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

March 31, 2005

L-2005-069
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 2004

The attached 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 2004.

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

Very truly yours,

William Jefferson, Jr.
Vice President
St. Lucie Plant

Attachment

WJ/spt

IE25

2004

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: Peter G Bunn

Reviewed by: [signature]

2004
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.

g. A goat milk sample is collected from one location. The sample is collected and analyzed on a quarterly basis. No other milk-producing goats feeding on similar wild vegetation have been found in the St. Lucie region; therefore, there is no control location for this sample type.

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

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 programs sponsored by the Department of Energy (DOE). The first round of samples was from Environmental Measurements Lab (EML) Quality Assessment Program (DOE-QAP). The second round of samples was from the DOE Mixed Analyte Performance Evaluation Program (MAPEP). DOE's EML was transferred to the Department of Homeland Security. A decision was made that continuing the QAP program would not be part of their new mission.
DOE's Office of Corporate Performance Assessment (EH-3) made a decision that the continuance of a similar program was in the best interests of the DOE and opened the program to non-DOE facilities. This other program provides similar testing (matrices, nuclides, and levels) as the former QAP and is referred to as the Mixed Analyte Performance Evaluation Program (MAPEP); however, MAPEP 12 did not include a vegetation matrix (MAPEP 13, for 2005, does). The state applied to participate and was accepted starting with MAPEP Session 12.
The samples are analyzed using the methods applicable to the REMP (gamma spectroscopy, gross beta, and tritium for water). The results for nuclides associated with the REMP are listed in ATTACHMENT C, RESULTS FROM THE INTERLABORATORY COMPARISON PROGRAM.

F. Effects of 2004 Hurricane Season

Both Hurricanes Frances and Jeanne affected portions of St. Lucie's REMP.

Hurricane Frances
- Loss of two TLDs just prior to the quarterly collection.
- Affected four of five air sampling stations: completely demolished one (samples recovered), air filters missing from another one, 100 to 130 hours power loss to three.
- All TLDs and air sampling stations totally restored within 140 hours post landfall.
- Other aspects of program (e.g., soil, water, vegetation sampling) not affected.

Hurricane Jeanne
- Loss of three TLDs four weeks after deployment.
- Affected four of five air sampling stations: air filter missing from one, 40 to 60 hours power loss to three.
- All TLDs and all but one air sampling station totally restored within 48 hours post landfall.
- Last air sampling station back in service within 70 hours of landfall.
- Other aspects of program (e.g., soil, water, vegetation sampling) not affected.

The REMP was fully restored, after both hurricanes, well in advance of Units 1 and 2 re-start.

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:

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

3. Surface Water:

Tritium was detected in 1 of 52 indicator location samples and in 1 of 12 control location samples. The highest level seen was at the control locations and is less than five percent of the Required LLD specified in ODCM Table 4.12-1.
No other nuclides attributed to station operation were detected. 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:

The results of radioactivity measurements in broad leaf vegetation are consistent with past measurements and with measurements made during the pre-operational surveillance program.
Cs-137 was detected in one of the control location samples. The level was 7 pCi/kg, less than 10 percent of the Required LLD specified in ODCM Table 4.12-1. Co-58 and Co-60 was detected in one, and the same, of 26 indicator location samples. The levels as they relate to the inferred "Required LLD" specified in ODCM Table 4.12-1: Co-58 less than 25 percent, Co-60 less than 57 percent. Two additional sets of samples were collected from the same area; both sample results were "less than detectable." Considering the absence of these nuclides in any other samples, the short half-live of Co-58, and the absence of any other nuclides attributed to plant effluents, it is felt this result was not due to plant effluents.
The LLD inference was accomplished by scaling the Co58,60 Required LLD in fish by a ratio of the Cs-134 LLD in fish to Cs-134 LLD in this matrix. That is, both Cs-134 and Co-58,60 have a Required LLD in fish of 130 pCi/kg and the Cs-134 Required LLD in this matrix is 60 pCi/kg; the inferred Required LLD for Co-58,60 would be 60 pCi/kg.
There were no indications of any other nuclides attributed to plant effluents. Results for the broad leaf vegetation samples are summarized in Table 1.

6. Milk, Goat:

Cesium-137 was detected in all of the samples. The presence of this nuclide is considered "weapons fallout"; the animal uptake is due to the foraging habits of the goat. The highest level was 36 pCi/liter. Samples of the wild vegetation consumed by the "pet goat" (Brazilian Pepper) indicated the presence of Cs-137. The State Department of Health found comparable levels of Cs-137 in samples from numerous wilderness locations.

7. Land Use Census:

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 percent 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 QAP-60 and MAPEP 12.

In QAP-60, all results for those nuclides associated with nuclear power plant operation and using analytical methods used in the REMP are acceptable.
In MAPEP 12, the results for soil, water, and gross beta on a filter matrix for those nuclides associated with nuclear power plant operation and using analytical methods used in the REMP are acceptable. The air sample had one warning for one nuclide, Cs-134; all others were acceptable. Although the result for Cs-134 is within the acceptance range, the warning was issued based on the bias.

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, 2004
(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, 103[d]	---	5.0 (99/99) 4.0 - 6.3	NW-10 10 mi., NW	6.1 (4/4) 5.9 - 6.3	5.2 (4/4) 4.9 – 5.5

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, 2004
(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, 258	0.024	<MDA	—	—	<MDA
Gross Beta, 258	0.0025	0.014 (205/206) 0.002 - 0.029	H-34 0.5 mi., N	0.015 (52/52) 0.005 - 0.029	0.015 (52/52) 0.005 - 0.031
Composite Gamma Isotopic, 20					
^{7}Be	0.0052	0.1406 (16/16) 0.0133 - 0.1834	H-34 0.5 mi., N	0.1608 (4/4) 0.1292 - 0.1834	0.1646 (4/4) 0.1247 - 0.1969
^{134}Cs	0.00069	<MDA	—	—	<MDA
^{137}Cs	0.00066	<MDA	—	—	<MDA
^{210}Pb	—	0.0208 (11/16) 0.0102 - 0.0316	H-08 6 mi., WNW	0.0224 (3/4) 0.0162 - 0.0316	0.0175 (1/4)

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, 2004
(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		Control Locations Mean (f)[b] Range
			Name[c] Distance & Direction	Mean (f)[b] Range	
Tritium, 64	230	81 (1/52)	H-15 <1 mi., ENE/E/ESE	81 (1/52)	146 (1/12)
Gamma Isotopic, 64					
^{40}K	60	349 (52/52) 260 - 431	H-15 <1 mi., ENE/E/ESE	349 (52/52) 260 - 431	371 (12/12) 314 - 444
^{54}Mn	4	<MDA	—	—	<MDA
^{59}Fe	8	<MDA	—	—	<MDA
^{58}Co	4	<MDA	—	—	<MDA
^{60}Co	4	<MDA	—	—	<MDA
^{65}Zn	8	<MDA	—	—	<MDA
^{95}Zr-Nb	7	<MDA	—	—	<MDA
^{131}I	5	<MDA	—	—	<MDA
^{134}Cs	5	<MDA	—	—	<MDA
^{137}Cs	5	<MDA	—	—	<MDA
^{140}Ba-La	11	<MDA	—	—	<MDA

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, 2004
(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					
^{40}K	140	716 (2/2) 360 - 1073	H-15 <1 mi, ENE/E/ESE	716 (2/2) 360 - 1073	226 (2/2) 190 - 263
^{210}Pb	—	547 (1/2)	—	547 (1/2)	<MDA
^{226}Ra	49	378 (2/2) 307 - 449	H-15 <1 mi., ENE/E/ESE	378 (2/2) 307 - 449	261 (2/2) 257 - 265
^{232}Th	—	142 (2/2) 78 - 206	H-15 <1 mi., ENE/E/ESE	142 (2/2) 78 - 206	90 (2/2) 84 - 96
^{238}U	—	501 (2/2) 173 - 829	H-15 <1 mi., ENE/E/ESE	501 (2/2) 173 - 829	513 (1/2)
^{58}Co	9	<MDA	—	—	<MDA
^{60}Co	12	<MDA	—	—	<MDA
^{134}Cs	14	<MDA	—	—	<MDA
^{137}Cs	12	<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, 2004
(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, 4					
^{40}K	130	1790 (2/2) 1481 - 2099	H-15 <1 mi., ENE/E/ESE	1790 (2/2) 1481 - 2099	1472 (2/2) 982 - 1961
^{226}Ra	—	< MDA	—	—	799 (1/2)
^{228}Ra	—	92 (1/2)	H-15 <1 mi., ENE/E/ESE	92 (1/2)	<MDA
^{54}Mn	9	<MDA	—	—	<MDA
^{59}Fe	16	<MDA	—	—	<MDA
^{58}Co	9	<MDA	—	—	<MDA
^{60}Co	19	<MDA	—	—	<MDA
^{65}Zn	17	<MDA	—	—	<MDA
^{134}Cs	9	<MDA	—	—	<MDA
^{137}Cs	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, 2004
(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	130	3130 (2/2) 2693 - 3568	H-15 <1 mi., ENE/E/ESE	3130 (2/2) 2693 - 3568	2795 (2/2) 2226 - 3364
^{54}Mn	9	<MDA	—	—	<MDA
^{59}Fe	16	<MDA	—	—	<MDA
^{58}Co	9	<MDA	—	—	<MDA
^{60}Co	10	<MDA	—	—	<MDA
^{65}Zn	17	<MDA	—	—	<MDA
^{134}Cs	9	<MDA	—	—	<MDA
^{137}Cs	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, 2004
(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, 38					
^{7}Be	71	796 (26/26) 304 - 1373	H-52 1 mi. , S/SSE	801 (14/14) 304 - 1328	656 (12/12) 410 - 1004
^{40}K	100	4799 (26/26) 3007 - 7027	H-51 1 mi., N/NNW	4861 (12/12) 4018 - 6042	3587 (12/12) 2029 - 4271
^{58}Co	6	15 (1/14)	H-52 , 1 mi. S/SSE	15 (1/14)	<MDA
^{60}Co	8	34 (1/14)	H-52 , 1 mi. S/SSE	34 (1/14)	< MDA
^{131}I	9	<MDA	—	—	<MDA
^{134}Cs	8	<MDA	—	—	<MDA
^{137}Cs	8	< MDA	—	—	7 (1/12)
^{210}Pb	—	493 (1/26)	H-52 , 1 mi. S/SSE	493 (1/14)	<MDA
^{212}Pb	—	372 (1/26)	H-51 , 1 mi. N/NNW	372 (1/12)	< MDA
^{226}Ra	—	438 (2/26) 343 - 533	H-52 1 mi. , S/SSE	533 (1/14)	< MDA

Number of Non-Routine Reported Measurements = 2

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, 2004
(County, State)

PATHWAY: INGESTION
SAMPLES COLLECTED: MILK
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		Control Locations Mean (f)[b] Range
			Name[c] Distance & Direction	Mean (f)[b] Range	
Gamma Isotopic, 3					
^{40}K	60	1787 (3/3) 1688 - 1895	H-101 3.5 mi., WSW	1787 (3/3) 1688 - 1895	n/a [e]
^{210}Pb	—	<MDA	—	—	n/a
^{212}Pb	—	<MDA	—	—	n/a
^{131}I (Chemical separation)	0.1	<MDA	—	—	n/a
^{134}Cs	5	<MDA	—	—	n/a
^{137}Cs	5	26 (3/3) 12 - 36	H-101 3.5 mi., WSWE	26 (3/3) 12 - 36	n/a

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
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(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).

e. There are no other milk producing goats grazing on similar vegetation, back yard grass and wild bushes in the St. Lucie region. Therefore, there is no control location.

MDA refers to minimum detectable activity.

TABLE 1A
(page 1 of 3)

DEVIATIONS / MISSING DATA

A)	Pathway:	Direct Exposure
	Location:	SSE-10 , 10 miles South-southeast.
	Dates:	First calendar quarter
	Deviation:	Failure to perform continuous monitoring
	Description of Problem:	TLD missing when collection was attempted.
	Corrective Action:	Replaced TLD
B)	Pathway:	Direct Exposure
	Location:	NNW-5 , 5 miles North-northwest, and SSW-5 , 5 miles South-southwest
	Dates:	Third calendar quarter
	Deviation:	Failure to perform continuous monitoring
	Description of Problem:	TLDs missing due to Hurricane Frances
	Corrective Action:	Replaced TLDs
C)	Pathway:	Direct Exposure
	Location:	SSE-10 , 10 miles South-southeast, and SE-1 , 1 mile Southeast, and NNW-5 , 5 miles North-northwest
	Dates:	09-09-04 to 09-28-04
	Deviation:	Failure to perform continuous monitoring
	Description of Problem:	TLDs missing, due to Hurricane Jeanne.
	Corrective Action:	Replaced TLDs

TABLE 1A
(page 2 of 3)

DEVIATIONS / MISSING DATA

D)	Pathway:	Direct Exposure
	Location:	SSW-5 , 5 miles South-southwest..
	Dates:	Fourth calendar quarter
	Deviation:	Failure to perform continuous monitoring
	Description of Problem:	TLD missing when collection was attempted. Note: TLD was verified present after Hurricane Jeanne.
	Corrective Action:	Replaced TLD
E)	Pathway:	Direct Exposure
	Location:	SSE-5 , 5 miles South-southeast..
	Dates:	Third calendar quarter
	Deviation:	Failure to perform continuous monitoring
	Description of Problem:	TLD missing when collection was attempted.
	Corrective Action:	Replaced TLD
F)	Pathway:	Airborne, Particulates & Radioiodines
	Deviation:	Failure to perform continuous monitoring
	Description of Problem:	Power, sample, and equipment loss due to Hurricane Frances
	Corrective Action:	Restored Power, repaired / replaced sampling huts, replaced sampling equipment.
	Dates	8-31-04 to 09-04-04, landfall part way through sampling period

Affected Locations	Additional Details:
H-08 , 6 miles West-northwest	Filter washout by rain lead to atypically low gross beta result
H-14 , 1 mile southeast	Sample station destroyed, samples recovered
H-30 , 2 miles West	Particulate filter blown away, Iodine sample found
H-34 , 0.5 miles North	(no additional details)

TABLE 1A
(page 3 of 3)

DEVIATIONS / MISSING DATA

G)

Pathway:	Airborne, Particulates & Radioiodines
Deviation:	Failure to perform continuous monitoring
Description of Problem:	Power and sample loss due to Hurricane Jeanne
Corrective Action:	Restored power, replaced sampling equipment, verified operating.

Affected Locations	Affected Monitoring Period (Landfall 09-25-04)
H-08 , 6 miles West-northwest	09-21-04 to 09-28-04
H-14 , 1 mile southeast	09-21-04 to 09-28-04
H-30 , 2 miles West	09-21-04 to 09-30-04 (Air Filter Lost)
H-34 , 0.5 miles North	09-21-04 to 09-28-04

H)

Pathway:	Airborne, Particulates & Radioiodines
Location:	H-34 , 0.5 miles North
Dates:	09-28-04 to 10-04-04
Deviation:	Failure to perform continuous monitoring
Description of Problem:	Power outages during sampling period, most likely due to area power restoration activities.
Corrective Action:	None

I)

Pathway:	Ingestion : Milk
Location:	H-101 , 3.5 miles west-south-west
Dates:	Fourth calendar quarter
Deviation:	Failure to perform fourth quarter milk monitoring.
Description of Problem:	The pet goat has not made milk since the hurricanes
Corrective Action:	None

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

TABLE 1B

ANALYSIS WITH LLDs ABOVE THE REQUIRED DETECTION CAPABILITIES
(LLDs) Listed in ODCM TABLE 4.12-1
1/1/2004 – 12/31/2004

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)

Distance to Nearest (a, b)

Sector	6/04 Milk (c) Animal	6/04 Residence	6/04 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 (g)	O
SSE	L (f)	3.3/152 (g)	L
S	L	3.3/191	L
SSW	L	2.2/213	L
SW	L	1.9/235	L
WSW	3.3/248 (h)	1.9/240	3.4/248 (i)
W	L	1.9/260	L
WNW	L	2.2/281	L
NW	L	3.5/304	L
NNW	L	3.4/342 (g)	L

TABLE 2

LAND USE CENSUS
(Page 2 of 2)

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
NNW	2.8/348	A new community is being developed. At the current time, there are no houses available for occupancy.

h. The milk, from the one fresh goat, is primarily used to feed other pet goats; any surplus may be occasionally consumed by humans. Occasionally, there will be insufficient sample to achieve the required LLD for I-131.

i. The garden is just 500 square feet; it is a herb garden in a residence's backyard. The owner is unwilling to provide a sample; field sampling technician feels garden is incapable of supplying sufficient sample to satisfy LLD requirements. It is not included in the REMP program.

ATTACHMENT A

KEY TO SAMPLE LOCATIONS

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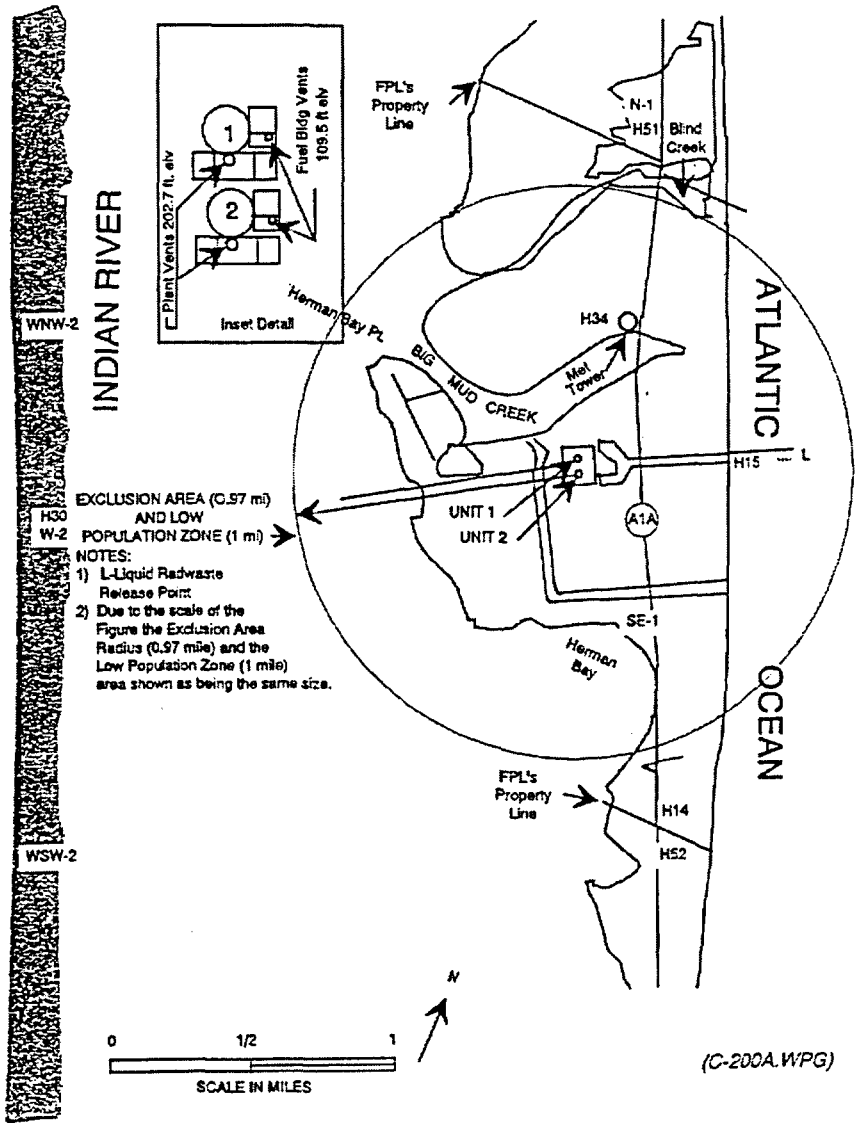
SITE AREA MAP & ENVIRONMENTAL SAMPLE LOCATIONS



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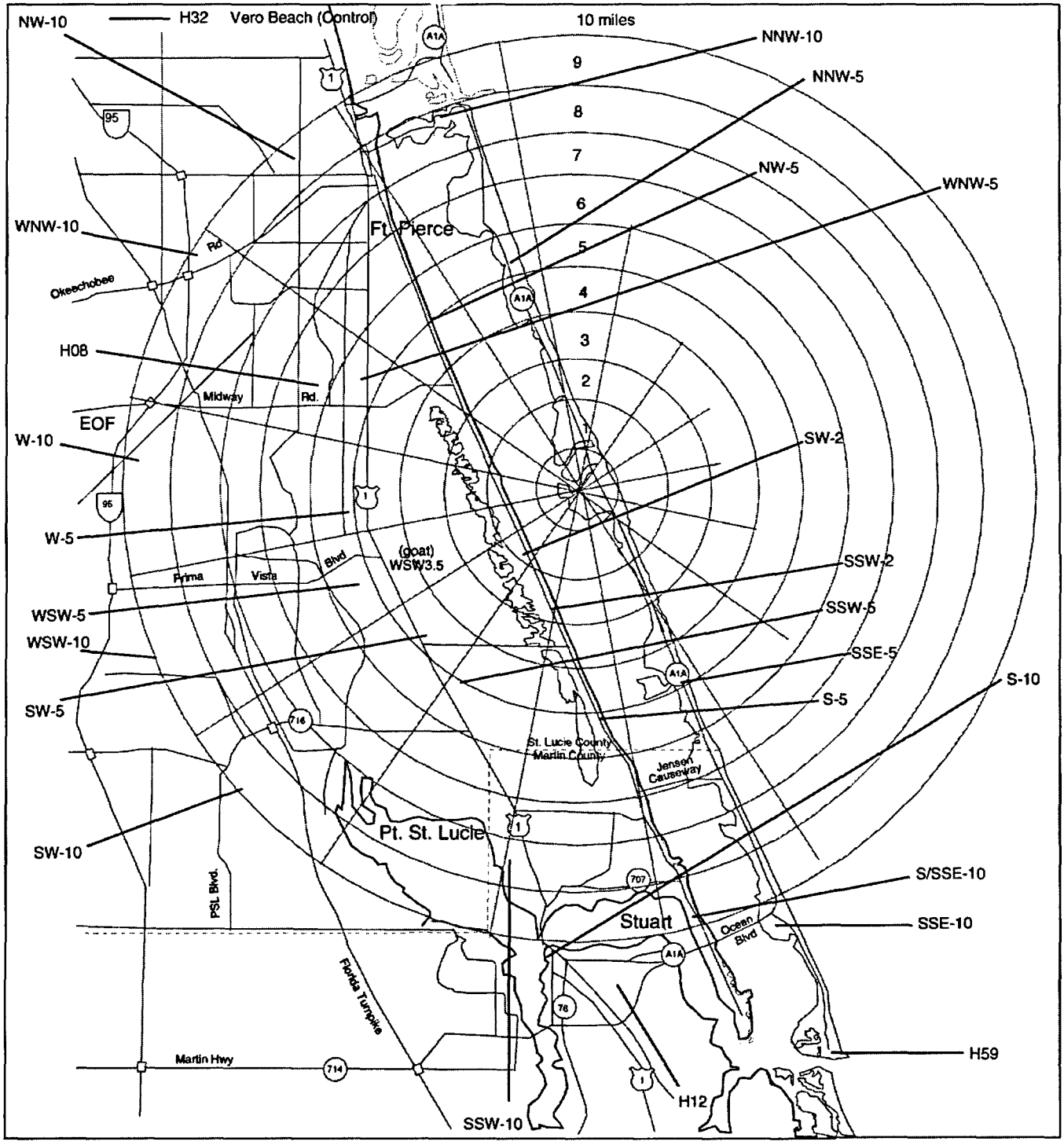
ENVIRONMENTAL SAMPLE LOCATIONS (10 MILES)



(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	5	South of Pete Stone Creek
NNW-10	NNW	9	Coast Guard Station
NW-5	NW	6	Indian River Dr., at Rio Vista Dr.
NW-10	NW	10	S.R. 68 at S.R. 607
WNW-2	WNW	3	Cemetery South of 7107 Indian River Dr.
WNW-5	WNW	5	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	Oleander and Sager Street
W-10	W	9	Interstate 95 at S.R. 709
WSW-2	WSW	2	8503 Indian River Dr.
WSW-5	WSW	5	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	5	U.S. 1 at Village Green Dr.
SW-10	SW	10	Port St. Lucie Blvd. at Cairo Rd.
SSW-2	SSW	3	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	13179 Indian River Drive
S-10	S	10	U.S. 1 at S.R. 714
S/SSE-10	SSE	10	Indian River Dr. at Quail Run Lane
SSE-5	SSE	5	Entrance to Nettles Island
SSE-10	SSE	10	Elliot Museum
SE-1	SE	1	South of Cooling Canal
Control:			
H-32	NNW	19	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, Weatherby 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

ATTACHMENT A

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	South End, 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	South End, 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	South End, 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	South End, Hutchinson Island

SAMPLES COLLECTED: MILK
SAMPLE COLLECTION FREQUENCY: QUARTERLY

Location Name	Direction Sector	Approximate Distance (miles)	Description
H-101	WSW	3.5	One Goat, Private Residence, Spanish Lakes, East of US1
Control:			
None : Not found any fresh goats with similar grazing activities (backyard grass & wild vegetation)			

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ATTACHMENT B

RADIOLOGICAL SURVEILLANCE OF

FLORIDA POWER AND LIGHT COMPANY

ST. LUCIE SITE

2004

First Quarter 2004

Second Quarter 2004

Third Quarter 2004

Fourth Quarter 2004

ST. LUCIE SITE

Offsite Dose Calculation Manual Sampling

First Quarter, 2004

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	2
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	9
4.c. Milk	Quarterly	1	1
			Total: 187

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 - TLDs - (µR/hour)

Sample Site	Deployment 02-Dec-03 Collection 09-Mar-04	Sample Site	Deployment 02-Dec-03 Collection 09-Mar-04
N-1	4.9 ± 0.2	SW-2	4.6 ± 0.2
NNW-5	4.9 ± 0.2	SW-5	5.8 ± 0.2
NNW-10	5.0 ± 0.2	SW-10	4.9 ± 0.2
NW-5	4.7 ± 0.2	SSW-2	4.6 ± 0.2
NW-10	6.1 ± 0.2	SSW-5	5.4 ± 0.2
		SSW-10	5.3 ± 0.2
WNW-2	5.1 ± 0.2		
WNW-5	4.9 ± 0.2	S-5	4.9 ± 0.2
WNW-10	5.6 ± 0.2	S-10	4.8 ± 0.2
		S/SSE-10	4.5 ± 0.2
W-2	4.6 ± 0.2		
W-5	5.4 ± 0.2	SSE-5	4.3 ± 0.2
W-10	5.0 ± 0.2	SSE-10	(A)
WSW-2	4.9 ± 0.2	SE-1	4.7 ± 0.2
WSW-5	4.5 ± 0.2		
WSW-10	4.6 ± 0.2	H-32	5.2 ± 0.2

(A) The TLD at site SSE-10 was missing when collection was attempted. A new TLD was deployed.

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

Collection Date	H08	H12	H14	H30	H34
08-Jan-04	<0.01	<0.01	<0.01	<0.01	<0.01
13-Jan-04	<0.02	<0.02	<0.02	<0.02	<0.02
22-Jan-04	<0.01	<0.01	<0.01	<0.01	<0.01
27-Jan-04	<0.02	<0.02	<0.02	<0.02	<0.02
03-Feb-04	<0.01	<0.01	<0.01	<0.01	<0.01
10-Feb-04	<0.01	<0.01	<0.01	<0.02	<0.01
17-Feb-04	<0.01	<0.01	<0.01	<0.01	<0.01
24-Feb-04	<0.01	<0.01	<0.01	<0.01	<0.01
02-Mar-04	<0.02	<0.02	<0.02	<0.02	<0.02
09-Mar-04	<0.02	<0.02	<0.02	<0.02	<0.02
18-Mar-04	<0.01	<0.01	<0.01	<0.01	<0.01
25-Mar-04	<0.02	<0.01	<0.02	<0.02	<0.01
30-Mar-04	<0.02	<0.02	<0.02	<0.02	<0.02

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

Collection Date	Sample Sites				
	H08	H12	H14	H30	H34
08-Jan-04	0.010 ± 0.001	0.012 ± 0.002	0.010 ± 0.001	0.008 ± 0.001	0.009 ± 0.001
13-Jan-04	0.012 ± 0.003	0.016 ± 0.003	0.011 ± 0.003	0.015 ± 0.003	0.011 ± 0.003
22-Jan-04	0.023 ± 0.002	0.023 ± 0.002	0.022 ± 0.002	0.024 ± 0.002	0.023 ± 0.002
27-Jan-04	0.026 ± 0.003	0.031 ± 0.003	0.028 ± 0.003	0.026 ± 0.003	0.029 ± 0.003
03-Feb-04	0.016 ± 0.002	0.015 ± 0.002	0.014 ± 0.002	0.017 ± 0.002	0.010 ± 0.002
10-Feb-04	0.013 ± 0.002	0.013 ± 0.002	0.013 ± 0.002	0.015 ± 0.002	0.014 ± 0.002
17-Feb-04	0.013 ± 0.002	0.009 ± 0.002	0.009 ± 0.002	0.014 ± 0.002	0.008 ± 0.002
24-Feb-04	0.020 ± 0.002	0.022 ± 0.002	0.019 ± 0.002	0.019 ± 0.002	0.020 ± 0.002
02-Mar-04	0.013 ± 0.002	0.011 ± 0.002	0.010 ± 0.002	0.013 ± 0.002	0.016 ± 0.002
09-Mar-04	0.016 ± 0.002	0.015 ± 0.002	0.012 ± 0.002	0.015 ± 0.002	0.018 ± 0.002
18-Mar-04	0.012 ± 0.002	0.013 ± 0.002	0.011 ± 0.002	0.013 ± 0.002	0.012 ± 0.002
25-Mar-04	0.015 ± 0.002	0.014 ± 0.002	0.016 ± 0.002	0.013 ± 0.002	0.014 ± 0.002
30-Mar-04	0.010 ± 0.002	0.008 ± 0.002	0.014 ± 0.003	0.008 ± 0.002	0.007 ± 0.002
Mean:	0.015 ± 0.001	0.015 ± 0.001	0.015 ± 0.001	0.015 ± 0.001	0.015 ± 0.001

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

First Quarter, 2004

Sample Site	Be-7	K-40	Cs-134	Cs-137	Pb-210
H08	0.1329 ± 0.0109	<0.0210	<0.0010	<0.0010	0.0194 ± 0.0033
H12	0.1737 ± 0.0152	<0.0311	<0.0018	<0.0010	<0.0583
H14	0.1575 ± 0.0121	<0.0196	<0.0009	<0.0010	0.0238 ± 0.0033
H30	0.1609 ± 0.0128	<0.0217	<0.0013	<0.0011	0.0177 ± 0.0041
H34	0.1564 ± 0.0145	<0.0294	<0.0011	<0.0011	<0.0569

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	08-Jan-04	<119	409 ± 35	<3	<3	<7	<5	<8	<6	<5	<4	<4	<5
	13-Jan-04	<122	394 ± 33	<4	<4	<9	<4	<8	<7	<5	<4	<4	<7
	22-Jan-04	<121	342 ± 27	<2	<2	<4	<3	<5	<4	<3	<2	<2	<5
	27-Jan-04	<119	400 ± 51	<5	<5	<14	<7	<11	<11	<7	<5	<7	<9
	03-Feb-04	<118	262 ± 37	<4	<4	<6	<4	<8	<7	<4	<4	<4	<10
	10-Feb-04	<122	353 ± 32	<3	<2	<8	<4	<8	<6	<4	<3	<4	<10
	17-Feb-04	<122	311 ± 32	<4	<3	<7	<4	<7	<6	<4	<4	<4	<6
	24-Feb-04	<122	352 ± 38	<4	<4	<11	<5	<11	<8	<6	<6	<5	<9
	02-Mar-04	<125	421 ± 43	<4	<5	<12	<5	<12	<11	<6	<6	<6	<11
	10-Mar-04	<125	357 ± 32	<3	<3	<6	<4	<8	<6	<4	<4	<4	<5
	18-Mar-04	<125	319 ± 34	<4	<3	<7	<4	<9	<7	<5	<4	<4	<5
	25-Mar-04	<125	317 ± 33	<4	<3	<8	<4	<7	<5	<4	<4	<3	<6
	30-Mar-04	<128	341 ± 38	<3	<3	<5	<4	<8	<6	<7	<4	<4	<5
H59	08-Jan-04	<119	328 ± 42	<4	<5	<8	<5	<10	<8	<6	<5	<5	<8
	17-Feb-04	146 ± 24	348 ± 39	<5	<4	<8	<6	<10	<6	<4	<5	<4	<7
	03-Mar-04	<125	369 ± 36	<4	<3	<7	<3	<8	<6	<3	<4	<4	<10

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

(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	17-Feb-04	<74	360 ± 50	<8	<8	<10	<9	547 ± 185	307 ± 11	78 ± 10	173 ± 79
H59	17-Feb-04	<84	190 ± 60	<8	<10	<11	<10	<743	265 ± 11	84 ± 14	<410

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
H15	This sample has not yet been collected.										
H59	02-Mar-04	1961 ± 235	<29	<25	<52	<29	<53	<31	<24	799 ± 301	<146

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	10-Mar-04	2693 ± 217	<28	<20	<60	<28	<61	<27	<27	<532	<136
H59	02-Mar-04	2226 ± 294	<28	<22	<61	<30	<43	<28	<22	<392	<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	Ra-226
H51	08-Jan-04	555 ± 87	6042 ± 251	<15	<16	<17	<2618	<342
	17-Feb-04	1265 ± 89	4841 ± 227	<17	<17	<18	<2563	<293
	03-Mar-04	1373 ± 108	5428 ± 233	<15	<16	<16	<2442	372 ± 159
H52	08-Jan-04	707 ± 83	4470 ± 211	<15	<16	<16	<2691	<319
	17-Feb-04	939 ± 81	4328 ± 206	<14	<17	<17	<2127	<333
	03-Mar-04	1317 ± 46	5204 ± 114	<7	<9	<8	<1140	<171
H59	08-Jan-04	757 ± 65	3208 ± 147	<12	<11	<10	<797	<282
	17-Feb-04	526 ± 60	3896 ± 156	<11	<13	<13	<724	<240
	03-Mar-04	410 ± 81	3698 ± 201	<15	<16	<16	<2010	308 ± 135

4.c. MILK - (pCi/L)

Sample Site	Collection Date	K-40	I-131	Cs-134	Cs-137	Ba-140 La-140 (A)
H101	31-Jan-04	1688 ± 24	<0.1	<2	12 ± 1	<2

(A) This tabulated LLD value is for Ba-140, either based on direct measurement of Ba-140 or based on ingrowth of La-140, whichever method yields the greater sensitivity

ST. LUCIE SITE

Offsite Dose Calculation Manual Specifications Sampling

Second Quarter, 2004

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	0	0
4. Ingestion			
4.a. Fish and Invertebrates			
4.a.1. Crustacea	Semiannually	2	1
4.a.2. Fish	Semiannually	0	0
4.b. Broadleaf Vegetation	Monthly	3	9
4.c. Milk	Quarterly	1	1
			Total: 184

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 - TLDs - (µR/hour)

Sample Site	Deployment 09-Mar-04 Collection 15-Jun-04	Sample Site	Deployment 09-Mar-04 Collection 15-Jun-04
N-1	4.6 ± 0.2	SW-2	4.2 ± 0.2
NNW-5	4.6 ± 0.2	SW-5	5.3 ± 0.2
NNW-10	4.7 ± 0.2	SW-10	4.5 ± 0.2
NW-5	4.8 ± 0.2	SSW-2	4.5 ± 0.2
NW-10	5.9 ± 0.2	SSW-5	5.1 ± 0.2
WNW-2	4.4 ± 0.2	SSW-10	5.3 ± 0.2
WNW-5	4.5 ± 0.2	S-5	4.8 ± 0.2
WNW-10	5.4 ± 0.2	S-10	4.7 ± 0.2
W-2	4.3 ± 0.2	S/SSE-10	4.8 ± 0.2
W-5	4.7 ± 0.2	SSE-5	4.5 ± 0.2
W-10	4.7 ± 0.2	SSE-10	5.1 ± 0.2
WSW-2	4.4 ± 0.2	SE-1	4.8 ± 0.2
WSW-5	4.6 ± 0.2	H-32	4.9 ± 0.2
WSW-10	4.0 ± 0.2		

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

Collection Date	H08	H12	H14	H30	H34
05-Apr-04	<0.02	<0.02	<0.02	<0.02	<0.02
15-Apr-04	<0.01	<0.01	<0.01	<0.01	<0.01
22-Apr-04	<0.01	<0.01	<0.01	<0.01	<0.01
29-Apr-04	<0.01	<0.01	<0.01	<0.01	<0.01
06-May-04	<0.01	<0.01	<0.01	<0.01	<0.01
13-May-04	<0.01	<0.01	<0.01	<0.01	<0.01
18-May-04	<0.04	<0.03	<0.03	<0.04	<0.04
25-May-04	<0.01	<0.01	<0.01	<0.01	<0.01
03-Jun-04	<0.01	<0.01	<0.01	<0.01	<0.01
08-Jun-04	<0.01	<0.01	<0.01	<0.01	<0.01
15-Jun-04	<0.01	<0.01	<0.01	<0.01	<0.01
24-Jun-04	<0.01	<0.01	<0.01	<0.01	<0.01
28-Jun-04	<0.02	<0.02	<0.02	<0.02	<0.02

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

Collection Date	Sample Site H08	H12	H14	H30	H34
05-Apr-04	0.021 ± 0.003	0.017 ± 0.002	0.017 ± 0.002	0.017 ± 0.002	0.012 ± 0.002
15-Apr-04	0.015 ± 0.002	0.011 ± 0.002	0.013 ± 0.002	0.015 ± 0.002	0.019 ± 0.002
22-Apr-04	0.018 ± 0.002	0.025 ± 0.003	0.020 ± 0.002	0.016 ± 0.002	0.021 ± 0.002
29-Apr-04	0.016 ± 0.002	0.017 ± 0.002	0.014 ± 0.002	0.014 ± 0.002	0.017 ± 0.002
06-May-04	0.012 ± 0.002	0.014 ± 0.002	0.017 ± 0.002	0.013 ± 0.002	0.015 ± 0.002
13-May-04	0.017 ± 0.002	0.025 ± 0.003	0.019 ± 0.002	0.015 ± 0.002	0.020 ± 0.002
18-May-04	0.018 ± 0.003	0.021 ± 0.003	0.015 ± 0.003	0.015 ± 0.003	0.018 ± 0.003
25-May-04	0.018 ± 0.002	0.020 ± 0.002	0.017 ± 0.002	0.019 ± 0.002	0.016 ± 0.002
03-Jun-04	0.017 ± 0.002	0.015 ± 0.002	0.018 ± 0.002	0.017 ± 0.002	0.021 ± 0.002
08-Jun-04	0.010 ± 0.002	0.009 ± 0.002	0.014 ± 0.003	0.010 ± 0.002	0.012 ± 0.003
15-Jun-04	0.008 ± 0.002	0.011 ± 0.002	0.010 ± 0.002	0.007 ± 0.002	0.010 ± 0.002
24-Jun-04	0.013 ± 0.002	0.014 ± 0.002	0.015 ± 0.002	0.011 ± 0.002	0.014 ± 0.002
Mean:	0.016 ± 0.001	0.017 ± 0.001	0.016 ± 0.001	0.015 ± 0.001	0.017 ± 0.001

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

Second Quarter, 2004

Sample Site	Be-7	K-40	Cs-134	Cs-137	Pb-210
H08	0.1651 ± 0.0112	<0.0201	<0.0013	<0.0008	0.0162 ± 0.0038
H12	0.1629 ± 0.0118	<0.0199	<0.0008	<0.0010	0.0175 ± 0.0044
H14	0.1520 ± 0.0048	<0.0043	<0.0004	<0.0004	0.0177 ± 0.0063
H30	0.1666 ± 0.0123	<0.0232	<0.0010	<0.0012	0.0102 ± 0.0037
H34	0.1834 ± 0.0135	<0.0178	<0.0012	<0.0008	0.0193 ± 0.0038

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	05-Apr-04	<119	326 ± 33	<4	<3	<8	<4	<6	<7	<4	<4	<4	<6
	15-Apr-04	<119	347 ± 26	<3	<2	<5	<3	<5	<4	<3	<3	<3	<6
	22-Apr-04	<119	293 ± 33	<4	<3	<7	<4	<8	<7	<6	<5	<4	<4
	29-Apr-04	81 ± 23	367 ± 17	<2	<2	<3	<2	<4	<3	<3	<2	<2	<2
	06-May-04	<122	352 ± 34	<4	<3	<8	<5	<8	<7	<4	<3	<3	<5
	13-May-04	<122	373 ± 35	<3	<4	<8	<3	<6	<6	<4	<4	<3	<10
	18-May-04	<121	300 ± 44	<5	<5	<10	<5	<13	<11	<6	<6	<6	<11
	25-May-04	<121	393 ± 28	<2	<2	<5	<3	<5	<4	<2	<3	<3	<7
	03-Jun-04	<124	390 ± 35	<4	<4	<8	<4	<8	<7	<4	<4	<3	<6
	08-Jun-04	<124	431 ± 37	<3	<3	<7	<4	<7	<6	<4	<4	<3	<7
	15-Jun-04	<125	351 ± 22	<2	<2	<5	<3	<5	<4	<3	<2	<3	<4
	24-Jun-04	<125	344 ± 31	<3	<3	<6	<3	<6	<5	<4	<3	<3	<10
	28-Jun-04	<125	351 ± 26	<2	<3	<5	<4	<6	<5	<3	<3	<3	<9
H59	05-Apr-04	<128	432 ± 46	<6	<5	<12	<6	<14	<9	<7	<6	<5	<12
	06-May-04	<122	444 ± 42	<4	<5	<9	<6	<8	<8	<7	<5	<5	<5
	03-Jun-04	<124	336 ± 37	<3	<4	<7	<4	<7	<4	<5	<4	<4	<5

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

(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
These samples were 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	23-Apr-04	1481 ± 104	<10	<10	<22	<11	<20	<11	<10	<190	<37
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
These samples were 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
H51	05-Apr-04	1021 ± 84	4018 ± 201	<15	<15	<13	<2413	<69	<281
	06-May-04	527 ± 65	5618 ± 191	<14	<13	<10	<705	<83	<289
	03-Jun-04	404 ± 62	4983 ± 226	<13	<16	<16	<2179	<78	<298
H52	05-Apr-04	1132 ± 94	4782 ± 222	<17	<21	<17	<2641	<84	<304
	06-May-04	926 ± 80	5317 ± 183	<15	<11	<11	<872	<86	<246
	03-Jun-04	813 ± 84	4980 ± 247	<14	<17	<20	<2272	<77	<326
H59	05-Apr-04	547 ± 46	3942 ± 164	<12	<9	<14	<728	<88	<275
	06-May-04	731 ± 38	2727 ± 82	<9	<6	<6	<856	<30	<116
	03-Jun-04	1004 ± 81	3823 ± 211	<17	<15	<16	<2195	<78	<333

4.c. MILK - (pCi/L)

Sample Site	Collection Date	K-40	I-131	Cs-134	Cs-137	Ba-140 La-140 (A)
H101	05-May-04	1779 ± 36	<0.1	<3	31 ± 2	<3

(A) This tabulated LLD value is for Ba-140, either based on direct measurement of Ba-140 or based on ingrowth of La-140, whichever method yields the greater sensitivity.

ST. LUCIE SITE

Offsite Dose Calculation Manual Specification Sampling

Third Quarter, 2004

Sample Type	Collection Frequency	Locations Sampled	Number of Samples
1. Direct Radiation	Quarterly	27	25
2. Airborne			
2.a. Air Iodines	Weekly	5	65
2.b. Air Particulates	Weekly	5	63
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	1
4.b. Broadleaf Vegetation	Monthly	3	9
4.c. Milk	Quarterly	1	1
			Total: 182

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 and with greater than a 50% error term 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 - TLDs - (µR/hour)

Sample Site	Deployment 15-Jun-04 Collection 09-Sep-04	Sample Site	Deployment 15-Jun-04 Collection 09-Sep-04
N-1	5.1 ± 0.2	SW-2	4.7 ± 0.2
NNW-5	(A)	SW-5	6.0 ± 0.2
NNW-10	5.0 ± 0.2	SW-10	5.3 ± 0.2
NW-5	5.1 ± 0.2	SSW-2	5.0 ± 0.2
NW-10	6.3 ± 0.3	SSW-5	(A)
WNW-2	5.2 ± 0.2	SSW-10	5.6 ± 0.2 (B)
WNW-5	4.8 ± 0.2	S-5	5.0 ± 0.2
WNW-10	5.8 ± 0.2	S-10	5.0 ± 0.2
W-2	4.9 ± 0.2	S/SSE-10	4.8 ± 0.2
W-5	5.2 ± 0.2	SSE-5	4.7 ± 0.2
W-10	5.0 ± 0.2	SSE-10	5.4 ± 0.2
WSW-2	4.9 ± 0.2	SE-1	5.0 ± 0.2
WSW-5	5.0 ± 0.2	H-32	5.5 ± 0.2
WSW-10	4.6 ± 0.2		

(A) The TLDs at sites NNW-5 and SSW-5 were missing when collection was attempted. Hurricane Frances hit the area just before the TLD collection. New TLDs were deployed.

(B) The TLD at site SSW-10 was wet when collected.

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

Collection Date	H08	H12	H14	H30	H34
08-Jul-04	<0.01	<0.01	<0.01	<0.01	<0.01
15-Jul-04	<0.02	<0.02	<0.02	<0.02	<0.02
22-Jul-04	<0.01	<0.01	<0.01	<0.01	<0.01
29-Jul-04	<0.01	<0.01	<0.01	<0.01	<0.01
05-Aug-04	<0.01	<0.01	<0.01	<0.01	<0.01
11-Aug-04	<0.02	<0.02	<0.02	<0.02	<0.02
19-Aug-04	<0.02	<0.02	<0.02	<0.02	<0.02
24-Aug-04	<0.03	<0.03	<0.03	<0.04	<0.03
31-Aug-04	<0.02	<0.02	<0.02	<0.02	<0.02
09-Sep-04	<0.01 (A)	<0.01	<0.04 (B)	<0.04 (C)	<0.04 (D)
15-Sep-04	<0.01	<0.01	<0.01 (E)	<0.01	<0.01 (F)
21-Sep-04	<0.02	<0.02	<0.01 (G)	<0.02	<0.02
28-Sep-04	<0.01 (H)	<0.01	<0.01 (I)	<0.01 (J)	<0.01 (K)

(A) Hurricane Frances damaged sample hut.
(B) Power outage due to Hurricane Frances, run time estimated at 96 hours out of 216. Sample hut destroyed.
(C) Power outage due to Hurricane Frances, run time estimated at 92 hours out of 220.
(D) Power outage due to Hurricane Frances, run time estimated at 90 hours out of 217.5.
(E) Control valve mistakenly mounted distal to gas meter, flow rate 191 cfh.
(F) Flow rate inadvertantly set to 102 cfh instead of 60 cfh.
(G) Control valve placed into correct location, flow rate adj from 141 to 62 cfh.
(H) Power outage due to Hurricane Jeanne, run time estimated at 128 hours out of 168.
(I) Power outage due to Hurricane Jeanne, run time estimated at 128 hours out of 169.
(J) Power outage due to Hurricane Jeanne, run time estimated at 105 hours out of 168.
(K) Power outage due to Hurricane Jeanne, run time estimated at 100 hours out of 169.

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

Collection Date	Sample Site H08	H12	H14	H30	H34
08-Jul-04	0.011 ± 0.002	0.012 ± 0.002	0.010 ± 0.001	0.013 ± 0.002	0.011 ± 0.001
15-Jul-04	0.017 ± 0.002	0.014 ± 0.002	0.020 ± 0.002	0.018 ± 0.002	0.022 ± 0.003
22-Jul-04	0.012 ± 0.002	0.011 ± 0.002	0.006 ± 0.002	0.012 ± 0.002	0.008 ± 0.002
29-Jul-04	0.017 ± 0.002	0.017 ± 0.002	0.015 ± 0.002	0.018 ± 0.002	0.015 ± 0.002
05-Aug-04	0.008 ± 0.002	0.006 ± 0.002	0.011 ± 0.002	0.007 ± 0.002	0.006 ± 0.002
11-Aug-04	0.013 ± 0.002	0.014 ± 0.002	0.013 ± 0.002	0.011 ± 0.002	0.013 ± 0.002
19-Aug-04	0.009 ± 0.002	0.013 ± 0.002	0.011 ± 0.002	0.008 ± 0.002	0.009 ± 0.002
24-Aug-04	0.011 ± 0.002	0.011 ± 0.002	0.016 ± 0.003	0.011 ± 0.003	0.015 ± 0.002
31-Aug-04	0.012 ± 0.002	0.005 ± 0.002	0.006 ± 0.002	0.008 ± 0.002	0.012 ± 0.002
09-Sep-04	<0.004 (A)	0.008 ± 0.001	0.012 ± 0.003 (B)	(C)	0.005 ± 0.003 (D)
15-Sep-04	0.011 ± 0.002	0.007 ± 0.002	0.003 ± 0.001 (E)	0.008 ± 0.002	0.009 ± 0.001 (F)
21-Sep-04	0.007 ± 0.002	0.010 ± 0.002	0.002 ± 0.001 (G)	0.007 ± 0.002	0.006 ± 0.002
28-Sep-04	0.016 ± 0.003 (H)	0.016 ± 0.002	0.017 ± 0.002 (I)	(J)	0.018 ± 0.003 (K)
Mean	<0.011	0.011 ± 0.001	0.011 ± 0.001	0.011 ± 0.001	0.011 ± 0.001

(A) Hurricane Frances damaged sample hut, low beta activity may be due to rain washout of filter.
(B) Power outage due to Hurricane Frances, run time estimated at 96 hours out of 216. Sample hut destroyed.
(C) Particulate filter lost due to Hurricane Frances.
(D) Power outage due to Hurricane Frances, run time estimated at 90 hours out of 217.5.
(E) Control valve mistakenly mounted distal to gas meter, flow rate 191 cfh.
(F) Flow rate inadvertently set to 102 cfh instead of 60 cfh.
(G) Control valve placed into correct location, flow rate adj from 141 to 62 cfh.
(H) Power outage due to Hurricane Jeanne, run time estimated at 128 hours out of 168.
(I) Power outage due to Hurricane Jeanne, run time estimated at 128 hours out of 169.
(J) Particulate filter lost due to Hurricane Jeanne.
(K) Power outage due to Hurricane Jeanne, run time estimated at 100 hours out of 169.

2.b.2. AIR PARTICULATES GAMMA ANALYSIS OF QUARTERLY COMPOSITES (pCi/m³)
Third Quarter, 2004

Sample Site	Be-7	K-40	Cs-134	Cs-137	Pb-210
H08	0.1012 ± 0.0095	<0.0209	<0.0012	<0.0010	0.0316 ± 0.0030
H12	0.1247 ± 0.0123	<0.0239	<0.0014	<0.0008	<0.0496
H14	0.0986 ± 0.0125	<0.0193	<0.0009	<0.0010	<0.0411
H30	0.0947 ± 0.0082	<0.0156	<0.0008	<0.0010	<0.0312
H34	0.1292 ± 0.0109	<0.0180	<0.0010	<0.0008	0.0213 ± 0.0032

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	08-Jul-04	<125	371 ± 36	<5	<4	<8	<4	<8	<7	<5	<5	<4	<8
	15-Jul-04	<126	295 ± 48	<6	<6	<11	<7	<13	<11	<6	<6	<5	<11
	22-Jul-04	<126	359 ± 28	<2	<2	<5	<3	<5	<5	<2	<3	<3	<8
	29-Jul-04	<126	358 ± 25	<2	<2	<5	<3	<6	<4	<2	<3	<3	<7
	05-Aug-04	<127	335 ± 26	<2	<2	<5	<3	<5	<4	<3	<3	<3	<8
	11-Aug-04	<126	352 ± 17	<2	<1	<3	<2	<4	<3	<3	<2	<2	<2
	19-Aug-04	<126	331 ± 42	<4	<6	<9	<6	<10	<10	<7	<7	<6	<10
	24-Aug-04	<126	301 ± 35	<3	<4	<9	<4	<7	<6	<5	<5	<5	<7
	31-Aug-04	<127	260 ± 59	<5	<5	<12	<6	<10	<12	<7	<5	<6	<9
	09-Sep-04	<127	373 ± 35	<3	<3	<7	<3	<8	<6	<6	<4	<3	<5
	15-Sep-04	<126	296 ± 31	<4	<4	<9	<5	<9	<6	<4	<4	<3	<9
	21-Sep-04	<126	337 ± 35	<3	<4	<5	<3	<9	<7	<4	<4	<4	<9
	28-Sep-04	<126	311 ± 22	<2	<2	<5	<3	<5	<4	<3	<3	<2	<4
H59	08-Jul-04	<126	381 ± 39	<4	<4	<9	<5	<10	<7	<5	<4	<5	<8
	18-Aug-04	<127	314 ± 38	<4	<4	<8	<4	<10	<7	<5	<5	<5	<8
	01-Sep-04	<127	399 ± 33	<3	<4	<8	<4	<8	<6	<6	<4	<3	<6

(A) These tabulated LLD values for Zr/Nb-95 are the higher of the individual parent or daughter LLDs.
(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	19-Aug-04	<116	1073 ± 126	<13	<15	<18	<12	<1026	449 ± 18	206 ± 22	829 ± 315
H59	18-Aug-04	<48	263 ± 38	<5	<5	<6	<5	<403	257 ± 6	96 ± 9	513 ± 120

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 has not yet been collected.										
H59	This sample has not yet been 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 has not yet been collected.										
H59	01-Sep-04	3364 ± 212	<16	<21	<47	<20	<44	<19	<21	<335	<64

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
H51	08-Jul-04	605 ± 64	4660 ± 178	<12	<14	<15	<1715	<66	<255
	19-Aug-04	968 ± 74	4043 ± 154	<10	<11	<9	<595	<73	<219
	01-Sep-04	738 ± 40	5055 ± 106	<11	<8	<8	<978	<33	<152
H52	08-Jul-04	623 ± 58	4852 ± 181	<10	<15	<14	<1664	<57	<214
	19-Aug-04	1328 ± 77	3970 ± 192	<12	<14	<12	<1819	<64	<250
	01-Sep-04	593 ± 77	4995 ± 259	<24	<17	<19	<2082	<71	<259
H59	08-Jul-04	736 ± 65	4203 ± 159	<11	<11	<11	<807	<90	<277
	18-Aug-04	589 ± 59	3315 ± 197	<13	<15	<12	<1830	<60	<253
	01-Sep-04	515 ± 26	4111 ± 71	<7	<5	7 ± 3	<262	<31	<97

4.c. MILK - (pCi/L)

Sample Site	Collection Date	K-40	I-131	Cs-134	Cs-137	Ba-140 La-140 (A)
H101	09-Aug-04	1895 ± 69	<0.2	<4	36 ± 4	<7

(A) This tabulated LLD value is for Ba-140, either based on direct measurement of Ba-140 or based on ingrowth of La-140, whichever method yields the greater sensitivity.

ST. LUCIE SITE

Offsite Dose Calculation Manual Specifications Sampling

Fourth Quarter, 2004

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	0	0
4. Ingestion			
4.a. Fish and Invertebrates			
4.a.1. Crustacea	Semiannually	2	2
4.a.2. Fish	Semiannually	1	1
4.b. Broadleaf Vegetation	Monthly	3	11
4.c. Milk	Quarterly	1	0
			Total: 187

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 - TLDs - (μR/hour)

Sample Site	Deployment 09-Sep-04 Collection 07-Dec-04	Sample Site	Deployment 09-Sep-04 Collection 07-Dec-04
N-1	4.7 ± 0.2	SW-2	4.6 ± 0.2
NNW-5	5.5 ± 0.2 (B)	SW-5	5.7 ± 0.2
NNW-10	5.0 ± 0.2	SW-10	4.8 ± 0.2
NW-5	4.8 ± 0.2	SSW-2	4.7 ± 0.2
NW-10	6.2 ± 0.2	SSW-5	(A)
WNW-2	4.8 ± 0.2	SSW-10	5.7 ± 0.2
WNW-5	4.8 ± 0.2	S-5	4.9 ± 0.2
WNW-10	5.3 ± 0.2	S-10	4.9 ± 0.2
W-2	4.6 ± 0.2	S/SSE-10	4.5 ± 0.2
W-5	5.0 ± 0.2	SSE-5	(A)
W-10	4.9 ± 0.2	SSE-10	5.6 ± 0.2 (B)
WSW-2	4.6 ± 0.2	SE-1	4.5 ± 0.2 (B)
WSW-5	4.8 ± 0.2	H-32	5.2 ± 0.2
WSW-10	4.3 ± 0.2		

(A) The TLDs at sites SSW-5 and SSE-5 were missing when collection was attempted. New TLDs were deployed.

(B) The TLDs at sites NNW-5, SSE-10, and SE-1 were lost during Hurricane Jeanne. New TLDs were deployed on Sept 28, and collected with the remainder of the deployed TLDs.

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

Collection Date	H08	H12	H14	H30	H34
04-Oct-04	<0.02	<0.02	<0.02	<0.03 (A)	<0.03 (B)
11-Oct-04	<0.01	<0.01	<0.01	<0.01	<0.01
19-Oct-04	<0.01	<0.01	<0.01	<0.01	<0.01
25-Oct-04	<0.01	<0.01	<0.01	<0.01	<0.01
01-Nov-04	<0.01	<0.01	<0.01	<0.01	<0.01
10-Nov-04	<0.02	<0.02	<0.02	<0.02	<0.02
18-Nov-04	<0.02	<0.02	<0.02	<0.02	<0.02
23-Nov-04	<0.02	<0.02	<0.02	<0.02	<0.02
30-Nov-04	<0.01	<0.01	<0.01	<0.01	<0.01
07-Dec-04	<0.01	<0.01	<0.01	<0.01	<0.01
14-Dec-04	<0.02	<0.02	<0.02	<0.02	<0.02
22-Dec-04	<0.01	<0.01	<0.01	<0.01	<0.01
29-Dec-04	<0.01	<0.01	<0.01	<0.01	<0.01

(A) Power restored after Hurricane Jeanne, run time estimated at 89 out of 144 hour sampling period.

(B) Power lost during sampling period, run time estimated at 100 out of 144 hour sampling period

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

Collection Date	Sample Site H08	H12	H14	H30	H34
04-Oct-04	0.006 ± 0.002	0.010 ± 0.002	0.008 ± 0.002	0.017 ± 0.003 (A)	0.016 ± 0.003 (B)
11-Oct-04	0.016 ± 0.002	0.017 ± 0.002	0.012 ± 0.002	0.014 ± 0.002	0.017 ± 0.002
19-Oct-04	0.016 ± 0.002	0.022 ± 0.002	0.016 ± 0.002	0.020 ± 0.002	0.022 ± 0.002
25-Oct-04	0.013 ± 0.002	0.014 ± 0.002	0.010 ± 0.002	0.011 ± 0.002	0.017 ± 0.002
01-Nov-04	0.014 ± 0.002	0.014 ± 0.002	0.013 ± 0.002	0.013 ± 0.002	0.013 ± 0.002
10-Nov-04	0.015 ± 0.002	0.015 ± 0.002	0.013 ± 0.002	0.019 ± 0.002	0.017 ± 0.002
18-Nov-04	0.009 ± 0.002	0.009 ± 0.002	0.008 ± 0.002	0.009 ± 0.002	0.011 ± 0.002
23-Nov-04	0.011 ± 0.003	0.011 ± 0.003	0.007 ± 0.002	0.014 ± 0.003	0.012 ± 0.003
30-Nov-04	0.018 ± 0.002	0.011 ± 0.002	0.017 ± 0.002	0.014 ± 0.002	0.018 ± 0.002
07-Dec-04	0.018 ± 0.002	0.019 ± 0.002	0.021 ± 0.002	0.014 ± 0.002	0.025 ± 0.002
14-Dec-04	0.014 ± 0.002	0.018 ± 0.002	0.017 ± 0.002	0.015 ± 0.002	0.015 ± 0.002
22-Dec-04	0.007 ± 0.002	0.017 ± 0.002	0.014 ± 0.002	0.013 ± 0.002	0.011 ± 0.002
29-Dec-04	0.009 ± 0.002	0.014 ± 0.002	0.010 ± 0.002	0.010 ± 0.002	0.011 ± 0.002
Mean:	0.013 ± 0.001	0.015 ± 0.001	0.013 ± 0.001	0.014 ± 0.001	0.016 ± 0.001

(A) Power restored after Hurricane Jeanne, run time estimated at 89 out of 144 hour sampling period.
(B) Power lost during sampling period, run time estimated at 100 out of 144 hour sampling period

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

Fourth Quarter, 2004

Sample Site	Be-7	K-40	Cs-134	Cs-137	Pb-210
H08	0.1551 ± 0.0138	<0.0240	<0.0016	<0.0009	<0.0610
H12	0.1969 ± 0.0122	<0.0210	<0.0011	<0.0011	<0.0113
H14	0.1650 ± 0.0129	<0.0153	<0.0010	<0.0010	0.0240 ± 0.0041
H30	0.1769 ± 0.0107	<0.0263	<0.0010	<0.0008	0.0272 ± 0.0036
H34	0.1740 ± 0.0152	<0.0284	<0.0018	<0.0015	<0.0564

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-04	<124	334 ± 36	<4	<3	<9	<5	<9	<7	<4	<4	<4	<6
	11-Oct-04	<123	390 ± 33	<3	<3	<8	<4	<9	<7	<5	<3	<4	<6
	19-Oct-04	<123	364 ± 23	<2	<2	<4	<2	<5	<4	<2	<2	<2	<5
	25-Oct-04	<123	344 ± 33	<3	<3	<7	<4	<8	<6	<5	<3	<4	<6
	01-Nov-04	<125	400 ± 34	<4	<4	<7	<5	<7	<6	<4	<3	<4	<9
	10-Nov-04	<125	309 ± 32	<3	<4	<8	<4	<7	<7	<5	<4	<3	<5
	18-Nov-04	<125	384 ± 33	<3	<3	<8	<4	<9	<5	<4	<4	<4	<9
	23-Nov-04	<125	399 ± 34	<3	<3	<7	<3	<9	<8	<6	<5	<3	<7
	30-Nov-04	<123	332 ± 35	<3	<3	<7	<3	<9	<6	<4	<3	<3	<8
	07-Dec-04	<123	330 ± 26	<2	<3	<5	<3	<6	<5	<3	<3	<3	<6
	14-Dec-04	<123	409 ± 36	<3	<3	<7	<5	<7	<6	<4	<4	<4	<7
	22-Dec-04	<123	327 ± 35	<3	<3	<7	<4	<7	<6	<5	<3	<4	<6
	29-Dec-04	<123	340 ± 37	<3	<3	<7	<4	<7	<5	<5	<4	<4	<7
H59	13-Oct-04	<123	335 ± 47	<5	<5	<13	<6	<12	<10	<8	<7	<5	<9
	01-Nov-04	<125	407 ± 34	<4	<3	<7	<4	<7	<5	<4	<4	<4	<9
	14-Dec-04	<123	364 ± 18	<1	<1	<3	<2	<3	<3	<2	<2	<2	<3

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

(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
These samples were 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	22-Oct-04	2099 ± 116	<13	<13	<29	<15	<28	<15	<14	<308	92 ± 23
H59	22-Oct-04	982 ±157	<20	<20	<48	<24	<45	<24	<23	<500	<92

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	27-Oct-04	3568 ± 147	<13	<18	<70	<15	<32	<13	<14	<210	<44
H59	This sample was previously collected.										

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

Sample Site	Collection Date	Be-7	K-40	Co-58	Co-60	I-131	Cs-134	Cs-137	Pb-210	Pb-212	Ra-226
H51	13-Oct-04	954 ± 66	4045 ± 171	<9	<15	<10	<12	<12	<687	<88	<265
	01-Nov-04	387 ± 69	4812 ± 233	<15	<26	<17	<18	<14	<2179	<73	343 ± 122
	14-Dec-04	704 ± 96	4790 ± 231	<15	<23	<16	<19	<19	<2590	<100	<404
H52	*13-Oct-04	1103 ± 34	3007 ± 57	15 ± 3	34 ± 2	<12	<4	<4	493 ± 117	<32	<96
	21-Oct-04	402 ± 38	5083 ± 125	<8	<10	<10	<8	<8	<437	<53	<161
	22-Oct-04	401 ± 25	4929 ± 81	<5	<7	<6	<5	<5	<685	<23	<88
	01-Nov-04	304 ± 51	7027 ± 146	<9	<13	<12	<11	<12	<361	<58	<208
	14-Dec-04	626 ± 85	3492 ± 211	<15	<22	<16	<15	<15	<2463	<85	533 ± 173
H59	13-Oct-04	676 ± 90	3029 ± 221	<14	<17	<13	<16	<18	<2100	<81	<366
	01-Nov-04	637 ± 67	3823 ± 205	<15	<22	<17	<15	<17	<2087	<74	<347
	14-Dec-04	738 ± 82	4271 ± 211	<14	<22	<15	<17	<14	<2288	<86	<378

* Site H52 Co-58 and Co-60 were detected in this routine collection. In order to determine the validity of this result, additional collections were taken on Oct 21 and Oct 22. Neither Co-58, nor Co-60 were detected in these additional collections.

4.c. MILK - (pCi/L)

Sample Site	Collection Date	K-40	I-131	Cs-134	Cs-137	Ba-140 La-140 (A)
H101	There was no sample available during the quarter.					

(A) This tabulated LLD value is for Ba-140, either based on direct measurement of Ba-140 or based on ingrowth of La-140, whichever method yields the greater sensitivity.

ATTACHMENT C

RESULTS FROM THE INTERLABORATORY

COMPARISON PROGRAM 2004

DEPARTMENT OF ENERGY

QAP 60 , June 2004

AND

MAPEP 12, December 2004

2004
ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT
ST. LUCIE PLANT – UNITS 1 & 2

DOE-QAP 60 RESULTS

Radionuclide	Reported Value	Reported Error	EML Value	EML Error	Reported / EML	Evaluation
Matrix: AI Air Filter Bq/filter						
Co60	37.850	0.130	35.400	0.850	1.069	A
Cs137	17.060	0.100	18.200	0.402	0.937	A
Cs137	30.080	0.100	26.400	0.860	1.139	A
Am241	0.130	0.020	0.105	0.002	1.244	A
Gross Beta	3.000	0.050	2.850	0.280	1.053	A
Matrix: SO Soil Bq/k						
K40	616.000	8.000	539.000	29.110	1.143	A
Cs137	1509.000	3.000	1323.000	66.170	1.141	A
Th234	96.500	5.300	84.000	5.960	1.149	A
U238	98.000	8.000	89.730	4.220	1.092	A
Am241	14.600	1.000	13.000	0.430	1.123	A
Matrix: VE Vegetation Bq/kg						
K40	800.000	10.000	720.000	37.920	1.111	A
Co60	15.200	0.600	14.470	0.640	1.050	A
Cs137	634.000	3.000	584.670	29.230	1.084	A
Am241	5.400	0.800	4.930	0.290	1.095	A
Matrix: WA Water Bq/L						
H3	237.170	4.750	186.600	3.300	1.271	A
Co60	160.100	0.500	163.200	5.900	0.981	A
Sr90	4.640	0.270	4.760 **	0.500	0.975	A
Cs137	52.040	0.490	51.950	2.700	1.002	A
Am241	1.340	0.300	1.3100	0.040	1.023	A
Gross Alpha	328.400	8.400	326.000	32.000	1.007	A
Gross Beta	1009.000	9.100	1170.000	117.000	0.862	A

** = Grand mean average used in lieu of experimentally determined EML value

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

2004
ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT
ST. LUCIE PLANT – UNITS 1 & 2

DOE-MAPEP 12 RESULTS

Radionuclide	Result	Ref. Value	Flag (Evaluation)	Acceptance Range
Matrix: RdF Air Filter Bq/filter				
MN54	3.13	3	A	2.10 – 3.90
CO57	2.43	2.4	A	1.68 – 3.12
CO60	2.35	2.3	A	1.61 – 2.99
ZN65	4.59	4	A	2.80 – 5.20
CS134	2.22	2.9	W	2.03 – 3.77
CS137	1.90	2	A	1.40 – 2.60
Matrix: MaS Soil Bq/kg				
K40	692	604	A	422.8 – 785.2
MN54	572	484.7	A	339.3 – 630.1
CO57	465	399.6	A	279.7 – 519.5
CO60	574	518	A	362.6 – 673.4
ZN65	835	699.3	A	489.5 – 909.1
CS134	408	414.4	A	290.1 – 538.7
CS137	948	836.2	A	585.3 - 1008
Matrix: MaW Water Bq/L				
H3	90.5	83	A	58.1 – 107.9
MN54	262.1	267	A	186.9 – 347.1
CO57	168.3	185	A	129.5 – 240.5
CO60	158.1	163	A	114.1 – 211.9
NI63	91.4	100	A	70 - 130
ZN65	212.8	208	A	145.6 – 270.4
SR90	8.2	7	A	4.9 – 9.1
CS134	180.9	208	A	145.6 – 270.4
CS137	234.5	250	A	175 - 325
Matrix: MaV Vegetation, Bq/sample :				
Not included in this round				
Matrix: GrF Filter Bq/sample				
Gross Beta	1.27	1.2	A	0.6 – 1.80

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

From the MAPEP handbook:
Acceptance criteria were developed from a review of precision and accuracy data compiled by other 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.