug-11	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
16-Aug-11	<0.03	<0.02	<0.02	<0.02	<0.02	<0.02
24-Aug-11	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02
31-Aug-11	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
06-Sep-11	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02
13-Sep-11	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
20-Sep-11	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05(B)
28-Sep-11	<0.01	<0.01	<0.01(C)	<0.01	<0.02	(D)

(A) Pump failed and was replaced; estimated run time 171.5 out of 218.6 hours.
(B) Power failure due to a lightning strike. Estimated run time 10.7 out of 172.1 hours.
(C) Iodine cartridge inadvertently did not get changed out. The cartridge that was analyzed then was an unused cartridge.
(D) Power still out, no run time or samples collected.

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

Collection Date	T41	T51	T57	T58	T64	T72
06-Jul-11	0.015 ± 0.002	0.011 ± 0.002	0.015 ± 0.002	0.011 ± 0.002	0.013 ± 0.002	0.018 ± 0.002
12-Jul-11	0.015 ± 0.002	0.009 ± 0.002	0.010 ± 0.002	0.010 ± 0.002	0.010 ± 0.002	0.011 ± 0.002
18-Jul-11	0.010 ± 0.002	0.011 ± 0.002	0.012 ± 0.002	0.011 ± 0.002	0.017 ± 0.003	0.011 ± 0.002
27-Jul-11	0.006 ± 0.001	0.007 ± 0.001	0.005 ± 0.001	0.005 ± 0.001	0.009 ± 0.002(A)	0.007 ± 0.001
02-Aug-11	0.008 ± 0.002	0.006 ± 0.002	0.007 ± 0.002	0.006 ± 0.002	0.007 ± 0.002	0.005 ± 0.002
09-Aug-11	0.010 ± 0.002	0.008 ± 0.002	0.006 ± 0.002	0.009 ± 0.002	0.007 ± 0.002	0.006 ± 0.002
16-Aug-11	0.007 ± 0.002	0.012 ± 0.002	0.004 ± 0.002	0.008 ± 0.002	0.013 ± 0.002	0.014 ± 0.002
24-Aug-11	0.016 ± 0.002	0.017 ± 0.002	0.014 ± 0.002	0.013 ± 0.002	0.014 ± 0.002	0.014 ± 0.002
31-Aug-11	0.014 ± 0.002	0.012 ± 0.002	0.009 ± 0.002	0.011 ± 0.002	0.011 ± 0.002	0.015 ± 0.002
06-Sep-11	0.011 ± 0.002	0.010 ± 0.002	0.010 ± 0.002	0.009 ± 0.002	0.014 ± 0.002	0.008 ± 0.002
13-Sep-11	0.013 ± 0.002	0.012 ± 0.002	0.012 ± 0.002	0.012 ± 0.002	0.014 ± 0.002	0.009 ± 0.002
20-Sep-11	0.012 ± 0.002	0.013 ± 0.002	0.015 ± 0.002	0.016 ± 0.002	0.013 ± 0.002	0.050 ± 0.023(B)
28-Sep-11	0.005 ± 0.001	0.005 ± 0.001	0.005 ± 0.001	0.004 ± 0.001	<0.007	(C)
Average:	0.011 ± 0.001	0.010 ± 0.001	0.010 ± 0.001	0.010 ± 0.001	<0.011	0.014 ± 0.001

(A) Pump failed and was replaced; estimated run time 171.5 out of 218.6 hours.
(B) Power failure due to a lightning strike. Estimated run time 10.7 out of 172.1 hours.
(C) Power still out, no run time or samples collected.

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

Sample Site	Be-7	K-40	Cs-134	Cs-137	Pb-210
T41	0.0938 ± 0.0080	<0.0218	<0.0019	<0.0013	0.0122 ± 0.0024
T51	0.0890 ± 0.0084	<0.0246	<0.0012	<0.0011	0.0107 ± 0.0029
T57	0.1068 ± 0.0119	<0.0223	<0.0013	<0.0010	0.0185 ± 0.0038
T58	0.0928 ± 0.0107	<0.0148	<0.0018	<0.0012	0.0195 ± 0.0032
T64	0.0881 ± 0.0077	<0.0184	<0.0017	<0.0013	0.0066 ± 0.0020
T72	0.0668 ± 0.0075	<0.0209	<0.0019	<0.0016	0.0113 ± 0.0025

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	12-Jul-11	<128	399 ± 37	<5	<3	<9	<5	<9	<7	<6	<5	<5	<7
	17-Aug-11	<144	365 ± 25	<4	<3	<8	<4	<8	<6	<4	<4	<4	<10
	21-Sep-11	<144	290 ± 11	<2	<2	<3	<2	<4	<3	<2	<2	<2	<5
T67	13-Jul-11	<128	96 ± 14	<4	<4	<7	<4	<10	<6	<5	<4	<4	<8
	17-Aug-11	<144	48 ± 17	<3	<4	<7	<4	<6	<7	<5	<4	<4	<8
	21-Sep-11	<144	<59	<4	<4	<8	<4	<10	<7	<5	<4	<4	<9
T81	12-Jul-11	172 ± 44.	366 ± 30	<3	<3	<8	<4	<8	<6	<4	<4	<4	<6
	16-Aug-11	135 ± 47	435 ± 47	<6	<5	<11	<7	<13	<10	<7	<7	<5	<11
	20-Sep-11	<144	310 ± 23	<3	<4	<8	<4	<10	<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	12-Jul-11	<87	137 ± 49	<9	<9	<10	<10	1263 ± 232	1271 ± 119	<39	<82	<339
T67	13-Jul-11	<65	273 ± 22	<8	<7	<8	<8	602 ± 58	824 ± 138	33 ± 4	47 ± 6	603 ± 29
T81	12-Jul-11	<105	270 ± 51	<10	<9	<10	<10	1120 ± 318	1794 ± 181	<47	<96	570 ± 146

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	This sample not yet collected.										
T81	This sample not yet 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	12-Jul-11	1501 ± 123	4879 ± 251	<33	<23	52 ± 10	<2274	<105	<361	<77
	16-Aug-11	1519 ± 108	4371 ± 232	<27	<21	48 ± 7	<2296	<93	<354	<66
	21-Sep-11	2044 ± 96	5004 ± 182	<13	<14	30 ± 5	939 ± 341	<93	<249	<54
T41	12-Jul-11	1566 ± 97	6185 ± 215	<24	<15	64 ± 8	<1031	<117	<361	<53
	16-Aug-11	1703 ± 122	4901 ± 237	<28	<21	26 ± 9	<2559	<101	<383	<84
	21-Sep-11	1943 ± 70	4667 ± 179	<16	<14	7 ± 2	252 ± 42	<25	<278	<52
T67	13-Jul-11	1159 ± 93	5138 ± 242	<24	<19	<15	<2096	<88	<331	<61
	17-Aug-11	1555 ± 60	4931 ± 179	<20	<13	<12	253 ± 39	<23	<267	<47
	21-Sep-11	1160 ± 92	5377 ± 190	<14	<16	<14	<1138	<92	<267	<59

RADIOLOGICAL SURVEILLANCE

OF

FLORIDA POWER AND LIGHT COMPANY

TURKEY POINT SITE

FOURTH QUARTER 2011

BUREAU OF RADIATION CONTROL

TURKEY POINT SITE

Offsite Dose Calculation Manual Sampling

Fourth Quarter, 2011

Sample Type	Collection Frequency	Locations Sampled	Number of Samples
1. Direct Radiation	Quarterly	22	21
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	2
4.b. Broadleaf Vegetation	Monthly	3	9
			Total: 197

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 21-Sep-11 Collection 13-Dec-11
N-2	3.7 ± 0.1
N-7	3.5 ± 0.1
N-10	3.9 ± 0.1
NNW-2	3.2 ± 0.1
NNW-10	3.7 ± 0.1
NW-1	4.3 ± 0.2
NW-5	3.4 ± 0.1
NW-10	4.7 ± 0.1
WNW-10	4.3 ± 0.2
W-1	4.3 ± 0.4
W-5	3.7 ± 0.1
W-9	3.3 ± 0.2

Sample Site	Deployment 21-Sep-11 Collection 13-Dec-11
WSW-8	(A)
SW-1	3.4 ± 0.1
SW-8	2.9 ± 0.1
SSW-5	3.1 ± 0.1
SSW-10	3.5 ± 0.2
S-5	3.1 ± 0.2
S-10	3.8 ± 0.2
SSE-1	3.0 ± 0.1
SSE-10	3.8 ± 0.2
NNE-22	4.3 ± 0.1

(A) TLD missing; no data to report.

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

Collection Date	T41	T51	T57	T58	T64	T72
04-Oct-11	<0.02	<0.02	<0.02	<0.02	<0.02	<0.03
12-Oct-11	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
18-Oct-11	<0.02	<0.02	<0.02	<0.02	<0.03	<0.02
25-Oct-11	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
01-Nov-11	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
07-Nov-11	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
14-Nov-11	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
22-Nov-11	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
29-Nov-11	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
06-Dec-11	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
13-Dec-11	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02
21-Dec-11	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
27-Dec-11	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

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

Collection Date	T41	T51	T57	T58	T64	T72
04-Oct-11	0.017 ± 0.002	0.014 ± 0.002	0.015 ± 0.002	0.021 ± 0.003	0.019 ± 0.003	0.015 ± 0.003
12-Oct-11	0.010 ± 0.002	0.009 ± 0.002	0.011 ± 0.002	0.014 ± 0.002	0.010 ± 0.002	0.016 ± 0.002
18-Oct-11	0.013 ± 0.002	0.015 ± 0.002	0.011 ± 0.002	0.016 ± 0.002	0.021 ± 0.003	0.012 ± 0.002
25-Oct-11	0.021 ± 0.002	0.019 ± 0.002	0.022 ± 0.002	0.020 ± 0.002	0.014 ± 0.002	0.016 ± 0.002
01-Nov-11	0.012 ± 0.002	0.008 ± 0.002	0.007 ± 0.002	0.008 ± 0.002	0.006 ± 0.002	0.008 ± 0.002
07-Nov-11	0.011 ± 0.002	0.011 ± 0.002	0.011 ± 0.002	0.009 ± 0.002	0.013 ± 0.002	0.010 ± 0.002
14-Nov-11	0.015 ± 0.002	0.017 ± 0.002	0.017 ± 0.002	0.018 ± 0.002	0.017 ± 0.002	0.019 ± 0.002
22-Nov-11	0.007 ± 0.002	0.008 ± 0.002	0.006 ± 0.002	0.005 ± 0.001	0.010 ± 0.002	0.007 ± 0.001
29-Nov-11	0.009 ± 0.002	0.007 ± 0.002	0.005 ± 0.002	0.010 ± 0.002	0.004 ± 0.002	0.005 ± 0.002
06-Dec-11	0.013 ± 0.002	0.013 ± 0.002	0.012 ± 0.002	0.014 ± 0.002	0.011 ± 0.002	0.015 ± 0.002
13-Dec-11	0.010 ± 0.002	0.008 ± 0.002	0.011 ± 0.002	0.008 ± 0.002	0.006 ± 0.001	0.012 ± 0.002
21-Dec-11	0.012 ± 0.002	0.015 ± 0.002	0.017 ± 0.002	0.020 ± 0.002	0.013 ± 0.002	0.018 ± 0.002
27-Dec-11	0.004 ± 0.002	0.004 ± 0.002	0.004 ± 0.002	<0.008	0.004 ± 0.002	<0.008
Average:	0.012 ± 0.001	0.011 ± 0.001	0.012 ± 0.001	<0.013	0.011 ± 0.001	<0.012

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

Sample Site	Be-7	K-40	Cs-134	Cs-137	Pb-210
T41	0.1458 ± 0.0129	<0.0304	<0.0020	<0.0010	<0.0836
T51	0.1439 ± 0.0128	<0.0357	<0.0019	<0.0014	<0.0782
T57	0.1357 ± 0.0047	<0.0088	<0.0006	<0.0004	0.0209 ± 0.0088
T58	0.1272 ± 0.0093	<0.0138	<0.0016	<0.0014	0.0095 ± 0.0023
T64	0.1212 ± 0.0092	<0.0193	<0.0020	<0.0014	<0.0135
T72	0.1474 ± 0.0101	<0.0183	<0.0020	<0.0016	0.0101 ± 0.0023

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	12-Oct-11	<134	210 ± 22	<5	<4	<9	<4	<11	<8	<5	<5	<5	<10
	15-Nov-11	96 ± 46	255 ± 31	<4	<3	<8	<5	<10	<6	<5	<5	<4	<8
	14-Dec-11	<154	125 ± 15	<4	<4	<8	<4	<10	<7	<6	<4	<4	<7
T67	12-Oct-11	<134	<86	<3	<4	<10	<4	<8	<5	<5	<4	<3	<11
	15-Nov-11	157 ± 45	74 ± 21	<4	<3	<7	<3	<6	<7	<5	<4	<4	<7
	14-Dec-11	<154	66 ± 12	<4	<4	<8	<4	<10	<6	<6	<4	<4	<6
T81	12-Oct-11	186 ± 46	310 ± 38	<4	<4	<8	<5	<10	<7	<6	<4	<5	<8
	15-Nov-11	92 ± 43	252 ± 22	<4	<4	<9	<4	<10	<7	<5	<4	<4	<6
	14-Dec-11	<154	245 ± 17	<1	<1	<3	<2	<3	<3	<2	<1	<1	<2

(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	14-Dec-11	2035 ± 219	<21	<26	<44	<27	<53	<27	<20	<380	<86
T81	14-Dec-11	2293 ± 180	<31	<32	<66	<34	<78	<35	<33	<560	<121

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	12-Oct-11	3192 ± 140	5682 ± 221	<18	<20	<22	<1281	<117	<361	<53
	14-Nov-11	2092 ± 86	3712 ± 171	<29	<17	31 ± 4	255 ± 50	<32	<335	<56
	13-Dec-11	1567 ± 85	4953 ± 179	<23	<13	34 ± 5	2782 ± 437	<97	<259	<49
T41	12-Oct-11	2898 ± 97	5562 ± 214	<17	<19	33 ± 4	269 ± 49	<29	<340	<63
	14-Nov-11	2030 ± 118	4325 ± 201	<24	<18	<18	<1209	<119	<303	<65
	13-Dec-11	1671 ± 44	6233 ± 95	<11	<7	24 ± 3	1115 ± 218	<44	<131	<24
T67	12-Oct-11	2081 ± 86	5616 ± 197	<15	<13	<13	<1183	<105	<276	<52
	15-Nov-11	1992 ± 78	4968 ± 196	<26	<17	<15	341 ± 49	<28	<324	<62
	14-Dec-11	1431 ± 101	4117 ± 242	<18	<12	<9	312 ± 40	6 ± 2	<221	<45

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ATTACHMENT C

RESULTS FROM THE 2011

INTERLABORATORY COMPARISON PROGRAM

CONDUCTED BY

DEPARTMENT OF ENERGY

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DOE-MAPEP 24 RESULTS

Radionuclide	Result	Ref. Value	Flag (Evaluation)	Acceptance Range
Matrix: RdF Air Filter Bq/filter				
MN54	3.0	2.64	A	1.85 – 3.43
CO57	3.19	3.33	A	2.33 – 4.33
CO60	0.01	-----	A	Blank - No Activity
ZN65	3.71	1.36	A	0.95 – 1.77
CS134	3.22	3.49	A	2.44 – 4.54
CS137	2.46	2.28	A	1.60 – 2.96
Matrix: GrF Air Filter Bq/filter				
Gross Beta	1.44	1.27	A	0.662 – 1.985
Matrix: MaS Soil Bq/kg				
K40	544.81	540	A	378 - 702
MN54	1.15	-----	A	Blank - No Activity
CO57	942.79	927	A	649 -1205
CO60	485.54	482	A	337 - 627
ZN65	1493.46	1359	A	951 - 1767
CS134	684.71	680	A	476 - 884
CS137	780.80	758	A	531 – 985
Matrix: MaW Water Bq/L				
H3	239.32	243	A	170 – 316
MN54	33.12	31.6	A	22.1 – 41.1
CO57	18.04	18.9	A	13.2 – 24.6
CO60	24.82	24.6	A	17.2 – 32.0
NI63	15.18	18.6	A	13.0 – 24.2
ZN65	0.60	-----	A	Blank - No Activity
CS134	21.84	21.5	A	15.1 – 28.0
CS137	30.21	29.4	A	20.6 – 38.2
SR90	10.56	8.72	W	6.10 - 11.34
Matrix: RdV Vegetation, Bq/sample :				
MN54	5.77	6.40	A	4.48 – 8.32
CO57	8.64	9.94	A	6.96 – 12.92
CO60	4.26	4.91	A	3.44 - 6.38
ZN65	2.8	2.99	A	2.09 – 3.89
CS134	5.12	5.50	A	3.85 – 7.15
CS137	0.02	-----	A	Blank - No Activity

Evaluation : A = Acceptable, W = Acceptable with Warning, N = Not Acceptable

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DOE-MAPEP 25 RESULTS

Radionuclide	Result	Ref. Value	Flag (Evaluation)	Acceptance Range
Matrix: RdF Air Filter Bq/filter				
MN54	0.01	-----	A	Blank - No Activity
CO57	4.689	5.09	A	3.56 – 6.62
CO60	3.13	3.20	A	2.24 – 4.16
ZN65	4.64	4.11	A	2.88 – 5.34
CS134	0.02	-----	A	Blank - No Activity
CS137	2.74	2.60	A	1.82 – 3.38
Matrix: GrF Air Filter Bq/filter				
Gross Beta	0.030	-----	N	Blank - No Activity
Matrix: MaS Soil Bq/kg				
K40	647.13	625	A	438 - 813
MN54	901.50	848	A	594 - 1102
CO57	1197.21	1180	A	826 -1534
CO60	652.60	644	A	451 - 837
ZN65	1721.94	1560	A	1092 - 2028
CS134	-0.90	-----	A	Blank - No Activity
CS137	1013.69	979	A	685 - 1273
Matrix: MaW Water Bq/L				
H3	910.69	1014	A	710 – 1318
MN54	26.02	25.0	A	17.5 – 32.5
CO57	35.05	36.6	A	25.6 – 47.6
CO60	29.31	29.3	A	20.5 – 38.1
ZN65	31.10	28.5	A	20.0 – 37.1
SR90	13.20	14.2	A	9.9 – 18.5
CS134	19.18	19.1	A	13.4 – 24.8
CS137	0.19	-----	A	Blank - No Activity
Matrix: RdV Vegetation, Bq/sample :				
MN54	4.79	5.71	A	4.00 – 7.42
CO57	0.04	-----	A	Blank - No Activity
CO60	2.71	3.38	A	2.37 – 4.39
ZN65	5.45	6.39	A	4.47 – 8.31
CS134	0.015	-----	A	Blank - No Activity
CS137	3.91	4.71	A	3.30 – 6.12

Evaluation : A = Acceptable, W = Acceptable with Warning, N = Not Acceptable

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ATTACHMENT D

Industry Initiative

Ground Water Protection Program

Tritium in Ground Water Monitoring

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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.

33 wells in 22 locations were involved in the 2011 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).

128 'routine' samples were collected; 1 extra sample was collected to confirm the tritium trend in PTN-MW-8s was correct.

C. Results

Tritium was detected in those locations reasonably affected by the cooling canal.
Maximum result: 3880 pCi/L ; the cooling canal tritium values typically vary from 4,000 to 5,000 pCi/L.
Fourth quarter results for wells L-3, L-5, G-21, and G-35 wells were not available at the time this report was completed and will be furnished in a supplement when available. These wells are sampled and monitored by a separate program and are included for comparison to the wells onsite.

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	700	–	15.44	569	–	18.56	634	–	24.77	453	–	17
CD-1	584	–	5.89	651	73.7	8.93	603	–	–	<283	–	–
P-94-2	753	175	–	730	170	–	961	–	–			
P-94-4	936	–	9.314	753	–	6.9	1700	–	9.18	1850	–	10.67
STP-1	<238	–	–	<264	–	–	<258	–	–			
L-3 top	<230	–	–	<206	–	–	<281	–	–			
L-3 bottom	3430	575	–	3700	492	–	3650	663.7	–			
L-5 top	<180	–	–	<211	–	–	<282	–	–			
L-5 bottom	3390	537	–	3340	460	–	3510	558	–			
G-21 top	<180	–	–	<210	–	–	<277	–	–			
G-21 bottom	<185	–	–	<211	–	–	<278	–	–			
G-28 top	<184	–	–	<246	–	–	<276	–	–			
G-28 bottom	520	215	–	432	168	–	391	181.5	–			
G-35 Top	<183	–	–	<248	–	–	<274	–	–			
G-35 Bottom	<185	113	–	<245	–	–	<278	141.8	–			
PTN-MW-1s	<210	–	–				<199	–	–			
PTN-MW-1i	441	321	–				<258	329	–			
PTN-MW-1d	1970	347	–				1730	510	–			
PTN-MW-2s	<211	–	–	<222	–	–	<205	–	–			
PTN-MW-3s	<209	–	–				<207	–	–			
PTN-MW-4s	<210	–	–				<208	–	–	<284	90	–
PTN-MW-4i	3130	588	–				2890	482	–	3120	67.5	–
PTN-MW-4d	3330	534	–				3300	475	–	3880	590	–
PTN-MW-5s	290	164	–	228	174	–	<199	280	–	<288	209	–
PTN-MW-5i	2900	555	–	303	448	–	<256	360	–	<280	440	–
PTN-MW-5d	2760	569	–	2570	529	–	2830	443	–	2610	624	–
PTN-MW-6s	<118	–	–				<208	83	–			

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-6d	1400	376	–				1100	476	–			
PTN-MW-7s	588	–	–	303	–	–	765	–	–			
PTN-MW-7i	866	335	–	355	315	–	537	323	–			
PTN-MW-7d	1830	528	–	1480	388	–	746	448	–			
PTN-MW-8s	2800	146	33.82	3500	–	18.17	3570	–	28.2	1730	–	8.9
PTN-MW-8s	2820	76.98	22.66									
PTN-MW-9s	393	5.4	–	<239	–	–	<239	–	–	<294	–	–
PTN-MW-10s	<209	–	–				<157	–	–			
PTN-MW-10i	1350	346	–				1890	477	–			
PTN-MW-10d	2680	537	–				2730	521	–			
PTN-MW-11s	499	–	–	314	–	–	373	–	–	<296	–	–
PTN-MW-12s	588	–	–	257	–	–	321	–	–	<276	–	–

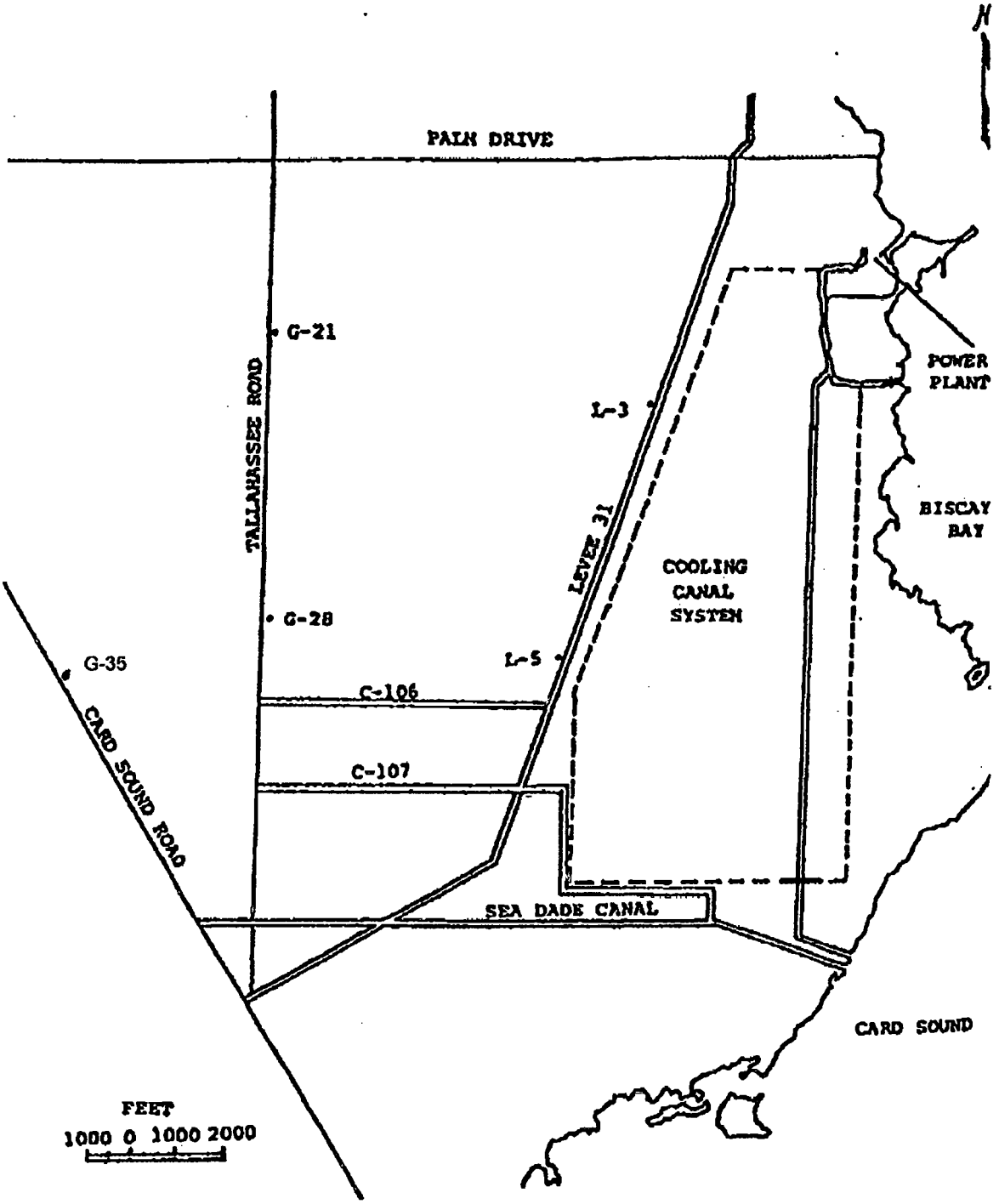
Description of Well locations follows:

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
L-3 (1)	On Levee 31 dike,
L-5 (1)	On Levee 31 dike
G-21 (1)	On 137th Avenue
G-28 (1)	On 137th Avenue
G-35 (1)	Card Sound Road

Note: s, i and d refer to well depth: shallow - 20 ft., intermediate - 40 ft. and deep - 60 ft
(1): Sampled at 18 and 58 foot levels.
Maps depicting the well locations follow.

Offsite H3 Monitoring Wells



Onsite H3 Monitoring Wells