Florida Power & Light Company, 6501 South Ocean Drive, Jensen Beach, FL 34957

April 24, 2012

L-2012-169
10 CFR 50.4
10 CFR 50.36

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

RE: St. Lucie Units 1 and 2
Docket Nos. 50-335 and 50-389
Annual Radiological Environmental
Operating Report for Calendar Year 2011

The enclosed report is being submitted pursuant to Technical Specification 6.9.1.8. The *Annual Radiological Environmental Operating Report* provides information summaries and analytical results of the Radiological Environmental Monitoring Program (REMP) for calendar year 2011.

Please contact us should there be any questions regarding this report.

Sincerely,

Eric S. Katzman
Licensing Manager
St. Lucie Plant

Enclosure

ESK/tlt

IE25
NRR

2011

ANNUAL

RADIOLOGICAL ENVIRONMENTAL

OPERATING REPORT

ST. LUCIE PLANT

UNITS 1 & 2

LICENSE NOS. DPR-67, NPF-16

DOCKET NOS. 50-335, 50-389

Data Submitted by: Florida DOH

Prepared by: 3/23/12

Reviewed by: 3/24/2012

2011
ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT
ST. LUCIE PLANT – UNITS 1 & 2

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ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT
ST. LUCIE PLANT – UNITS 1 & 2

I. INTRODUCTION

This report is submitted pursuant to Specification 6.9.1.8 of St. Lucie Unit 1 and St. Lucie Unit 2 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 meeting the requirements of Unit 1 and Unit 2 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 to 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 St. Lucie Plant is conducted pursuant to the St. Lucie Units 1 and 2 Offsite Dose Calculation Manual (ODCM) Section 3/4.12.1, Monitoring Program.

1. Sample Locations, Types and Frequencies:

   a. Direct radiation gamma exposure rate is monitored continuously at 27 locations by thermoluminescent dosimeters (TLDs). TLDs are collected and analyzed quarterly.

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

   c. Surface water samples are collected from two locations. Samples are collected and analyzed weekly and monthly, respectively. Analyses include gamma isotopic and tritium measurements.

d. Shoreline sediment samples are collected from two 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. 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 St. Lucie Plant is conducted by the State of Florida, Department of Health (DOH), Bureau of Radiation Control (BRC). Samples are collected and analyzed by DOH personnel.

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

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 or missing data, if any, are noted and explained in Table 1A. Samples not meeting the specified "A PRIORI" LLD, if any, are noted and explained in Table 1B. 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 a five mile radius from the St. Lucie Plant is conducted annually to determine the location of the nearest milk animal, residence, and garden producing broad leaf vegetation, in each of the 16 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 St. Lucie Plant ODCM. Table 1 provides a summary of the measurements made for the nuclides required by ODCM, Table 4.12-1, for all samples specified by Table 3.12-1. 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 22 through April 23 attributed to the Fukushima Nuclear power plants event. Elevated levels were measured through-out the United States.

3. Surface Water:

   The results for radioactivity measurements in surface water are consistent with past measurements and with measurements made during the pre-operational surveillance program. Tritium was reported as present in six of the 52 indicator locations and three of the 12 control location surface water samples collected. The highest value was 7% of the required LLD listed in ODCM Table 4.12-1. There were no indications of any other nuclides that could be attributed to plant effluents. Results for surface water samples are summarized in Table 1.

4. Waterborne Sediment and Food Products:

The results for radioactivity measurements in waterborne sediment, fish and crustacean samples are consistent with past measurements and with measurements made during the pre-operational surveillance program. There were no indications of any nuclides attributed to plant effluents. Results for the waterborne sediment, fish and crustacean samples are summarized in Table 1.

5. Broad Leaf Vegetation:

For results attributed to plant effluents:
The results of radioactivity measurements in broad leaf vegetation are consistent with past measurements and with measurements made during the pre-operational surveillance program.
There were no indications of any nuclides attributed to plant effluents.

For results attributed to Fukushima Nuclear Power Plants event:
Radioiodine was measured during the period March 22 through May 10 attributed to the Fukushima Nuclear Power Plants event. Elevated levels of radioiodine were measured through-out the United States.

6. Land Use Census:

A new garden was identified 2.0 miles, West Southwest of the plant. This garden has been included in the ODCM for calculating dose from plant effluents and is included in the 2011 Annual Radioactive Effluent Release Report.

7. 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 St. Lucie 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 measurements verify that the dose or dose commitment to members of the public, due to operation of St. Lucie Units 1 and 2, 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 St. Lucie Units 1 & 2, Docket No(s). 50-335 & 50-389
Location of Facility St. Lucie, 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 [d] Rate, 107	—	4.1 (103/104) 3.0 - 6.1	S - 5 5 mi., S	5.2 (3/4) 4.4 – 5.9	4.4 (4/4) 3.6 – 5.4

Number of Non-Routine Reported Measurements = 0

TABLE 1

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM ANNUAL SUMMARY
Name of Facility St. Lucie Units 1 & 2, Docket No(s). 50-335 & 50-389
Location of Facility St. Lucie, Florida, Reporting Period January 1 - December 31, 2011
(County, State)

PATHWAY: AIRBORNE
SAMPLES COLLECTED: RADIOIODINE AND PARTICULATES
UNITS: PICO - Ci/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, 260	0.012	<MDA [0.013 - 0.467]*	—	—	<MDA
Gross Beta, 260	0.0064	0.015 (208/208) 0.004 - 0.115	H-14 1 mile, SE	0.016 (52/52) 0.005 - 0.096*	0.014 (52/52) 0.003 - 0.108*
Composite Gamma Isotopic, 20					
^{7}Be	0.0006	0.1332 (16/16) 0.0624 - 0.2151	H-34 .5 mile, N	0.1486 (4/4) 0.096 - 0.2095	0.1250 (4/4) 0.0673 - 0.1677
^{134}Cs	0.0008	0.0021* (1/4)	H-14 1 mile, SE	0.0021 (1/4)	<MDA
^{137}Cs	0.0008	0.0023* (1/4)	H-14 1 mile, SE	0.0023 (1/4)	<MDA
^{210}Pb	—	0.0161 (12/16) 0.007 - 0.028	H-14 1 mile, SE	0.0194 (3/4) 0.0117 -0 .0245	0.0125 (4/4) 0.0057 – 0.0200

* Elevated levels measured during Fukushima Nuclear Power Plants event from March 22, 2011 through April 23, 2011.

Number of Non-Routine Reported Measurements = 0

TABLE 1

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM ANNUAL SUMMARY
Name of Facility St. Lucie Units 1 & 2, Docket No(s). 50-335 & 50-389
Location of Facility St. Lucie, Florida, Reporting Period January 1 - December 31, 2011
(County, State)

PATHWAY: WATERBORNE
SAMPLES COLLECTED: SURFACE WATER
UNITS: PICO - Ci/LITER

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
Tritium, 64	172	137 (6/52) 97 - 212	H-15 <1 mi., ENE/E/ESE	137 (6/52) 97 - 212	100 (3/12) 94 - 104
Gamma Isotopic, 64					
^{40}K	58	345 (52/52) 155 - 460	H-15 <1 mi., ENE/E/ESE	345 (52/52) 155 - 460	368 (12/12) 293 - 445
^{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

TABLE 1

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM ANNUAL SUMMARY
Name of Facility St. Lucie Units 1 & 2, Docket No(s). 50-335 & 50-389
Location of Facility St. Lucie, Florida, Reporting Period January 1 - December 31, 2011
(County, State)

PATHWAY: WATERBORNE
SAMPLES COLLECTED: SHORELINE SEDIMENT
UNITS: PICO - Ci/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, 4					
^{7}Be	56	<MDA	—	—	<MDA
^{40}K	100	750 (2/2) 402 - 1097	H-15 <1 mi, ENE/E/ESE	750 (2/2) 402 - 1097	252 (2/2) 246 - 258
^{58}Co	6	<MDA	—	—	<MDA
^{60}Co	7	<MDA	—	—	<MDA
^{134}Cs	7	<MDA	—	—	<MDA
^{137}Cs	7	<MDA	—	—	<MDA
^{210}Pb	—	451 (1/2)	H-15 <1 mi., ENE/E/ESE	451 (1/2)	287 (1/2)
^{226}Ra	15	817 (1/2)	H-15 <1 mi., ENE/E/ESE	817 (1/2)	350 (2/2) 229 - 470
^{232}Th	25	106 (2/2) 74 - 137	H-15 <1 mi., ENE/E/ESE	106 (2/2) 74 - 137	56 (2/2) 50 - 62
^{235}U	—	39 (1/2)	H-15 <1 mi., ENE/E/ESE	39 (1/2)	<MDA
^{238}U	—	267 (1/2)	H-15 <1 mi., ENE/E/ESE	267 (1/2)	<MDA

Number of Non-Routine Reported Measurements = 0

TABLE 1

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM ANNUAL SUMMARY
Name of Facility St. Lucie Units 1 & 2, Docket No(s). 50-335 & 50-389
Location of Facility St. Lucie, Florida, Reporting Period January 1 - December 31, 2011
(County, State)

PATHWAY: INGESTION
SAMPLES COLLECTED: CRUSTACEA
UNITS: PICO - Ci/Kg, WET

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	
Gamma Isotopic, 5					
^{40}K	270	1838 (3/3) 1675 – 2040	H-15 <1 mi., ENE/E/ESE	1838 (3/3) 1675 – 2040	2270 (2/2) 1627 - 2912
^{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	18	<MDA	—	—	<MDA
^{226}Ra	300	892 (1/3)	H-15 <1 mi., ENE/E/ESE	892 (1/3)	<MDA
^{228}Ra	58	< MDA	—	—	<MDA

Number of Non-Routine Reported Measurements = 0

TABLE 1

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM ANNUAL SUMMARY
Name of Facility St. Lucie Units 1 & 2, Docket No(s). 50-335 & 50-389
Location of Facility St. Lucie, Florida, Reporting Period January 1 - December 31, 2011
(County, State)

PATHWAY: INGESTION
SAMPLES COLLECTED: FISH
UNITS: PICO - Ci/Kg, WET

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	
Gamma Isotopic, 4					
^{40}K	270	2500 (2/2) 1474 - 3526	H-15 <1 mi., ENE/E/ESE	2500 (2/2) 1474 - 3526	2433 (2/2) 2294 - 2572
^{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	18	<MDA	—	—	<MDA

Number of Non-Routine Reported Measurements = 0

TABLE 1

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM ANNUAL SUMMARY
Name of Facility St. Lucie Units 1 & 2, Docket No(s). 50-335 & 50-389
Location of Facility St. Lucie, Florida, Reporting Period January 1 - December 31, 2011
(County, State)

PATHWAY: INGESTION
SAMPLES COLLECTED: BROAD LEAF VEGETATION
UNITS: PICO - Ci/Kg, WET

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, 44*					
^{7}Be	64	872 (24/24) 328 - 1600	H-52 1 mi., S/SSE	891 (12/12) 420 - 1385	703 (18/18) 368 - 1354
^{40}K	120	4815 (24/24) 3319 - 6702	H-52 1 mi., S/SSE	5236 (12/12) 3942 - 6702	3284 (18/18) 2359 - 4652
^{58}Co	6	<MDA	—	—	<MDA
^{60}Co	8	<MDA	—	—	< MDA
^{131}I *	9	141 (4/24) 17 - 288	H-51 1 mi., N/NNW	158 (2/12) 27 - 288	295 (8/20) 8 - 1220
^{134}Cs	8	<MDA	—	—	<MDA
^{137}Cs	8	<MDA	—	—	17 (1/12)
^{210}Pb	—	257 (2/24) 181 - 333	H-51 1 mi., N/NNW	257 (2/12) 181 - 333	201 (4/18) 109 - 408
^{212}Pb	—	<MDA	H-51 1 mi., N/NNW	22 (2/12) 4 - 39	<MDA
^{226}Ra	189	215 (4/24) 70 - 405	H-52 1 mi., S/SSE	292 (2/12) 179 - 405	<MDA

* Additional samples taken from March 22 through May 10 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
Name of Facility St. Lucie Units 1 & 2, Docket No(s). 50-335 & 50-389
Location of Facility St. Lucie, 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

DEVIATIONS / MISSING DATA

A)	Pathway:	Direct Exposure - TLDs
	Location:	S-5, 5.2 Miles South
	Dates:	9/14/11 – 12/6/11
	Deviation:	Failure to perform continuous monitoring
	Description of Problem:	TLD missing, not found during collection attempt.
	Corrective Action:	Replaced TLD.
B)	Pathway:	Airborne, Particulates & Radioiodine
	Location:	H-30, 2.0 miles West
	Dates:	5/10/11 – 5/17/11
	Deviation:	Failure to perform continuous monitoring
	Description of Problem:	Sample pump failure during sampling period; estimated sampling duration of 145 hours of 168 hour sampling period.
	Corrective Action:	Replaced pump, verified equipment as operable.
C)	Pathway:	Airborne, Particulates & Radioiodine
	Location:	H-14, 1.0 mile Southeast
	Dates:	6/28/11 – 7/6/11
	Deviation:	Failure to perform continuous monitoring
	Description of Problem:	Sample pump failure during sampling period; estimated sampling duration of 54 hours of 189 hour sampling period.
	Corrective Action:	Replaced pump, verified equipment as operable.
D)	Pathway:	Airborne, Particulates & Radioiodine
	Location:	H-34, 0.5 miles North
	Dates:	11/9/11 – 11/16/11
	Deviation:	Failure to perform continuous monitoring
	Description of Problem:	Sample pump failure during sampling period; estimated sampling duration of 49 hours of 170 hour sampling period.
	Corrective Action:	Replaced pump, verified equipment as operable.

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TABLE 1B

ANALYSIS WITH LLDs ABOVE THE REQUIRED DETECTION CAPABILITIES
(LLDs) Listed in ODCM TABLE 4.12-1
1/1/2011 – 12/31/2011

The values specified in ODCM Table 4.12-1, Detection Capabilities, were achieved for all samples.

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TABLE 2

LAND USE CENSUS
(Page 1 of 2)

Survey Performed June & July 2011

Distance to Nearest (a, b)

Sector	Milk (c) Animal	Residence	Garden (d)
N	O (e)	O	O
NNE	O	O	O
NE	O	O	O
ENE	O	O	O
E	O	O	O
ESE	O	O	O
SE	O	1.5/142	O
SSE	L (f)	2.0/149 (g)	L
S	L	3.3/190	L
SSW	L	2.2/212	4.4/207
SW	L	1.9/235	L
WSW	L	1.9/240	2.0/250
W	L	1.9/260	L
WNW	L	2.3/281	L
NW	L	3.4/304	L
NNW	L	2.7/344	L

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TABLE 2

LAND USE CENSUS
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NOTES

a. All categories surveyed out to a 5-mile radius from the St. Lucie Plant.

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

distance (miles)/bearing (degrees)

For example, a residence located in the southeast sector at a distance of 1.5 miles bearing 142 degrees is recorded as 1.5/142.

c. Potential milk animal locations.

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

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

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

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

Sector	Distance	Description
SSE	1.8/147	Fire Station

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ATTACHMENT A

KEY TO SAMPLE LOCATIONS

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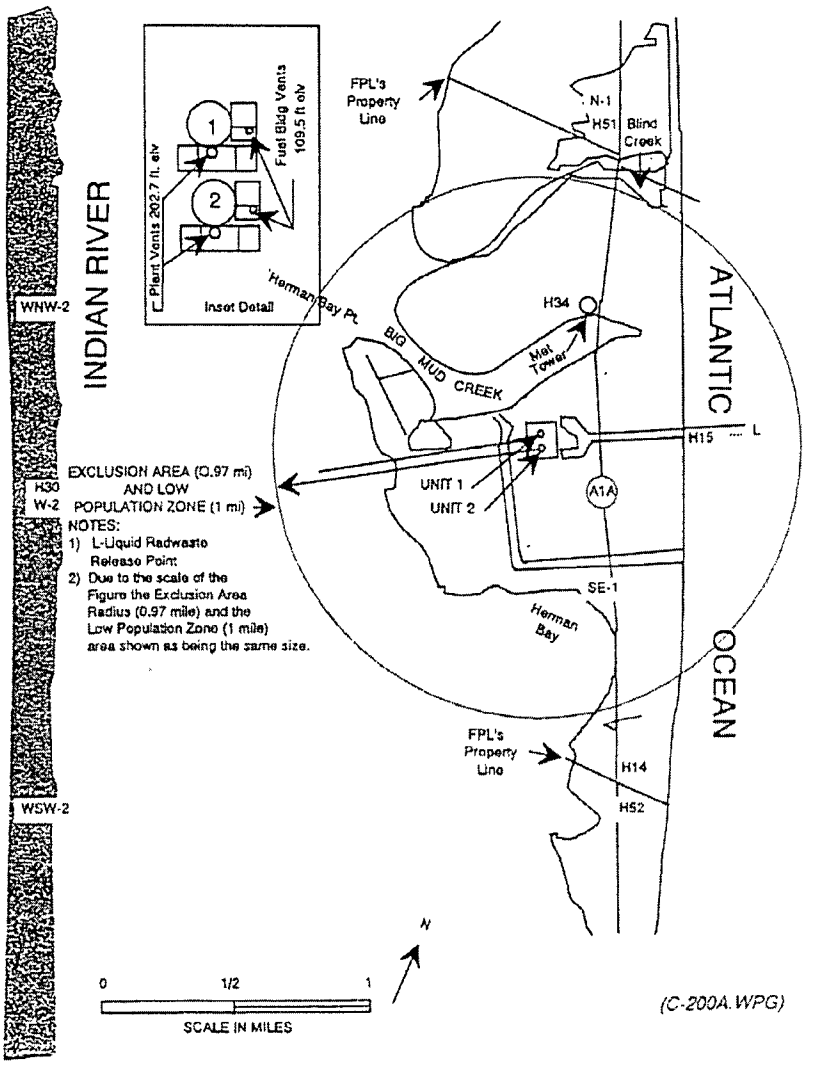
SITE AREA MAP & ENVIRONMENTAL SAMPLE LOCATIONS



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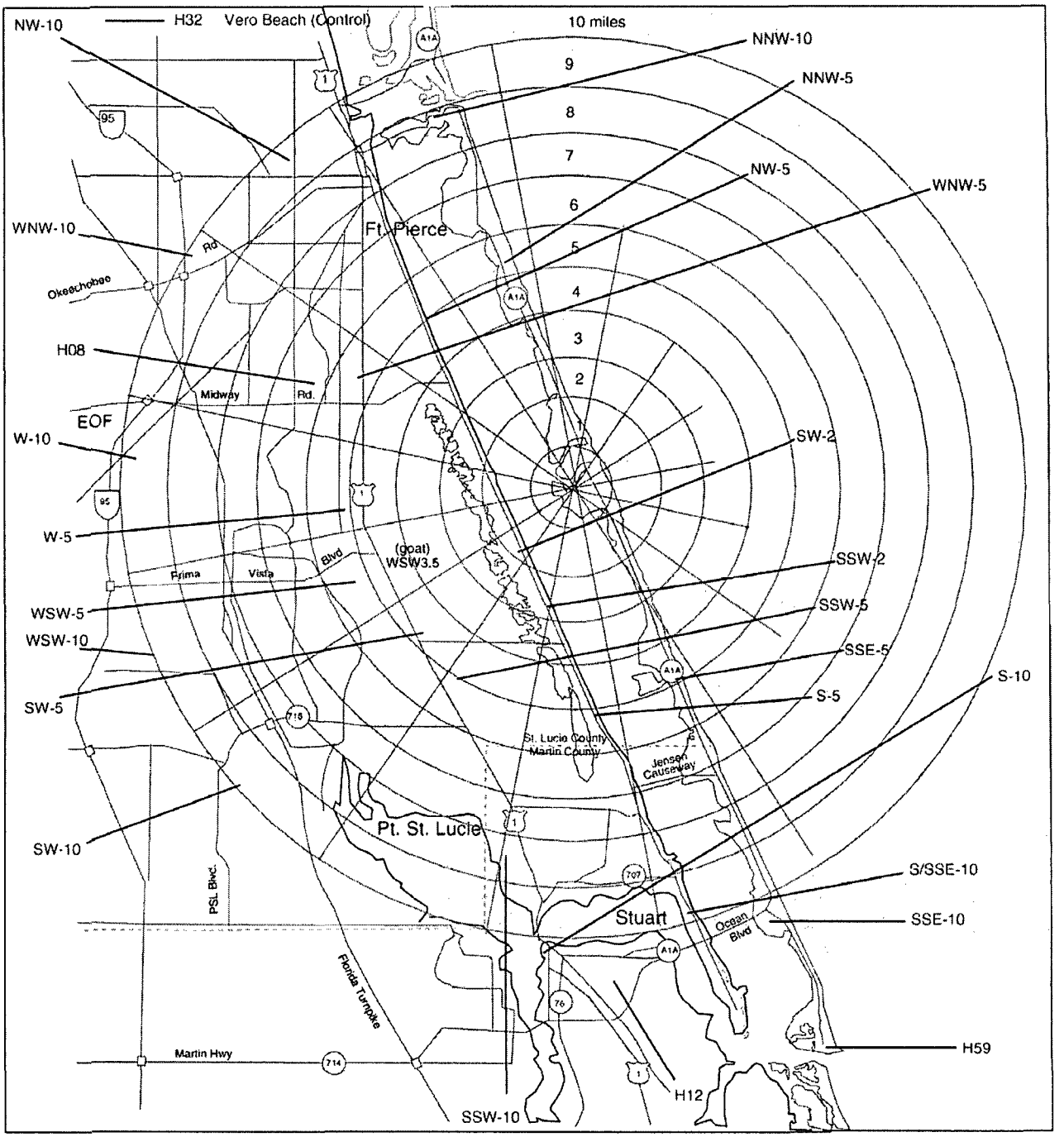
ENVIRONMENTAL SAMPLE LOCATIONS (10 MILES)



(P/CHEM/C-200B-F2-R0)

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ATTACHMENT A

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

Location Name	Direction Sector	Approximate Distance (miles)	Description
N-1	N	1	A1A, North of Blind Creek
NNW-5	NNW	4.8	Frederick Douglas Beach Entrance
NNW-10	NNW	8.7	Coast Guard Station
NW-5	NW	5.4	Indian River Dr., at Rio Vista Dr.
NW-10	NW	9.6	FPL Facility, S.R. 68 at 33RD St.
WNW-2	WNW	2.3	Cemetery South of 7107 Indian River Dr.
WNW-5	WNW	5.1	U.S. 1 at S.R. 712
WNW-10	WNW	10	S.R. 70, West of Turnpike
W-2	W	2	7609 Indian River Drive
W-5	W	5.4	Oleander and Sager Street
W-10	W	10.3	Interstate 95 at S.R. 709
WSW-2	WSW	1.8	8503 Indian River Dr.
WSW-5	WSW	5.6	Prima Vista at Yacht Club
WSW-10	WSW	10	Del Rio at Davis Street
SW-2	SW	2	9207 Indian River Drive
SW-5	SW	4.5	U.S. 1 at Village Green Dr.
SW-10	SW	10.2	Port St. Lucie Blvd. at Cairo Rd.
SSW-2	SSW	2.6	10307 Indian River Drive
SSW-5	SSW	6	U.S. 1 at Port St. Lucie Blvd.
SSW-10	SSW	8	Pine Valley at Westmoreland Rd.
S-5	S	5.2	13179 Indian River Drive
S-10	S	10.8	U.S. 1 at S.R. 714
S/SSE-10	SSE	9.9	Indian River Dr. at Quail Run Lane
SSE-5	SSE	5.1	North of entrance to Miramar
SSE-10	SSE	10.2	Elliot Museum
SE-1	SE	1	South of Cooling Canal
Control:			
H-32	NNW	18.1	University of Florida IFAS Vero Beach

ATTACHMENT A

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

Location Name	Direction Sector	Approximate Distance (miles)	Description
H-08	WNW	6	FPL Substation, Weatherbee Rd.
H-14	SE	1	On-Site, near south property line
H-30	W	2	Power Line, 7609 Indian River Drive
H-34	N	0.5	On-Site at Meteorology Tower
Control:			
H-12	S	12	FPL Substation, SR-76 Stuart

PATHWAY: WATERBORNE
SAMPLES COLLECTED: SURFACE WATER (OCEAN)
SAMPLE COLLECTION FREQUENCY: H-15 WEEKLY, H-59 MONTHLY

Location Name	Direction Sector	Approximate Distance (miles)	Description
H-15	ENE/E/SSE	<1	Atlantic Ocean, public beaches east side A1A
Control:			
H-59	S/SSE	10-20	Near south end of Hutchinson Island

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

Location Name	Direction Sector	Approximate Distance (miles)	Description
H-15	ENE/E/ESE	<1	Atlantic Ocean, public beaches east side A1A
Control:			
H-59	S/SSE	10-20	Near south end of Hutchinson Island

ATTACHMENT A

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

Location Name	Direction Sector	Approximate Distance (miles)	Description
H-15	ENE/E/ESE	<1	Ocean Side, Vicinity of St. Lucie Plant
Control:			
H-59	S/SSE	10-20	Near south end of Hutchinson Island

SAMPLES COLLECTED: BROAD LEAF VEGETATION
SAMPLE COLLECTION FREQUENCY: MONTHLY

Location Name	Direction Sector	Approximate Distance (miles)	Description
H-51	N/NNW	1	Off-Site Near North Property Line
H-52	S/SSE	1	Off-Site Near South Property Line
Control:			
H-59	S/SSE	10-20	Near south end of Hutchinson Island

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ATTACHMENT B

RADIOLOGICAL SURVEILLANCE OF

FLORIDA POWER AND LIGHT COMPANY

ST. LUCIE SITE

2011

First Quarter 2011

Second Quarter 2011

Third Quarter 2011

Fourth Quarter 2011

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RADIOLOGICAL SURVEILLANCE

OF

FLORIDA POWER AND LIGHT COMPANY

ST. LUCIE PLANT

FIRST QUARTER 2011

BUREAU OF RADIATION CONTROL

ST. LUCIE SITE

Offsite Dose Calculation Manual Sampling

First Quarter, 2011

Sample Type	Collection Frequency	Number of Sample Locations	Number of Samples
1. Direct Radiation	Quarterly	27	27
2. Airborne			
2.a. Air Iodines	Weekly	5	65
2.b. Air Particulates	Weekly	5	65
3. Waterborne			
3.a. Surface Water	Weekly	1	13
	Monthly	1	3
3.b. Shoreline Sediment	Semiannually	2	2
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	11
			Total: 188

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 07-Dec-10 Collection 08-Mar-11	Sample Site	Deployment 07-Dec-10 Collection 08-Mar-11
N-1	3.9 ± 0.4	SW-2	4.4 ± 0.4
NNW-5	4.1 ± 0.5	SW-5	5.5 ± 0.6
NNW-10	5.2 ± 0.5	SW-10	4.8 ± 0.5
NW-5	4.2 ± 0.5	SSW-2	4.5 ± 0.5
NW-10	5.7 ± 0.5	SSW-5	5.1 ± 0.6
WNW-2	4.4 ± 0.4	SSW-10	5.0 ± 0.6
WNW-5	4.3 ± 0.5	S-5	5.5 ± 0.5
WNW-10	5.0 ± 0.5	S-10	4.7 ± 0.4
W-2	4.2 ± 0.4	S/SSE-10	4.4 ± 0.5
W-5	4.9 ± 0.6	SSE-5	4.1 ± 0.4
W-10	4.5 ± 0.5	SSE-10	4.5 ± 0.4
WSW-2	4.6 ± 0.4	SE-1	4.2 ± 0.4
WSW-5	4.3 ± 0.4	H-32	5.2 ± 0.6
WSW-10	4.0 ± 0.5		

2.a. IODINE-131 IN WEEKLY AIR CARTRIDGES - (pCi/ m^3)

Collection Date	H08	H12	H14	H30	H34
04-Jan-11	<0.02	<0.03	<0.02	<0.02	<0.02
11-Jan-11	<0.02	<0.02	<0.02	<0.02	<0.02
19-Jan-11	<0.02	<0.02	<0.02	<0.02	<0.02
24-Jan-11	<0.04	<0.04	<0.04	<0.04	<0.04
01-Feb-11	<0.02	<0.02	<0.02	<0.02	<0.02
07-Feb-11	<0.03	<0.03	<0.03	<0.03	<0.03
14-Feb-11	<0.02	<0.02	<0.02	<0.02	<0.02
22-Feb-11	<0.02	<0.02	<0.02	<0.02	<0.02
01-Mar-11	<0.02	<0.02	<0.02	<0.02	<0.02
08-Mar-11	<0.02	<0.02	<0.02	<0.02	<0.02
14-Mar-11	<0.03	<0.03	<0.03	<0.03	<0.03
22-Mar-11(A)	0.259 ± 0.011	0.283 ± 0.013	0.411 ± 0.023	0.245 ± 0.012	0.341 ± 0.014
29-Mar-11(A)	0.399 ± 0.024	0.467 ± 0.025	0.272 ± 0.021	0.233 ± 0.024	0.227 ± 0.021

(A) Iodine levels attributed to Japan incident.

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

Collection Date	H08	H12	H14	H30	H34
04-Jan-11	0.026 ± 0.003	0.018 ± 0.003	0.022 ± 0.003	0.017 ± 0.002	0.023 ± 0.003
11-Jan-11	0.025 ± 0.003	0.025 ± 0.003	0.030 ± 0.003	0.020 ± 0.002	0.027 ± 0.003
19-Jan-11	0.019 ± 0.002	0.017 ± 0.002	0.017 ± 0.002	0.016 ± 0.002	0.014 ± 0.002
24-Jan-11	0.018 ± 0.003	0.014 ± 0.003	0.032 ± 0.003	0.021 ± 0.003	0.024 ± 0.003
01-Feb-11	0.024 ± 0.002	0.020 ± 0.002	0.019 ± 0.002	0.019 ± 0.002	0.016 ± 0.002
07-Feb-11	0.014 ± 0.002	0.011 ± 0.002	0.014 ± 0.002	0.010 ± 0.002	0.017 ± 0.003
14-Feb-11	0.018 ± 0.002	0.014 ± 0.002	0.020 ± 0.002	0.016 ± 0.002	0.016 ± 0.002
22-Feb-11	0.019 ± 0.002	0.019 ± 0.002	0.015 ± 0.002	0.016 ± 0.002	0.014 ± 0.002
01-Mar-11	0.008 ± 0.002	0.017 ± 0.002	0.019 ± 0.002	0.013 ± 0.002	0.013 ± 0.002
08-Mar-11	0.016 ± 0.002	0.011 ± 0.002	0.010 ± 0.002	0.011 ± 0.002	0.013 ± 0.002
14-Mar-11	0.012 ± 0.002	0.010 ± 0.002	0.026 ± 0.003	0.016 ± 0.002	0.016 ± 0.002
22-Mar-11(A)	0.105 ± 0.004	0.108 ± 0.004	0.096 ± 0.004	0.115 ± 0.005	0.097 ± 0.004
29-Mar-11(A)	0.029 ± 0.003	0.047 ± 0.003	0.038 ± 0.003	0.031 ± 0.003	0.058 ± 0.004
Average:	0.026 ± 0.001	0.025 ± 0.001	0.027 ± 0.001	0.025 ± 0.001	0.027 ± 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
H08	0.1634 ± 0.0106	<0.0187	0.2095 ± 0.0259	<0.0019	<0.0015	0.0188 ± 0.0028
H12	0.1677 ± 0.0106	<0.0172	0.2182 ± 0.0270	<0.0021	0.0008 ± 0.0003	0.0202 ± 0.0030
H14	0.2151 ± 0.0128	<0.0164	0.4738 ± 0.0431	0.0021 ± 0.0003	0.0023 ± 0.0004	0.0280 ± 0.0041
H30	0.1684 ± 0.0108	<0.0178	0.2557 ± 0.0283	<0.0021	<0.0019	0.0189 ± 0.0029
H34	0.2095 ± 0.0139	<0.0183	0.2150 ± 0.0469	<0.0021	<0.0015	0.0221 ± 0.0044

(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)
H15	04-Jan-11	<135	359 ± 22	<3	<3	<8	<4	<9	<6	<4	<4	<4	<7
	11-Jan-11	<135	346 ± 24	<4	<4	<8	<4	<8	<6	<4	<4	<4	<14
	19-Jan-11	<130	353 ± 27	<3	<2	<6	<3	<6	<4	<4	<3	<3	<3
	24-Jan-11	<130	370 ± 33	<4	<4	<8	<4	<9	<7	<5	<4	<4	<12
	01-Feb-11	<139	362 ± 38	<4	<4	<8	<5	<10	<6	<6	<5	<4	<5
	07-Feb-11	<139	384 ± 23	<2	<2	<5	<3	<6	<4	<3	<3	<3	<7
	14-Feb-11	<139	345 ± 24	<4	<3	<8	<4	<9	<6	<4	<4	<4	<14
	22-Feb-11	<144	366 ± 28	<3	<3	<7	<4	<7	<6	<7	<4	<4	<5
	01-Mar-11	<143	399 ± 36	<4	<4	<6	<4	<9	<6	<5	<4	<4	<7
	08-Mar-11	<155	313 ± 23	<4	<4	<8	<4	<9	<7	<4	<4	<4	<8
	14-Mar-11	<155	317 ± 17	<3	<3	<5	<3	<6	<4	<3	<3	<3	<6
	22-Mar-11	<156	328 ± 37	<4	<4	<7	<4	<5	<6	<5	<4	<4	<7
	29-Mar-11	<156	155 ± 36	<4	<4	<8	<4	<8	<6	<5	<5	<4	<12
H59	11-Jan-11	<135	445 ± 35	<4	<4	<9	<5	<10	<7	<4	<5	<4	<14
	02-Feb-11	<139	336 ± 24	<4	<4	<8	<4	<11	<7	<5	<4	<4	<10
	01-Mar-11	<143	293 ± 39	<5	<4	<7	<6	<8	<8	<5	<6	<5	<13

(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
H15	01-Feb-11	<71	402 ± 60	<7	<8	<10	<8	<443	817 ± 127	74 ± 11	<66	<285
H59	02-Feb-11	<73	246 ± 49	<7	<5	<8	<8	<421	470 ± 91	62 ± 9	<64	<281

4.a.1. CRUSTACEA - (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
H15	This sample to be collected next quarter.										
H59	This sample to be collected next quarter.										

4.a.2. FISH - Mixed Fish - (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
H15	01-Feb-11	1474 ± 135	<30	<24	<51	<29	<59	<32	<26	<501	<118
H59	02-Feb-11	2294 ± 170	<25	<25	<57	<27	<72	<29	<26	<494	<112

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
H51	11-Jan-11	815 ± 59	4412 ± 174	<14	<15	<13	<1649	<236	<61
	01-Feb-11	897 ± 69	4573 ± 171	<15	<15	<12	<836	<296	<51
	01-Mar-11	755 ± 67	4399 ± 161	<18	<12	<10	<979	<258	<56
H52	11-Jan-11	653 ± 62	5045 ± 206	<13	<12	<12	<1783	<257	<57
	01-Feb-11	920 ± 106	6702 ± 268	<20	<23	<21	<2150	405 ± 132	<82
	01-Mar-11	789 ± 97	6335 ± 253	<22	<14	<16	<1904	<282	<71
H59	11-Jan-11	559 ± 49	4511 ± 129	<12	<9	<9	408 ± 173	<196	<36
	02-Feb-11	506 ± 64	4652 ± 231	<17	<20	<16	<1932	<317	<73
	01-Mar-11	392 ± 41	3645 ± 116	<12	<9	<8	<997	<154	<36
H59J	22-Mar-11	382 ± 83	3301 ± 178	1220 ± 24	<16	<15	<2302	<386	<56
H59J	29-Mar-11	453 ± 22	3537 ± 66	605 ± 6	<5	<5	<383	<133	<18

H59J - Additional non-routine samples collected in response to Japan incident

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RADIOLOGICAL SURVEILLANCE

OF

FLORIDA POWER AND LIGHT COMPANY

ST. LUCIE PLANT

SECOND QUARTER 2011

BUREAU OF RADIATION CONTROL

ST. LUCIE SITE

Offsite Dose Calculation Manual Sampling

Second Quarter, 2011

Sample Type	Collection Frequency	Locations Sampled	Number of Samples
1. Direct Radiation	Quarterly	27	27
2. Airborne			
2.a. Air Iodines	Weekly	5	65
2.b. Air Particulates	Weekly	5	65
3. Waterborne			
3.a. Surface Water	Weekly	1	13
	Monthly	1	3
3.b. Shoreline Sediment	Semiannually	2	0
4. Ingestion			
4.a. Fish and Invertebrates			
4.a.1. Crustacea	Semiannually	2	2
4.a.2. Fish	Semiannually	2	0
4.b. Broadleaf Vegetation	Monthly	3	15
			Total: 190

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 08-Mar-11 Collection 07-Jun-11	Sample Site	Deployment 08-Mar-11 Collection 07-Jun-11
N-1	4.3 ± 0.4	SW-2	4.0 ± 0.4
NNW-5	4.6 ± 0.5	SW-5	5.0 ± 0.5
NNW-10	4.7 ± 0.5	SW-10	4.4 ± 0.4
NW-5	3.7 ± 0.4	SSW-2	4.1 ± 0.5
NW-10	5.2 ± 0.5	SSW-5	4.6 ± 0.5
WNW-2	4.0 ± 0.4	SSW-10	4.9 ± 0.5
WNW-5	4.1 ± 0.3	S-5	5.3 ± 0.5
WNW-10	4.6 ± 0.4	S-10	4.2 ± 0.5
W-2	3.7 ± 0.4	S/SSE-10	4.1 ± 0.4
W-5	4.3 ± 0.5	SSE-5	3.9 ± 0.4
W-10	4.5 ± 0.5	SSE-10	4.1 ± 0.3
WSW-2	4.3 ± 0.5	SE-1	3.9 ± 0.4
WSW-5	4.3 ± 0.5	H-32	4.7 ± 0.6
WSW-10	3.8 ± 0.4		

2.a. IODINE-131 IN WEEKLY AIR CARTRIDGES - (pCi/ m^3)

Collection Date	H08	H12	H14	H30	H34
06-Apr-11(A)	0.021 ± 0.003	0.018 ± 0.003	0.078 ± 0.012	0.013 ± 0.010	0.025 ± 0.004
13-Apr-11(A)	<0.03	<0.03	0.024 ± 0.008	<0.03	<0.02
20-Apr-11	<0.02	<0.02	<0.02	<0.02	<0.02
26-Apr-11	<0.03	<0.03	<0.03	<0.03	<0.03
03-May-11	<0.02	<0.02	<0.02	<0.02	<0.02
10-May-11	<0.03	<0.03	<0.03	<0.03	<0.03
17-May-11	<0.03	<0.03	<0.03	<0.03(B)	<0.03
25-May-11	<0.02	<0.02	<0.02	<0.02	<0.02
01-Jun-11	<0.02	<0.02	<0.02	<0.02	<0.02
07-Jun-11	<0.03	<0.03	<0.03	<0.03	<0.03
14-Jun-11	<0.03	<0.03	<0.03	<0.03	<0.03
21-Jun-11	<0.02	<0.02	<0.02	<0.02	<0.02
28-Jun-11	<0.02	<0.02	<0.02	<0.02	<0.02

(A) Iodine levels are attributed to the Japan incident in March.
(B) Vacuum pump failed and was replaced. Estimated run time 145 out of 167.6 hours.

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

Collection Date	H08	H12	H14	H30	H34
06-Apr-11	0.013 ± 0.002	0.009 ± 0.002	0.020 ± 0.002	0.006 ± 0.002	0.015 ± 0.002
13-Apr-11	0.016 ± 0.002	0.014 ± 0.002	0.012 ± 0.002	0.012 ± 0.002	0.016 ± 0.002
20-Apr-11	0.018 ± 0.002	0.016 ± 0.002	0.019 ± 0.002	0.022 ± 0.002	0.016 ± 0.002
26-Apr-11	0.008 ± 0.002	0.006 ± 0.002	0.011 ± 0.002	0.009 ± 0.002	0.013 ± 0.002
03-May-11	0.015 ± 0.002	0.011 ± 0.002	0.019 ± 0.002	0.016 ± 0.002	0.018 ± 0.002
10-May-11	0.018 ± 0.002	0.018 ± 0.002	0.019 ± 0.002	0.016 ± 0.002	0.018 ± 0.002
17-May-11	0.011 ± 0.002	0.020 ± 0.002	0.025 ± 0.003	0.015 ± 0.002(A)	0.017 ± 0.002
25-May-11	0.012 ± 0.002	0.019 ± 0.002	0.016 ± 0.002	0.021 ± 0.002	0.017 ± 0.002
01-Jun-11	0.013 ± 0.002	0.008 ± 0.002	0.008 ± 0.002	0.007 ± 0.002	0.010 ± 0.002
07-Jun-11	0.009 ± 0.002	0.015 ± 0.002	0.015 ± 0.002	0.011 ± 0.002	0.010 ± 0.002
14-Jun-11	0.015 ± 0.002	0.017 ± 0.002	0.010 ± 0.002	0.012 ± 0.002	0.015 ± 0.002
21-Jun-11	0.015 ± 0.002	0.019 ± 0.002	0.016 ± 0.002	0.018 ± 0.002	0.015 ± 0.002
28-Jun-11	0.016 ± 0.002	0.013 ± 0.002	0.010 ± 0.002	0.013 ± 0.002	0.013 ± 0.002
Average:	0.014 ± 0.001	0.014 ± 0.001	0.015 ± 0.001	0.014 ± 0.001	0.015 ± 0.001

(A) Vacuum pump failed and was replaced. Estimated run time 145 out of 167.6 hours.

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

Sample Site	Be-7	K-40	Cs-134	Cs-137	Pb-210
H08	0.1498 ± 0.0074	<0.0142	<0.0012	<0.0011	0.0134 ± 0.0018
H12	0.1641 ± 0.0105	<0.0200	<0.0017	<0.0013	0.0167 ± 0.0027
H14	0.1391 ± 0.0096	<0.0230	<0.0017	<0.0014	0.0163 ± 0.0026
H30	0.1551 ± 0.0074	<0.0125	<0.0012	<0.0010	0.0139 ± 0.0018
H34	0.1791 ± 0.0126	<0.0215	<0.0014	<0.0011	0.0245 ± 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)
H15	06-Apr-11	<145	341 ± 34	<3	<3	<7	<4	<7	<7	<5	<3	<4	<7
	13-Apr-11	<134	381 ± 17	<2	<2	<3	<2	<3	<3	<2	<2	<2	<4
	20-Apr-11	<134	320 ± 23	<4	<3	<7	<4	<9	<6	<4	<4	<4	<12
	26-Apr-11	<134	353 ± 24	<4	<3	<8	<4	<8	<7	<4	<4	<4	<13
	03-May-11	<141	390 ± 35	<3	<3	<8	<4	<9	<5	<4	<5	<4	<12
	10-May-11	<141	313 ± 23	<4	<3	<8	<4	<9	<6	<4	<4	<4	<8
	17-May-11	<133	406 ± 24	<2	<3	<6	<4	<6	<4	<3	<3	<3	<7
	25-May-11	<133	332 ± 23	<2	<2	<5	<3	<5	<4	<3	<3	<3	<8
	01-Jun-11	<133	371 ± 26	<4	<4	<7	<4	<8	<7	<4	<4	<4	<13
	07-Jun-11	<138	319 ± 23	<4	<3	<7	<4	<9	<7	<4	<4	<4	<8
	14-Jun-11	<138	378 ± 25	<4	<4	<8	<4	<10	<7	<4	<4	<4	<13
	21-Jun-11	<131	329 ± 23	<4	<4	<7	<4	<9	<6	<4	<4	<4	<14
	28-Jun-11	<151	331 ± 35	<3	<3	<8	<5	<8	<7	<4	<4	<5	<5
H59	06-Apr-11	<145	435 ± 46	<5	<5	<13	<5	<13	<11	<8	<6	<6	<8
	03-May-11	<141	369 ± 37	<4	<4	<7	<5	<8	<7	<5	<4	<4	<8
	01-Jun-11	<133	358 ± 36	<4	<4	<8	<5	<8	<5	<5	<5	<4	<10

(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 - Mixed Crustacea - (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
H15	14-Jun-11	2040 ± 171	<18	<17	<36	<20	<37	<27	<20	<352	<89
H59	26-Apr-11	2912 ± 215	<20	<21	<38	<23	<44	<26	<25	<443	<111

4.a.2. FISH - (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
H15	This sample was previously collected.										
H59	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(A)	Cs-134	Cs-137	Pb-210	Pb-212	Ra-226	Ra-228
H51	06-Apr-11	781 ± 51	3999 ± 122	288 ± 8	<11	<9	<1219	<54	<184	<41
	03-May-11	741 ± 56	4152 ± 152	27 ± 6	<12	<12	<870	<98	<245	<39
	01-Jun-11	568 ± 67	4740 ± 209	<16	<17	<15	<1943	<85	<285	<74
H52	06-Apr-11	1040 ± 75	4666 ± 170	233 ± 10	<13	<13	<907	<92	<275	<49
	03-May-11	990 ± 65	5318 ± 231	17 ± 6	<14	<15	<1785	<74	<253	<68
	01-Jun-11	902 ± 60	4643 ± 157	<12	<10	<10	<860	<81	<217	<35
H59	06-Apr-11	775 ± 70	3572 ± 199	242 ± 12	<17	<16	<1937	<87	<287	<64
	03-May-11	609 ± 35	2858 ± 121	21 ± 3	<12	<11	<219	<21	<228	<44
	01-Jun-11	421 ± 80	2999 ± 203	<17	<17	<17	<1892	<76	<309	<54
H59J	13-Apr-11	1159 ± 83	2825 ± 182	136 ± 12	<15	<14	<2087	<83	<304	<54
	20-Apr-11	368 ± 78	3797 ± 198	79 ± 9	<16	<14	<1737	<77	<281	<56
	26-Apr-11	612 ± 73	2768 ± 164	45 ± 8	<14	<18	<1728	<85	417 ± 104	<61
	10-May-11	531 ± 32	3024 ± 132	8 ± 2	<12	<10	<197	<19	<211	<38
	17-May-11	415 ± 27	2857 ± 112	<17	<10	<10	<183	<17	<187	<37
	25-May-11	687 ± 34	3112 ± 121	<11	<11	<9	135 ± 28	6 ± 2	<201	<39

(A) Iodine levels are attributed to the Japan incident in March.
H59J - Additional non-routine samples collected in response to Japan incident; these collections concluded the end of May.

2011
ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT
ST. LUCIE PLANT – UNITS 1 & 2

RADIOLOGICAL SURVEILLANCE

OF

FLORIDA POWER AND LIGHT COMPANY

ST. LUCIE PLANT

THIRD QUARTER 2011

BUREAU OF RADIATION CONTROL

ST. LUCIE SITE

Offsite Dose Calculation Manual Sampling

Third Quarter, 2011

Sample Type	Collection Frequency	Locations Sampled	Number of Samples
1. Direct Radiation	Quarterly	27	27
2. Airborne			
2.a. Air Iodines	Weekly	5	65
2.b. Air Particulates	Weekly	5	65
3. Waterborne			
3.a. Surface Water	Weekly	1	13
	Monthly	1	3
3.b. Shoreline Sediment	Semiannually	2	2
4. Ingestion			
4.a. Fish and Invertebrates			
4.a.1. Crustacea	Semiannually	2	3
4.a.2. Fish	Semiannually	2	2
4.b. Broadleaf Vegetation	Monthly	3	9
			Total: 189

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 07-Jun-11 Collection 14-Sep-11	Sample Site	Deployment 07-Jun-11 Collection 14-Sep-11
N-1	3.6 ± 0.1	SW-2	3.3 ± 0.1
NNW-5	3.4 ± 0.1	SW-5	4.1 ± 0.2
NNW-10	4.3 ± 0.2	SW-10	3.7 ± 0.1
NW-5	3.7 ± 0.1	SSW-2	3.4 ± 0.1
NW-10	4.8 ± 0.3	SSW-5	4.1 ± 0.1
WNW-2	3.7 ± 0.1	SSW-10	3.9 ± 0.1
WNW-5	3.7 ± 0.2	S-5	4.4 ± 0.3
WNW-10	3.9 ± 0.2	S-10	3.5 ± 0.1
W-2	3.2 ± 0.1	S/SSE-10	3.3 ± 0.1
W-5	3.7 ± 0.2	SSE-5	3.4 ± 0.1
W-10	3.4 ± 0.1	SSE-10	3.5 ± 0.2
WSW-2	3.4 ± 0.1	SE-1	3.4 ± 0.1
WSW-5	3.4 ± 0.1	H-32	3.8 ± 0.1
WSW-10	3.2 ± 0.2		

2.a. IODINE-131 IN WEEKLY AIR CARTRIDGES - (pCi/ m^3)

Collection Date	H08	H12	H14	H30	H34
06-Jul-11	<0.02	<0.02	<0.02(A)	<0.02	<0.02
14-Jul-11	<0.02	<0.02	<0.02	<0.02	<0.02
19-Jul-11	<0.02	<0.02	<0.02	<0.02	<0.02
26-Jul-11	<0.02	<0.02	<0.02	<0.02	<0.02
02-Aug-11	<0.02	<0.02	<0.02	<0.02	<0.02
10-Aug-11	<0.02	<0.02	<0.02	<0.02	<0.02
16-Aug-11	<0.03	<0.03	<0.03	<0.03	<0.03
23-Aug-11	<0.02	<0.02	<0.02	<0.02	<0.02
30-Aug-11	<0.02	<0.02	<0.02	<0.02	<0.02
07-Sep-11	<0.02	<0.02	<0.02	<0.02	<0.02
14-Sep-11	<0.02	<0.02	<0.02	<0.02	<0.02
20-Sep-11	<0.03	<0.03	<0.03	<0.03	<0.03
27-Sep-11	<0.02	<0.02	<0.02	<0.02	<0.02

(A) Pump failed and was replaced. Estimated run time 53.9 out of 189.2 hours.

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

Collection Date	H08	H12	H14	H30	H34
06-Jul-11	0.011 ± 0.002	0.006 ± 0.002	0.010 ± 0.005(A)	0.006 ± 0.002	0.011 ± 0.002
14-Jul-11	0.005 ± 0.001	0.009 ± 0.002	0.005 ± 0.001	0.007 ± 0.001	0.007 ± 0.002
19-Jul-11	0.008 ± 0.002	0.008 ± 0.002	0.005 ± 0.002	0.010 ± 0.002	0.014 ± 0.003
26-Jul-11	0.006 ± 0.002	0.004 ± 0.002	0.006 ± 0.002	0.008 ± 0.002	0.009 ± 0.002
02-Aug-11	<0.006	0.009 ± 0.002	0.011 ± 0.002	0.010 ± 0.002	0.009 ± 0.002
10-Aug-11	0.011 ± 0.002	0.008 ± 0.002	0.010 ± 0.002	0.008 ± 0.002	0.010 ± 0.002
16-Aug-11	0.008 ± 0.002	0.006 ± 0.002	0.012 ± 0.002	0.010 ± 0.002	0.009 ± 0.002
23-Aug-11	0.011 ± 0.002	0.014 ± 0.002	0.013 ± 0.002	0.009 ± 0.002	0.013 ± 0.002
30-Aug-11	0.007 ± 0.002	0.011 ± 0.002	0.008 ± 0.002	0.008 ± 0.002	0.008 ± 0.002
07-Sep-11	0.008 ± 0.002	0.006 ± 0.001	0.009 ± 0.002	0.009 ± 0.002	0.009 ± 0.002
14-Sep-11	0.008 ± 0.002	0.009 ± 0.002	0.008 ± 0.002	0.006 ± 0.002	0.008 ± 0.002
20-Sep-11	0.005 ± 0.002	0.007 ± 0.002	0.009 ± 0.002	0.009 ± 0.002	0.013 ± 0.002
27-Sep-11	<0.007	<0.007	0.005 ± 0.002	<0.007	0.005 ± 0.002
Average:	<0.008	<0.008	0.009 ± 0.001	<0.008	0.010 ± 0.001

(A) Pump failed and was replaced. Estimated run time 53.9 out of 189.2 hours.

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

Sample Site	Be-7	K-40	Cs-134	Cs-137	Pb-210
H08	0.0624 ± 0.0066	<0.0214	<0.0016	<0.0014	0.0106 ± 0.0023
H12	0.0673 ± 0.0024	0.0042 ± 0.0008	<0.0005	<0.0004	0.0075 ± 0.0007
H14	0.0803 ± 0.0077	<0.0181	<0.0017	<0.0014	0.0074 ± 0.0021
H30	0.0658 ± 0.0068	<0.0231	<0.0015	<0.0014	0.0070 ± 0.0019
H34	0.0960 ± 0.0085	<0.0207	<0.0016	<0.0009	<0.0093

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)
H15	06-Jul-11	<128	315 ± 24	<4	<4	<8	<4	<9	<6	<4	<4	<4	<8
	14-Jul-11	<128	334 ± 24	<4	<4	<8	<4	<9	<6	<4	<4	<4	<12
	19-Jul-11	124 ± 25	340 ± 24	<4	<4	<8	<4	<10	<7	<5	<4	<4	<9
	26-Jul-11	110 ± 26	349 ± 24	<3	<3	<8	<4	<8	<7	<4	<3	<4	<13
	02-Aug-11	<138	359 ± 25	<4	<4	<8	<4	<8	<6	<4	<4	<4	<8
	10-Aug-11	<144	410 ± 36	<4	<3	<8	<3	<9	<5	<5	<5	<4	<9
	16-Aug-11	<144	460 ± 34	<4	<4	<8	<4	<10	<6	<4	<5	<4	<14
	23-Aug-11	175 ± 48	346 ± 24	<4	<4	<8	<4	<10	<7	<4	<4	<4	<8
	30-Aug-11	<141	395 ± 32	<3	<4	<7	<4	<7	<6	<5	<4	<4	<12
	07-Sep-11	<146	313 ± 23	<4	<3	<8	<5	<9	<6	<4	<4	<4	<12
	15-Sep-11	212 ± 50	308 ± 23	<4	<4	<8	<4	<10	<6	<4	<4	<4	<15
	20-Sep-11	<144	316 ± 23	<4	<3	<8	<4	<9	<6	<4	<4	<4	<8
	27-Sep-11	97 ± 46	327 ± 38	<3	<4	<8	<4	<8	<6	<4	<5	<4	<11
H59	06-Jul-11	<135	363 ± 11	<1	<1	<4	<1	<2	<2	<5	<1	<1	<13
	02-Aug-11	94 ± 25	418 ± 44	<5	<5	<8	<7	<10	<9	<5	<6	<4	<8
	15-Sep-11	<134	331 ± 37	<3	<4	<7	<4	<10	<6	<5	<5	<4	<10

(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
H15	02-Aug-11	<94	1097 ± 61	<11	<11	<12	<11	452 ± 57	<163	137 ± 12	39 ± 3	267 ± 24
H59	02-Aug-11	<79	258 ± 28	<8	<9	<9	<8	287 ± 41	229 ± 69	50 ± 7	<8	203 ± 19

4.a.1. CRUSTACEA - #Fiddler Crab - *Mixed 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
H15#	10-Aug-11	1800 ± 268	<29	<28	<63	<29	<77	<33	<29	892 ± 76	<119
H15*	20-Sep-11	1675 ± 145	<27	<25	<52	<29	<56	<29	<27	<481	<109
H59†	02-Aug-11	1627 ± 144	<29	<26	<55	<25	<76	<31	<32	<572	<126

4.a.2. FISH - *Mixed Species - #Mangrove Snapper - (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
H15*	03-Aug-11	3526 ± 236	<23	<21	<56	<29	<49	<24	<22	<379	<100
H59#	15-Sep-11	2572 ± 181	<24	<25	<48	<32	<60	<28	<28	<498	<110

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
H51	06-Jul-11	884 ± 52	5226 ± 147	<10	<10	<10	<1230	<52	206 ± 72	<43
	02-Aug-11	328 ± 58	4801 ± 193	<13	<14	<11	<1685	<70	<249	<62
	14-Sep-11	860 ± 39	3400 ± 129	<14	<11	<10	181 ± 30	<18	70 ± 26	<45
H52	06-Jul-11	750 ± 115	5216 ± 321	<20	<26	<21	<2746	<117	<364	<74
	02-Aug-11	420 ± 57	3942 ± 154	<59	<13	<10	<1325	<57	179 ± 69	<46
	14-Sep-11	836 ± 65	6227 ± 190	<17	<14	<11	<980	<86	<227	<44
H59	06-Jul-11	1333 ± 62	3861 ± 169	<14	<15	<15	<286	<26	<290	<56
	02-Aug-11	624 ± 47	2359 ± 100	<8	<8	<8	<1050	<46	<132	<35
	14-Sep-11	1028 ± 42	3439 ± 127	<14	<10	<10	129 ± 27	<17	<200	<39

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ST. LUCIE PLANT – UNITS 1 & 2

RADIOLOGICAL SURVEILLANCE

OF

FLORIDA POWER AND LIGHT COMPANY

ST. LUCIE SITE

FOURTH QUARTER 2011

BUREAU OF RADIATION CONTROL

ST. LUCIE SITE

Offsite Dose Calculation Manual Sampling

Fourth Quarter, 2011

Sample Type	Collection Frequency	Locations Sampled	Number of Samples
1. Direct Radiation	Quarterly	27	26
2. Airborne			
2.a. Air Iodines	Weekly	5	65
2.b. Air Particulates	Weekly	5	65
3. Waterborne			
3.a. Surface Water	Weekly	1	13
	Monthly	1	3
3.b. Shoreline Sediment	Semiannually	2	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: 181

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-Sep-11 Collection 06-Dec-11	Sample Site	Deployment 14-Sep-11 Collection 06-Dec-11
N-1	3.4 ± 0.1	SW-2	3.2 ± 0.2
NNW-5	3.4 ± 0.1	SW-5	3.9 ± 0.1
NNW-10	3.9 ± 0.1	SW-10	3.4 ± 0.2
NW-5	3.4 ± 0.1	SSW-2	3.1 ± 0.1
NW-10	4.3 ± 0.1	SSW-5	3.9 ± 0.1
WNW-2	3.5 ± 0.2	SSW-10	3.6 ± 0.1
WNW-5	3.2 ± 0.2	S-5	(A)
WNW-10	3.6 ± 0.1	S-10	3.5 ± 0.2
W-2	3.1 ± 0.1	S/SSE-10	3.3 ± 0.1
W-5	3.5 ± 0.1	SSE-5	3.1 ± 0.2
W-10	3.2 ± 0.2	SSE-10	3.3 ± 0.1
WSW-2	3.5 ± 0.1	SE-1	3.2 ± 0.1
WSW-5	3.3 ± 0.1	H-32	3.6 ± 0.2
WSW-10	3.0 ± 0.1		

(A) TLD missing; no data to report.

2.a. IODINE-131 IN WEEKLY AIR CARTRIDGES - (pCi/ m^3)

Collection Date	H08	H12	H14	H30	H34
04-Oct-11	<0.02	<0.02	<0.02	<0.02	<0.02
11-Oct-11	<0.02	<0.02	<0.02	<0.02	<0.02
18-Oct-11	<0.02	<0.02	<0.02	<0.02	<0.02
25-Oct-11	<0.02	<0.02	<0.02	<0.02	<0.02
01-Nov-11	<0.02	<0.02	<0.02	<0.02	<0.02
09-Nov-11	<0.01	<0.01	<0.01	<0.01	<0.01
16-Nov-11	<0.02	<0.02	<0.02	<0.02	<0.02(A)
22-Nov-11	<0.02	<0.02	<0.02	<0.02	<0.02
29-Nov-11	<0.02	<0.02	<0.02	<0.02	<0.02
06-Dec-11	<0.02	<0.02	<0.02	<0.02	<0.02
13-Dec-11	<0.02	<0.02	<0.02	<0.02	<0.02
21-Dec-11	<0.02	<0.02	<0.02	<0.02	<0.02
28-Dec-11	<0.01	<0.01	<0.01	<0.01	<0.01

(A) Vacuum pump failed, not running, was replaced. Estimated run time 48.5 out of 169.7 hours.

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

Collection Date	H08	H12	H14	H30	H34
04-Oct-11	0.008 ± 0.002	0.010 ± 0.002	0.007 ± 0.002	0.009 ± 0.002	0.010 ± 0.002
11-Oct-11	0.014 ± 0.002	0.011 ± 0.002	0.015 ± 0.002	0.012 ± 0.002	0.008 ± 0.002
18-Oct-11	0.010 ± 0.002	0.011 ± 0.002	0.010 ± 0.002	0.009 ± 0.002	0.013 ± 0.002
25-Oct-11	0.013 ± 0.002	0.011 ± 0.002	0.020 ± 0.002	0.016 ± 0.002	0.017 ± 0.002
01-Nov-11	0.005 ± 0.002	0.007 ± 0.002	0.011 ± 0.002	0.009 ± 0.002	0.012 ± 0.002
09-Nov-11	0.006 ± 0.001	0.010 ± 0.002	0.016 ± 0.002	0.009 ± 0.002	0.014 ± 0.002
16-Nov-11	0.011 ± 0.002	0.011 ± 0.002	0.014 ± 0.002	0.011 ± 0.002	0.019 ± 0.005(A)
22-Nov-11	0.005 ± 0.002	0.006 ± 0.002	0.012 ± 0.002	0.005 ± 0.002	0.012 ± 0.002
29-Nov-11	0.006 ± 0.002	0.003 ± 0.001	0.007 ± 0.002	0.011 ± 0.002	0.011 ± 0.002
06-Dec-11	0.008 ± 0.002	0.008 ± 0.002	0.013 ± 0.002	0.008 ± 0.002	0.013 ± 0.002
13-Dec-11	0.005 ± 0.002	0.007 ± 0.002	0.009 ± 0.002	0.004 ± 0.002	0.010 ± 0.002
21-Dec-11	0.017 ± 0.002	0.019 ± 0.002	0.012 ± 0.002	0.014 ± 0.002	0.014 ± 0.002
28-Dec-11	0.006 ± 0.002	0.004 ± 0.002	0.005 ± 0.002	<0.007	0.006 ± 0.002
Average:	0.009 ± 0.001	0.009 ± 0.001	0.012 ± 0.001	<0.010	0.012 ± 0.001

(A) Vacuum pump failed, not running, was replaced. Estimated run time 48.5 out of 169.7 hours.

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

Sample Site	Be-7	K-40	Cs-134	Cs-137	Pb-210
H08	0.0978 ± 0.0115	<0.0299	<0.0017	<0.0016	<0.0851
H12	0.1007 ± 0.0083	<0.0188	<0.0019	<0.0015	0.0057 ± 0.0019
H14	0.1367 ± 0.0125	<0.0235	<0.0019	<0.0016	<0.0804
H30	0.1036 ± 0.0124	<0.0281	<0.0022	<0.0015	<0.0902
H34	0.1098 ± 0.0089	<0.0206	<0.0018	<0.0014	0.0117 ± 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)
H15	04-Oct-11	<145	335 ± 39	<4	<3	<7	<5	<10	<7	<5	<5	<4	<9
	11-Oct-11	105 ± 26	318 ± 38	<3	<4	<7	<4	<7	<6	<5	<3	<4	<10
	18-Oct-11	<143	306 ± 34	<3	<4	<6	<5	<8	<7	<5	<4	<4	<8
	25-Oct-11	<143	330 ± 36	<2	<3	<6	<4	<7	<7	<4	<5	<4	<12
	01-Nov-11	<134	374 ± 34	<4	<3	<7	<3	<8	<6	<5	<4	<4	<6
	09-Nov-11	<138	343 ± 13	<2	<2	<3	<2	<4	<3	<2	<2	<2	<4
	16-Nov-11	<144	313 ± 23	<4	<4	<8	<4	<9	<6	<4	<3	<4	<9
	22-Nov-11	<144	430 ± 39	<3	<4	<7	<5	<10	<7	<4	<3	<4	<10
	29-Nov-11	<143	348 ± 24	<4	<3	<8	<4	<9	<7	<4	<4	<4	<14
	07-Dec-11	<152	301 ± 67	<3	<3	<7	<4	<8	<6	<4	<4	<4	<8
	13-Dec-11	<152	244 ± 31	<3	<3	<7	<5	<7	<6	<4	<5	<4	<12
	21-Dec-11	<153	381 ± 33	<3	<3	<7	<4	<9	<6	<4	<5	<4	<12
	28-Dec-11	<157	379 ± 22	<2	<2	<4	<3	<5	<5	<3	<3	<2	<7
H59	04-Oct-11	<141	347 ± 39	<4	<4	<8	<4	<9	<7	<5	<5	<5	<7
	01-Nov-11	<137	358 ± 32	<4	<3	<7	<5	<8	<7	<5	<5	<4	<8
	29-Nov-11	104 ± 46	299 ± 37	<3	<4	<8	<4	<9	<8	<5	<4	<4	<13
	07-Dec-11	102 ± 49	426 ± 43	<3	<3	<7	<5	<11	<7	<5	<5	<5	<10

(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-238
H15	This sample was previously collected.										
H59	This sample was previously collected.										

4.a.1. CRUSTACEA - (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
H15	This sample was previously collected.										
H59	This sample was previously collected.										

4.a.2. FISH - (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
H15	This sample was previously collected.										
H59	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
H51	04-Oct-11	810 ± 66	5842 ± 202	<14	<15	<13	<1048	<83	<256	<47
	01-Nov-11	1194 ± 79	3876 ± 151	<19	<12	<13	<1071	<78	<238	<39
	07-Dec-11	1600 ± 56	3319 ± 114	<11	<7	<7	333 ± 78	<28	<142	<22
H52	04-Oct-11	750 ± 54	5401 ± 187	<13	<13	<11	<939	<82	<226	<40
	01-Nov-11	1256 ± 76	5125 ± 166	<19	<11	<9	<952	<77	<240	<48
	07-Dec-11	1385 ± 88	4208 ± 168	<16	<10	<11	972 ± 390	<80	<221	<34
H59	04-Oct-11	459 ± 59	3623 ± 168	<14	<14	<15	<945	<90	<247	<46
	01-Nov-11	1354 ± 53	2742 ± 115	<17	<11	<11	109 ± 28	<20	<218	<39
	07-Dec-11	825 ± 19	2469 ± 41	<4	<3	<3	156 ± 25	<11	<59	<10

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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:

Quarterly sampling & analysis for Tritium & principle gamma emitters is performed by the State of Florida Department of Health (DOH) and Bureau of Radiation Control (BRC), pursuant to an Agreement between FPL and DOH, as part of the ODCM REMP sampling program.

The wells identified for radiological environmental sampling in support of the industry initiative are listed below, and in Appendix B-2 of the ODCM. The ten wells are on the 'outside' perimeter of the protected area. Two locations where the Plant ID ends with "S" are shallower wells adjacent, within a few feet, of a deeper well at the same location.

State ID	St. Lucie Plant ID	Location Description
H70	GIS-MW-ES	West of A1A; between the discharge canal and Gate "B"
H71	GIS-MW-EI	West of A1A; between the discharge canal and Gate "B"
H72	GIS-MW-SI	South of Intake canal and the adjacent access road
H73	GIS-MW-SWS	S/W corner of Intake canal and the adjacent access road
H74	GIS-MW-SWI	S/W corner of Intake canal and the adjacent access road
H75	GIS-MW-WI	West of plant site and intake canal; South of switchyard
H76	H76	North of Simulator; South of Big Mud Creek
H77	H77	East of Barge Slip; By LU bldg
H78	H78	South of North Warehouse
H79	H79	West of A1A and East of Parking Lot

B. St. Lucie 2011 Tritium Results [1] Summary, pCi/L

Well number	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
H-70	< 135	< 134	< 140	< 134
H-71	645	681	397	392
H-72	< 167	< 134	< 140	< 143
H-73	< 130	< 134	< 140	< 143
H-74	< 130	< 134	< 140	< 143
H-75	< 130	< 134	< 140	< 143
H76	182	< 134	154	176
H77	<130	109	130	< 143
H78	96	< 134	< 140	125
H79	70	109	< 140	152

Notes

1. Samples analyzed for H3 and principle gamma emitters; tritium is the only fission product identified. Naturally occurring K-40 is occasionally identified.

2. Laboratory H3 MDA is about 140 pCi/liter

Map depicting the well locations follows.

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RADIOLOGICAL ENVIRONMENTAL SAMPLING LOCATIONS
IN SUPPORT OF THE INDUSTRY INITIATIVE