



April 13, 2009

L-2009-090
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 2008

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 2008.

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

Sincerely,

A handwritten signature in black ink, appearing to read 'E. Katzman'.

Eric S. Katzman
Licensing Manager
St. Lucie Plant

Attachment

ESK/ttt

LEAS
NRR

2008
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. Berg 4-7-09

Reviewed by: J. D. Davis 4/7/09

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

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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.

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- 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.

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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.

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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:

The results for radioactivity measurements in surface water are consistent with past measurements and with measurements made during the pre-operational surveillance program. One indicator location sample, of 53 collected and analyzed, presented a tritium result that was less than 5% 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.

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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.

Three, of 24, indicator location and one, of 12, control location samples collected & analyzed presented Cs-137 results. The highest value was less than 5% of the Reporting Level listed in ODCM Table 3.12-2

There were no indications of any nuclides attributed to plant effluents.

Results for the broad leaf vegetation samples are summarized in Table 1.

6. 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.

7. Interlaboratory Comparison Program:

The State laboratory participated in MAPEP 18 and 19.

For MAPEP 18, the results for Water, Air Filter and Vegetation matrices for those nuclides associated with nuclear power plant operation and using analytical methods used in the REMP are Acceptable with a warning for Am-241 in vegetation.

The Soil matrix had an unacceptable identification. This sample was to determine the analytical response for Co-60 in the presence of Cs-134; Cs-134 has a photon energy almost the same as one of the two Co-60 energies. This is why the Acceptance Range entry is "Sensitivity Eval.". An evaluation of the laboratory methods was performed; the conservative result was due to interference from the presence of Cs-134 in a sample that has very little Co-60. The assay algorithm has been corrected to account for this in the future. The history of soil sampling was reviewed; as expected, there has not been a case of positive Cs-134 in a sample. These special evaluations are used by DOE to get a feel for the range of LLDs, afforded by the participants.

For MAPEP 19, all result were acceptable.

The results are listed in Attachment C.

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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.

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, 2008
 (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	Mean (f) ^b Range	
Exposure Rate, 107 ^d	—	5.5 (103/103) 4.2 - 7.3	NW-10 10 mi., NW	6.8 (4/4) 6.3 - 7.3	5.9 (4/4) 5.6 - 6.2

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, 2008
 (County, State)

PATHWAY: AIRBORNE
 SAMPLES COLLECTED: RADIOIODINE AND PARTICULATES
 UNITS: PICO - Ci/M³

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	Mean (f) ^b	
			Distance & Direction	Range	
¹³¹ I, 265	0.024	<MDA	—	—	<MDA
Gross Beta, 260	0.0025	0.013 (208/212) 0.003 - 0.070	H-08 6 miles, WNW	0.014 (52/53) 0.003 - 0.055	0.013 (52/53) 0.005 - 0.032
Composite Gamma Isotopic, 20					
⁷ Be	0.0052	0.1499 (16/16) 0.0938- 0.2251	H-14 1 mile, SE	0.1642 (4/4) 0.1233 - 0.2251	0.1620 (4/4) 0.1162 - 0.1985
¹³⁴ Cs	0.00069	<MDA	—	—	<MDA
¹³⁷ Cs	0.00066	<MDA	—	—	<MDA
²¹⁰ Pb	—	0.0171 (5/16) 0.0134 - 0.0232	H-30 2 miles, W	0.0232 (1/4)	<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, 2008
 (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	Mean (f) ^b	
			Distance & Direction	Range	
Tritium, 65	230	149 (1/53)	H-15 <1 mi., ENE/E/ESE	149 (1/53)	<MDA
Gamma Isotopic, 64					
⁴⁰ K	60	361 (53/53) 241 - 458	H-15 <1 mi., ENE/E/ESE	361 (53/53) 241 - 458	351 (12/12) 101 - 436
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, 2008
 (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		Control Locations Mean (f) ^b Range
			Name ^c	Mean (f) ^b	
			Distance & Direction	Range	
Gamma Isotopic, 4					
⁷ Be	---	<MDA	---	---	145 (2/2) 111 - 179
⁴⁰ K	140	1492 (2/2) 57 - 2727	H-15 <1 mi, ENE/E/ESE	1492 (2/2) 57 - 2727	728 (2/2) 348 - 1108
⁵⁸ Co	9	<MDA	---	---	<MDA
⁶⁰ Co	12	<MDA	---	---	<MDA
¹³⁴ Cs	14	<MDA	---	---	<MDA
¹³⁷ Cs	12	<MDA	---	---	<MDA
²²⁶ Ra	49	498 (2/2) 251 - 746	H-15 <1 mi., ENE/E/ESE	498 (2/2) 251 - 746	367 (2/2) 226 - 508
²³² Th	---	313 (1/2)	H-15 <1 mi., ENE/E/ESE	313 (1/2)	180 (2/2) 82 - 278
²³⁵ U	---	<MDA	---	---	29 (1/2)
²³⁸ U	---	<MDA	---	---	1032 (2/2) 630 - 1433

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, 2008
 (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	Mean (f) ^b	
			Distance & Direction	Range	
Gamma Isotopic, 4					
⁴⁰ K	130	1672 (2/2) 1296 - 2049	H-15 <1 mi., ENE/E/ESE	1672 (2/2) 1296 - 2049	1533 (2/2) 1496 - 1570
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
²²⁶ Ra	---	<MDA	---	---	<MDA
²²⁸ Ra	---	<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, 2008
 (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	2492 (2/2) 1836 - 3148	H-15 <1 mi., ENE/E/ESE	2492 (2/2) 1836 - 3148	2989 (2/2) 2949 - 3029
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, 2008
 (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		Control Locations Mean (f) ^b Range
			Name ^c Distance & Direction	Mean (f) ^b Range	
Gamma Isotopic, 36					
⁷ Be	71	1437 (24/24) 520 - 2249	H-51 1 mi., N/NNW	1446 (12/12) 520 - 2230	1421 (12/12) 459 - 2291
⁴⁰ K	100	3973 (24/24) 2563 - 5696	H-52 1 mi., S/SSE	4151 (12/12) 2781 - 5696	3697 (12/12) 2621 - 5733
⁵⁸ Co	6	<MDA	—	—	<MDA
⁶⁰ Co	8	<MDA	—	—	<MDA
¹³¹ I	9	<MDA	—	—	<MDA
¹³⁴ Cs	8	<MDA	—	—	<MDA
¹³⁷ Cs	8	58 (3/24) 22 - 96	H-51 1 mi., N/NNW	76 (2/12) 56 - 96	49 (1/12)
²¹⁰ Pb	—	1333 (1/24)	H-52 1 mi., S/SSE	1333 (1/12)	<MDA
²¹² Pb	—	42 (1/24)	H-52 1 mi., S/SSE	42 (1/12)	59 (12/12) 37 - 81
²²⁸ Ra	—	<MDA	—	—	38 (1/12)
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, 2008
(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

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- A) Pathway: Airborne, Particulates & Radioiodines
Location: H-14 , 1 mile Southeast
Dates: 2/14/08 – 2/18/08
Deviation: Failure to perform continuous monitoring
Description of Problem: Apparent power interruption during sampling period; estimated sampling duration of 42.6 hours of 96.3 hour sampling period.
Corrective Action: Verified equipment as operable; no repairs needed.
- B) Pathway: Airborne, Particulates & Radioiodines
Location: H-08 , 6 miles WNW
Dates: 2/28/08 – 3/4/08
Deviation: Failure to perform continuous monitoring
Description of Problem: Apparent power interruption during sampling period; estimated sampling duration of 47.1 hours of 116 hour sampling period.
Corrective Action: Verified equipment as operable; no repairs needed.
- C) Pathway: Airborne, Particulates & Radioiodines
Location: H-30 , 2 miles West
Dates: 3/4/08 – 3/12/08
Deviation: Failure to perform continuous monitoring
Description of Problem: Power interruption during sampling period; estimated sampling duration of 22.3 hours of 191.2 hour sampling period.
Corrective Action: Reset circuit breaker, verified equipment as operable.

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TABLE 1A

DEVIATIONS / MISSING DATA

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D) Pathway:	Direct Exposure, TLDs
Location:	S-5, 5.2 miles South
Dates:	05/19/08 to 6/18/08
Deviation:	Failure to perform continuous monitoring
Description of Problem:	TLD, and utility pole it was mounted on, was removed sometime during the monitoring period; TLD not recovered.
Corrective Action:	Placed new TLD on new utility pole.
E) Pathway:	Airborne, Particulates & Radioiodines
Location:	H-08 , 6 miles WNW
Dates:	12/9/08 – 12/17/08
Deviation:	Failure to perform continuous monitoring
Description of Problem:	Apparent power interruption during sampling period; estimated sampling duration of 17.2 hours of 191 hour sampling period.
Corrective Action:	Verified equipment as operable; no repairs needed.

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TABLE 1B

ANALYSIS WITH LLDs ABOVE THE REQUIRED DETECTION CAPABILITIES
(LLDs) Listed in ODCM TABLE 4.12-1
1/1/2008 – 12/31/2008

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
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Survey Performed August 2008

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	L
W	L	1.9/260	L
WNW	L	2.2/281	L
NW	L	3.5/304	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:

<u>Sector</u>	<u>Distance</u>	<u>Description</u>
SSE	1.8/147	Fire Station

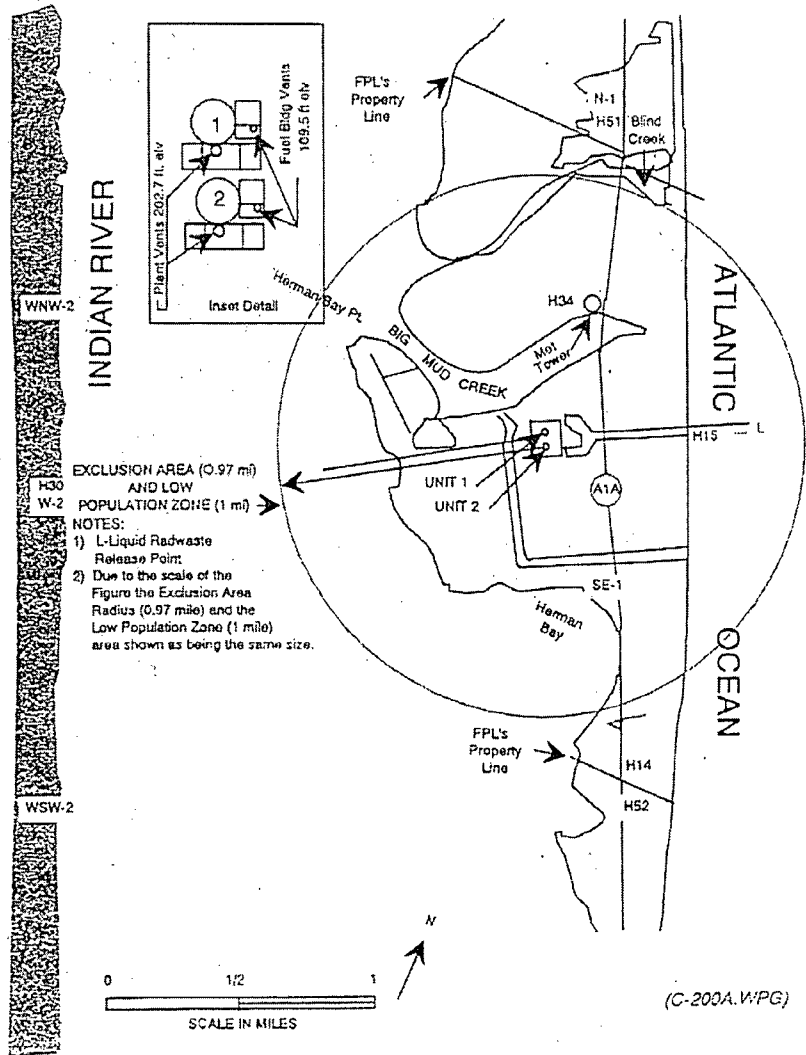
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ATTACHMENT A

KEY TO SAMPLE LOCATIONS

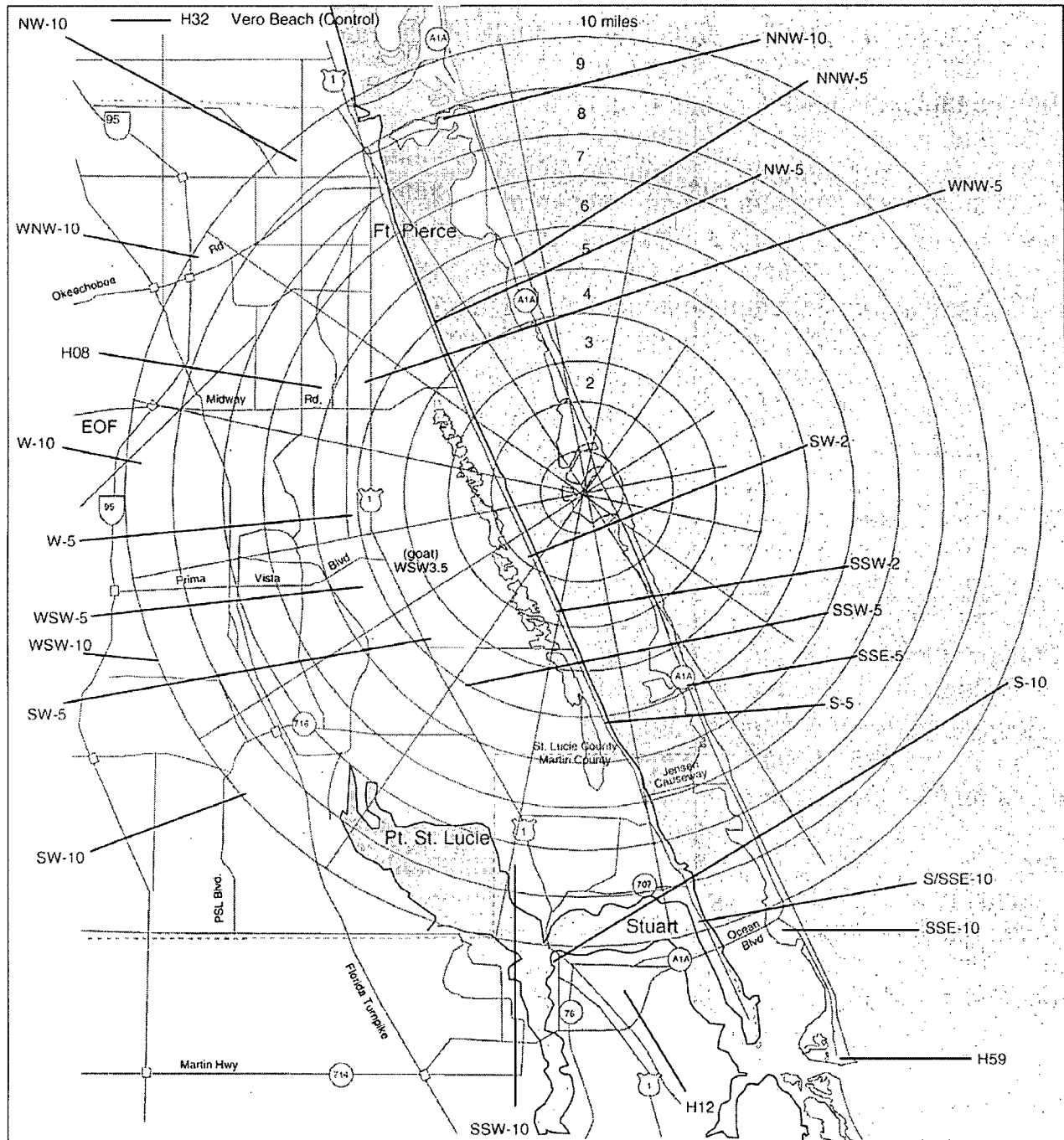
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SITE AREA MAP & ENVIRONMENTAL SAMPLE LOCATIONS



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ENVIRONMENTAL SAMPLE LOCATIONS (10 MILES)



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ATTACHMENT A

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

<u>Location Name</u>	<u>Direction Sector</u>	<u>Approximate Distance (miles)</u>	<u>Description</u>
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 33 RD 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

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ATTACHMENT A

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

<u>Location Name</u>	<u>Direction Sector</u>	<u>Approximate Distance (miles)</u>	<u>Description</u>
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
 <u>Control:</u>			
H-12	S	12	FPL Substation, SR-76 Stuart

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ATTACHMENT A

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PATHWAY: WATERBORNE

SAMPLES COLLECTED: SURFACE WATER (OCEAN)

SAMPLE COLLECTION FREQUENCY: H-15 WEEKLY, H-59 MONTHLY

<u>Location Name</u>	<u>Direction Sector</u>	<u>Approximate Distance (miles)</u>	<u>Description</u>
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
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SAMPLES COLLECTED: SHORELINE SEDIMENT

SAMPLE COLLECTION FREQUENCY: SEMI-ANNUALLY

<u>Location Name</u>	<u>Direction Sector</u>	<u>Approximate Distance (miles)</u>	<u>Description</u>
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
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ATTACHMENT A

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PATHWAY: INGESTION

SAMPLES COLLECTED: CRUSTACEA AND FISH

SAMPLE COLLECTION FREQUENCY: SEMI-ANNUALLY

<u>Location Name</u>	<u>Direction Sector</u>	<u>Approximate Distance (miles)</u>	<u>Description</u>
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
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SAMPLES COLLECTED: BROAD LEAF VEGETATION

SAMPLE COLLECTION FREQUENCY: MONTHLY

<u>Location Name</u>	<u>Direction Sector</u>	<u>Approximate Distance (miles)</u>	<u>Description</u>
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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ST. LUCIE PLANT - UNITS 1 & 2

ATTACHMENT B

RADIOLOGICAL SURVEILLANCE OF
FLORIDA POWER AND LIGHT COMPANY

ST. LUCIE SITE

2008

First Quarter 2008

Second Quarter 2008

Third Quarter 2008

Fourth Quarter 2008

ST. LUCIE SITE

Offsite Dose Calculation Manual Sampling

First Quarter, 2008

<u>Sample Type</u>	<u>Collection Frequency</u>	<u>Locations Sampled</u>	<u>Number of Samples</u>
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	1
4.a.2. Fish	Semiannually	2	2
4.b. Broadleaf Vegetation	Monthly	3	9

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 - (μ R/hour)

<u>Sample Site</u>	<u>Deployment 12-Dec-07 Collection 19-Mar-08</u>	<u>Sample Site</u>	<u>Deployment 12-Dec-07 Collection 19-Mar-08</u>
N-1	5.0 \pm 0.6	SW-2	4.9 \pm 0.6
NNW-5	4.9 \pm 0.5	SW-5	6.2 \pm 0.5
NNW-10	5.5 \pm 0.8	SW-10	5.3 \pm 0.6
NW-5	4.8 \pm 0.7	SSW-2	4.7 \pm 0.4
NW-10	6.3 \pm 0.9	SSW-5	5.9 \pm 0.4
		SSW-10	5.3 \pm 0.4
WNW-2	5.4 \pm 0.6		
WNW-5	5.3 \pm 0.6	S-5	5.1 \pm 0.6
WNW-10	6.0 \pm 0.5	S-10	4.9 \pm 0.4 (A)
		S/SSE-10	5.0 \pm 0.4
W-2	4.8 \pm 0.8		
W-5	5.5 \pm 0.6	SSE-5	4.4 \pm 0.3
W-10	6.9 \pm 0.6	SSE-10	6.1 \pm 0.5(B)
WSW-2	5.6 \pm 0.7	SE-1	4.9 \pm 0.4
WSW-5	5.3 \pm 0.6		
WSW-10	4.8 \pm 0.6	H-32	5.6 \pm 0.4

(A) TLD initially lost, found and retrieved on 3/25/08.

(B) TLD was initially unrecoverable; crushed between two concrete utility poles.
TLD was recovered on 18-Apr-08 by Pete Bailey.

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

<u>Collection Date</u>	<u>H08</u>	<u>H12</u>	<u>H14</u>	<u>H30</u>	<u>H34</u>
02-Jan-08	<0.01	<0.01	<0.01	<0.01	<0.01
10-Jan-08	<0.01	<0.01	<0.01	<0.02	<0.01
14-Jan-08	<0.02	<0.03	<0.03	<0.02	<0.02
23-Jan-08	<0.01	<0.01	<0.01	<0.01	<0.01
31-Jan-08	<0.01	<0.01	<0.01	<0.01	<0.01
06-Feb-08	<0.02	<0.02	<0.02	<0.02	<0.02
14-Feb-08	<0.02	<0.02	<0.02	<0.02	<0.02
18-Feb-08	<0.02	<0.03	<0.06(A)	<0.02	<0.03
28-Feb-08	<0.01	<0.01	<0.01	<0.01	<0.01
04-Mar-08	<0.07(B)	<0.03	<0.03	<0.03	<0.03
12-Mar-08	<0.01	<0.01	<0.01	<0.04(C)	<0.01
19-Mar-08	<0.01	<0.02	<0.02	<0.02	<0.02
25-Mar-08	<0.02	<0.02	<0.02	<0.02	<0.02

(A) Possible loss of power. Estimated run time 42.6 out of 96.3 hours.

(B) Possible loss of power. Estimated run time 47.1 out of 116 hours.

(C) Breaker tripped and was reset. Estimated run time 22.3 out of 191.2 hours.

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

<u>Collection Date</u>	<u>H08</u>	<u>H12</u>	<u>H14</u>	<u>H30</u>	<u>H34</u>
02-Jan-08	0.010 ± 0.002	0.011 ± 0.002	0.013 ± 0.002	0.012 ± 0.002	0.014 ± 0.002
10-Jan-08	0.007 ± 0.002	0.006 ± 0.001	<0.006	0.007 ± 0.002	0.008 ± 0.002
14-Jan-08	0.007 ± 0.003	0.008 ± 0.003	0.006 ± 0.002	0.005 ± 0.002	0.012 ± 0.003
23-Jan-08	0.011 ± 0.002	0.011 ± 0.002	0.010 ± 0.002	0.008 ± 0.002	0.009 ± 0.002
31-Jan-08	0.015 ± 0.002	<0.005	0.012 ± 0.002	0.010 ± 0.002	0.014 ± 0.002
06-Feb-08	0.011 ± 0.002	0.013 ± 0.002	0.011 ± 0.002	0.007 ± 0.002	0.008 ± 0.002
14-Feb-08	0.007 ± 0.002	0.011 ± 0.002	0.010 ± 0.002	0.010 ± 0.002	0.008 ± 0.002
18-Feb-08	0.012 ± 0.003	0.012 ± 0.003	0.004 ± 0.002(A)	0.009 ± 0.001	0.012 ± 0.003
28-Feb-08	0.015 ± 0.002	0.011 ± 0.001	0.015 ± 0.002	0.013 ± 0.002	0.015 ± 0.002
04-Mar-08	0.025 ± 0.006(B)	0.010 ± 0.002	0.010 ± 0.003	0.016 ± 0.003	0.005 ± 0.002
12-Mar-08	0.013 ± 0.002	0.014 ± 0.002	0.016 ± 0.002	0.070 ± 0.014(C)	0.010 ± 0.002
19-Mar-08	0.006 ± 0.002	0.010 ± 0.002	0.006 ± 0.002	0.023 ± 0.002	0.012 ± 0.002
25-Mar-08	0.014 ± 0.002	0.013 ± 0.002	0.015 ± 0.002	0.012 ± 0.002	0.013 ± 0.002
Average:	0.012 ± 0.001	<0.010	<0.010	0.016 ± 0.001	0.011 ± 0.001

(A) Possible loss of power. Estimated run time 42.6 out of 96.3 hours.

(B) Possible loss of power. Estimated run time 47.1 out of 116 hours.

(C) Breaker tripped and was reset. Estimated run time 22.3 out of 191.2 hours.

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

<u>Sample Site</u>	<u>Be-7</u>	<u>K-40</u>	<u>Cs-134</u>	<u>Cs-137</u>	<u>Pb-210</u>
H08	0.2073 ± 0.0131	<0.0190	<0.0013	<0.0009	0.0151 ± 0.0043
H12	0.1405 ± 0.0146	<0.0279	<0.0019	<0.0016	<0.0533
H14	0.1641 ± 0.0135	<0.0226	<0.0014	<0.0007	0.0161 ± 0.0048
H30	0.1442 ± 0.0108	<0.0214	<0.0013	<0.0010	0.0232 ± 0.0028
H34	0.1675 ± 0.0135	<0.0230	<0.0014	<0.0008	<0.0549

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	I-131	Cs-134	Cs-137	Ba-140
									Nb-95 (A)				La-140 (B)
H15	02-Jan-08	<134	406 ± 15	<2	<2	<3	<2	<3	<3	<2	<2	<2	<4
	10-Jan-08	<140	313 ± 43	<5	<4	<9	<4	<10	<7	<5	<5	<5	<6
	14-Jan-08	<140	414 ± 31	<3	<5	<7	<5	<9	<6	<5	<4	<4	<5
	24-Jan-08	<140	406 ± 36	<4	<3	<8	<4	<8	<7	<5	<4	<4	<6
	31-Jan-08	<140	326 ± 34	<2	<2	<5	<3	<6	<4	<3	<3	<2	<4
	06-Feb-08	<140	332 ± 40	<4	<4	<9	<4	<10	<7	<4	<5	<4	<14
	14-Feb-08	<140	458 ± 38	<4	<5	<8	<6	<10	<9	<9	<5	<4	<7
	18-Feb-08	<139	407 ± 35	<3	<3	<7	<3	<8	<6	<5	<4	<4	<7
	28-Feb-08	<143	365 ± 17	<2	<2	<3	<2	<4	<3	<2	<2	<2	<3
	04-Mar-08	<143	353 ± 17	<2	<2	<3	<2	<3	<3	<2	<2	<2	<3
	12-Mar-08	<143	348 ± 26	<3	<2	<6	<3	<5	<4	<4	<3	<3	<4
	19-Mar-08	<143	345 ± 36	<3	<3	<7	<4	<8	<6	<6	<5	<4	<6
	25-Mar-08	<143	370 ± 36	<3	<4	<7	<4	<7	<7	<4	<4	<4	<13
H59	11-Jan-08	<140	304 ± 33	<2	<2	<5	<3	<5	<4	<3	<3	<3	<4
	14-Feb-08	<140	389 ± 52	<5	<5	<12	<4	<11	<11	<8	<8	<4	<4
	04-Mar-08	<143	349 ± 33	<4	<4	<8	<5	<8	<6	<7	<4	<4	<8

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

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

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

Sample Site	Collection Date	<u>Be-7</u>	<u>K-40</u>	<u>Co-58</u>	<u>Co-60</u>	<u>Cs-134</u>	<u>Cs-137</u>	<u>Pb-210</u>	<u>Ra-226</u>	<u>Th-232</u>	<u>U-238</u>
H15	14-Feb-08	<113	257 ± 76	<10	<13	<14	<12	<835	251 ± 110	<60	<75
H59	14-Feb-08	179 ± 28	1108 ± 59	<6	<7	<9	<7	<570	508 ± 71	278 ± 12	29 ± 5

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

Sample Site	Collection Date	<u>K-40</u>	<u>Mn-54</u>	<u>Co-58</u>	<u>Fe-59</u>	<u>Co-60</u>	<u>Zn-65</u>	<u>Cs-134</u>	<u>Cs-137</u>	<u>Ra-226</u>	<u>Ra-228</u>
H15	This sample has not yet been collected.										
H59	14-Feb-08	1570 ± 274	<51	<42	<99	<54	<90	<52	<39	<854	<200

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

Sample Site	Collection Date	<u>K-40</u>	<u>Mn-54</u>	<u>Co-58</u>	<u>Fe-59</u>	<u>Co-60</u>	<u>Zn-65</u>	<u>Cs-134</u>	<u>Cs-137</u>	<u>Ra-226</u>	<u>Ra-228</u>
H15	15-Feb-08	3148 ± 295	<27	<22	<39	<27	<57	<34	<27	<416	<98
H59	06-Feb-08	2949 ± 216	<18	<15	<41	<20	<35	<20	<16	<271	<75

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

<u>Sample Site</u>	<u>Collection Date</u>	<u>Be-7</u>	<u>K-40</u>	<u>I-131</u>	<u>Cs-134</u>	<u>Cs-137</u>	<u>Pb-210</u>	<u>Ra-226</u>	<u>Others:</u>	
									<u>Pb-212</u>	<u>Ra-228</u>
H51	11-Jan-08	1573 ± 104	2725 ± 198	<23	<15	<13	<2618	<365		
	14-Feb-08	1957 ± 116	5394 ± 251	<22	<21	<24	<2665	<365		
	04-Mar-08	1987 ± 140	4401 ± 238	<20	<23	96 ± 13	<2801	<433		
H52	11-Jan-08	1791 ± 130	2781 ± 218	<26	<24	<21	<3014	<388		
	14-Feb-08	2007 ± 105	4573 ± 171	<21	<14	<15	<791	<274		
	04-Mar-08	1577 ± 98	4529 ± 186	<16	<16	<18	<966	<329		
H59	11-Jan-08	1526 ± 75	3190 ± 142	<18	<14	<12	<757	<274		
	14-Feb-08	2103 ± 56	4567 ± 129	<11	<9	<8	<1148	<165	37 ± 6	38 ± 11
	04-Mar-08	2291 ± 141	5061 ± 285	<17	<26	49 ± 11	<3131	<424	81 ± 13	

ST. LUCIE SITE

Offsite Dose Calculation Manual Sampling

Second Quarter, 2008

<u>Sample Type</u>	<u>Collection Frequency</u>	<u>Locations Sampled</u>	<u>Number of Samples</u>
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	1
4.a.2. Fish	Semiannually	2	0
4.b. Broadleaf Vegetation	Monthly	3	9
			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 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 - ($\mu\text{R}/\text{hour}$)

Sample Site	Deployment 19-Mar-08 Collection 18-Jun-08	Sample Site	Deployment 19-Mar-08 Collection 18-Jun-08
N-1	5.4 ± 0.5	SW-2	5.1 ± 0.5
NNW-5	5.0 ± 0.4	SW-5	6.2 ± 0.6
NNW-10	5.5 ± 0.4	SW-10	5.4 ± 0.4
NW-5	4.9 ± 0.4	SSW-2	5.1 ± 0.3
NW-10	6.6 ± 0.4	SSW-5	6.2 ± 0.5
WNW-2	4.9 ± 0.4	SSW-10	5.9 ± 0.5
WNW-5	5.2 ± 0.5	S-5	(A)
WNW-10	5.9 ± 0.4	S-10	4.2 ± 0.7
W-2	4.7 ± 0.4	S/SSE-10	5.3 ± 0.4
W-5	5.4 ± 0.4	SSE-5	5.0 ± 0.4
W-10	5.2 ± 0.4	SSE-10	4.9 ± 0.7
WSW-2	5.2 ± 0.4	SE-1	5.1 ± 0.5
WSW-5	5.4 ± 0.5	H-32	5.9 ± 0.4
WSW-10	4.7 ± 0.4		

(A) Previous utility pole was removed and a new utility pole installed; TLD lost.

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

<u>Collection Date</u>	<u>H08</u>	<u>H12</u>	<u>H14</u>	<u>H30</u>	<u>H34</u>
01-Apr-08	<0.02	<0.02	<0.02	<0.02	<0.02
10-Apr-08	<0.01	<0.01	<0.01	<0.01	<0.01
17-Apr-08	<0.01	<0.01	<0.01	<0.01	<0.01
23-Apr-08	<0.01	<0.01	<0.01	<0.01	<0.01
30-Apr-08	<0.01	<0.01	<0.01	<0.01	<0.01
05-May-08	<0.02	<0.02	<0.02	<0.02	<0.02
14-May-08	<0.01	<0.01	<0.01	<0.01	<0.01
21-May-08	<0.01	<0.01	<0.01	<0.01	<0.01
29-May-08	<0.01	<0.01	<0.01	<0.01	<0.01
03-Jun-08	<0.02	<0.02	<0.02	<0.02	<0.02
10-Jun-08	<0.01	<0.01	<0.01	<0.01	<0.01
17-Jun-08	<0.01	<0.01	<0.01	<0.01	<0.01
26-Jun-08	<0.01	<0.01	<0.01	<0.01	<0.01

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

<u>Collection Date</u>	<u>H08</u>	<u>H12</u>	<u>H14</u>	<u>H30</u>	<u>H34</u>
01-Apr-08	0.017 ± 0.002	0.010 ± 0.002	0.015 ± 0.002	0.014 ± 0.002	0.011 ± 0.002
10-Apr-08	0.006 ± 0.001	0.008 ± 0.002	0.007 ± 0.001	0.009 ± 0.001	0.006 ± 0.001
17-Apr-08	0.011 ± 0.002	0.020 ± 0.002	0.017 ± 0.002	0.010 ± 0.002	0.012 ± 0.002
23-Apr-08	0.019 ± 0.003	0.025 ± 0.003	0.023 ± 0.003	0.013 ± 0.002	0.017 ± 0.002
30-Apr-08	<0.007	0.017 ± 0.002	0.019 ± 0.002	<0.007	0.016 ± 0.002
05-May-08	0.025 ± 0.003	0.032 ± 0.003	0.029 ± 0.003	0.029 ± 0.003	0.027 ± 0.003
14-May-08	0.017 ± 0.002	0.019 ± 0.002	0.020 ± 0.002	0.015 ± 0.002	0.018 ± 0.002
21-May-08	0.019 ± 0.002	0.019 ± 0.002	0.019 ± 0.002	0.022 ± 0.002	0.022 ± 0.002
29-May-08	0.010 ± 0.002	0.009 ± 0.002	0.008 ± 0.002	0.012 ± 0.002	0.008 ± 0.002
03-Jun-08	0.012 ± 0.003	0.011 ± 0.003	0.018 ± 0.003	0.007 ± 0.002	0.010 ± 0.002
10-Jun-08	0.014 ± 0.002	0.011 ± 0.002	0.011 ± 0.002	0.007 ± 0.002	0.008 ± 0.002
17-Jun-08	0.009 ± 0.002	0.015 ± 0.002	0.016 ± 0.002	0.014 ± 0.002	0.016 ± 0.002
26-Jun-08	0.010 ± 0.002	0.011 ± 0.002	0.009 ± 0.002	0.006 ± 0.001	0.003 ± 0.001
Average:	<0.013	0.016 ± 0.001	0.016 ± 0.001	<0.012	0.013 ± 0.001

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

<u>Sample Site</u>	<u>Be-7</u>	<u>K-40</u>	<u>Cs-134</u>	<u>Cs-137</u>	<u>Pb-210</u>
H08	0.1437 ± 0.0132	<0.0252	<0.0012	<0.0012	<0.0470
H12	0.1927 ± 0.0140	<0.0192	<0.0022	<0.0014	<0.0653
H14	0.2251 ± 0.0157	<0.0223	<0.0015	<0.0011	<0.0551
H30	0.1659 ± 0.0128	<0.0271	<0.0012	<0.0016	<0.0453
H34	0.1815 ± 0.0140	<0.0250	<0.0014	<0.0013	<0.0479

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	I-131	Cs-134	Cs-137	Ba-140
									Nb-95 (A)				La-140 (B)
H15	01-Apr-08	<145	366 ± 51	<5	<6	<12	<7	<10	<7	<8	<6	<5	<6
	10-Apr-08	<145	360 ± 41	<3	<3	<8	<4	<8	<6	<4	<4	<3	<6
	17-Apr-08	<134	335 ± 31	<4	<3	<7	<4	<8	<7	<6	<4	<4	<6
	23-Apr-08	<141	319 ± 47	<6	<3	<9	<6	<9	<7	<4	<6	<4	<14
	30-Apr-08	<140	302 ± 33	<3	<3	<6	<4	<8	<5	<3	<4	<3	<11
	05-May-08	<139	437 ± 23	<2	<2	<4	<3	<5	<4	<3	<3	<2	<5
	15-May-08	<142	378 ± 34	<3	<4	<6	<4	<9	<6	<5	<4	<3	<5
	21-May-08	<142	328 ± 29	<2	<2	<4	<2	<4	<3	<2	<2	<2	<3
	29-May-08	<142	336 ± 52	<4	<4	<10	<6	<10	<6	<6	<5	<4	<7
	03-Jun-08	<142	379 ± 35	<4	<3	<7	<4	<9	<8	<4	<5	<4	<14
	10-Jun-08	<141	321 ± 49	<4	<4	<8	<5	<10	<8	<4	<5	<4	<10
	18-Jun-08	<140	331 ± 31	<2	<2	<4	<2	<4	<3	<3	<2	<2	<3
	26-Jun-08	<140	386 ± 25	<2	<3	<5	<3	<5	<4	<3	<3	<3	<4
H59	01-Apr-08	<145	101 ± 40	<5	<6	<11	<5	<10	<10	<9	<5	<5	<7
	21-May-08	<142	283 ± 55	<5	<6	<15	<6	<14	<9	<9	<6	<5	<10
	10-Jun-08	<141	406 ± 38	<4	<4	<7	<5	<9	<6	<5	<4	<4	<7

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

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

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

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

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

<u>Sample Site</u>	<u>Collection Date</u>	<u>K-40</u>	<u>Mn-54</u>	<u>Co-58</u>	<u>Fe-59</u>	<u>Co-60</u>	<u>Zn-65</u>	<u>Cs-134</u>	<u>Cs-137</u>	<u>Ra-226</u>	<u>Ra-228</u>
H15	14-May-08	2049 ± 159	<16	<15	<31	<17	<36	<18	<17	<269	<62

H59 This sample was previously collected.

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

<u>Sample Site</u>	<u>Collection Date</u>	<u>K-40</u>	<u>Mn-54</u>	<u>Co-58</u>	<u>Fe-59</u>	<u>Co-60</u>	<u>Zn-65</u>	<u>Cs-134</u>	<u>Cs-137</u>	<u>Ra-226</u>	<u>Ra-228</u>
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H15 This sample was previously collected.

H59 This sample was previously collected.

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

<u>Sample Site</u>	<u>Collection Date</u>	<u>Be-7</u>	<u>K-40</u>	<u>I-131</u>	<u>Cs-134</u>	<u>Cs-137</u>	<u>Pb-210</u>	<u>Pb-212</u>	<u>Ra-226</u>	<u>Ra-228</u>
H51	01-Apr-08	2087 ± 114	4704 ± 233	<22	<18	<13	<2240	<71	<320	<59
	21-May-08	520 ± 89	3294 ± 199	<19	<16	<14	<1881	<69	<279	<58
	10-Jun-08	802 ± 86	4685 ± 273	<16	<16	<14	<2501	<71	<371	<69
H52	01-Apr-08	2206 ± 46	3727 ± 76	<6	<5	<5	1333 ± 197	<41	<116	<19
	21-May-08	1000 ± 82	5969 ± 180	<19	<13	<11	<728	<82	<230	<44
	10-Jun-08	765 ± 82	4533 ± 237	<13	<17	<18	<2569	<82	<351	<65
H59	01-Apr-08	1979 ± 112	5074 ± 261	<14	<19	<16	<2264	<77	<344	<61
	21-May-08	459 ± 77	2770 ± 164	<21	<16	<14	<1729	<62	<263	<55
	10-Jun-08	551 ± 60	3340 ± 135	<9	<11	<11	<642	<67	<204	<35

ST. LUCIE SITE

Offsite Dose Calculation Manual Sampling

Third Quarter, 2008

<u>Sample Type</u>	<u>Collection Frequency</u>	<u>Locations Sampled</u>	<u>Number of Samples</u>
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	1
4.a.2. Fish	Semiannually	2	2
4.b. Broadleaf Vegetation	Monthly	3	9
			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 - (μ R/hour)

Sample Site	Deployment 18-Jun-08 Collection 17-Sep-08	Sample Site	Deployment 18-Jun-08 Collection 17-Sep-08
N-1	5.6 \pm 0.6	SW-2	5.7 \pm 0.4
NNW-5	5.3 \pm 0.5	SW-5	6.6 \pm 0.7
NNW-10	6.2 \pm 0.8	SW-10	5.4 \pm 0.4
NW-5	4.8 \pm 0.6	SSW-2	5.2 \pm 0.4
NW-10	6.8 \pm 0.9	SSW-5	6.0 \pm 0.4
WNW-2	5.6 \pm 0.6	SSW-10	5.9 \pm 0.5
WNW-5	5.4 \pm 0.6	S-5	6.7 \pm 0.5
WNW-10	6.3 \pm 0.5	S-10	5.4 \pm 0.3
W-2	5.1 \pm 0.7	S/SSE-10	4.9 \pm 0.3
W-5	5.6 \pm 0.6	SSE-5	4.7 \pm 0.4
W-10	5.7 \pm 0.7	SSE-10	6.4 \pm 0.4
WSW-2	5.7 \pm 0.6	SE-1	5.2 \pm 0.3
WSW-5	5.9 \pm 0.5	H-32	6.0 \pm 0.4
WSW-10	4.9 \pm 0.5		

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

<u>Collection Date</u>	<u>H08</u>	<u>H12</u>	<u>H14</u>	<u>H30</u>	<u>H34</u>
02-Jul-08	<0.01	<0.01	<0.01	<0.01	<0.01
09-Jul-08	<0.02	<0.02	<0.02	<0.02	<0.02
15-Jul-08	<0.02	<0.02	<0.02	<0.02	<0.02
22-Jul-08	<0.02	<0.02	<0.02	<0.02	<0.02
29-Jul-08	<0.02	<0.02	<0.02	<0.02	<0.02
05-Aug-08	<0.03	<0.03	<0.03	<0.03	<0.03
14-Aug-08	<0.01	<0.01	<0.01	<0.01	<0.01
20-Aug-08	<0.02	<0.02	<0.02	<0.02	<0.02
27-Aug-08	<0.02	<0.02	<0.02	<0.02	<0.02
02-Sep-08	<0.03	<0.03	<0.03	<0.03	<0.03
09-Sep-08	<0.02	<0.02	<0.02	<0.02	<0.02
16-Sep-08	<0.03	<0.03	<0.03	<0.03	<0.02
22-Sep-08	<0.03	<0.03	<0.03	<0.03	<0.03

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

<u>Collection Date</u>	<u>H08</u>	<u>H12</u>	<u>H14</u>	<u>H30</u>	<u>H34</u>
02-Jul-08	0.017 ± 0.003	0.013 ± 0.002	0.018 ± 0.003	0.005 ± 0.002	0.018 ± 0.002
09-Jul-08	0.013 ± 0.002	0.011 ± 0.002	0.013 ± 0.002	0.011 ± 0.002	0.011 ± 0.002
15-Jul-08	0.016 ± 0.002	0.016 ± 0.002	0.016 ± 0.002	0.015 ± 0.002	0.012 ± 0.002
22-Jul-08	0.013 ± 0.002	0.013 ± 0.002	0.011 ± 0.002	<0.005	0.016 ± 0.002
29-Jul-08	0.010 ± 0.002	0.007 ± 0.002	0.023 ± 0.002	0.008 ± 0.002	0.011 ± 0.002
05-Aug-08	0.005 ± 0.001	0.011 ± 0.002	0.012 ± 0.002	0.009 ± 0.002	0.014 ± 0.002
14-Aug-08	0.014 ± 0.002	0.019 ± 0.002	0.012 ± 0.002	0.016 ± 0.002	0.014 ± 0.002
20-Aug-08	0.010 ± 0.002	0.009 ± 0.002	0.008 ± 0.002	0.008 ± 0.002	0.009 ± 0.002
27-Aug-08	0.004 ± 0.002	0.008 ± 0.002	0.005 ± 0.001	0.007 ± 0.002	0.007 ± 0.002
02-Sep-08	0.016 ± 0.002	0.014 ± 0.002	0.012 ± 0.002	0.011 ± 0.002	0.004 ± 0.002
09-Sep-08	0.021 ± 0.002	0.019 ± 0.002	0.019 ± 0.002	0.014 ± 0.002	0.021 ± 0.002
16-Sep-08	0.009 ± 0.002	0.008 ± 0.002	0.008 ± 0.002	0.009 ± 0.002	0.009 ± 0.002
22-Sep-08	0.009 ± 0.002	0.010 ± 0.002	0.008 ± 0.002	0.005 ± 0.002	0.004 ± 0.002
Average:	0.012 ± 0.001	0.012 ± 0.001	0.013 ± 0.001	<0.009	0.012 ± 0.001

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

<u>Sample Site</u>	<u>Be-7</u>	<u>K-40</u>	<u>Cs-134</u>	<u>Cs-137</u>	<u>Pb-210</u>
H08	0.1192 ± 0.0103	<0.0190	<0.0014	<0.0011	0.0177 ± 0.0037
H12	0.1162 ± 0.0141	<0.0316	<0.0024	<0.0014	<0.0550
H14	0.1233 ± 0.0045	<0.0077	<0.0005	<0.0004	0.0113 ± 0.0057
H30	0.0938 ± 0.0112	<0.0193	<0.0017	<0.0010	<0.0101
H34	0.1009 ± 0.0130	<0.0308	<0.0022	<0.0016	<0.0537

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	I-131	Cs-134	Cs-137	Ba-140
									Nb-95 (A)				La-140 (B)
H15	02-Jul-08	149 ± 26	347 ± 50	<5	<4	<9	<5	<10	<9	<7	<5	<6	<6
	09-Jul-08	<140	301 ± 59	<5	<5	<11	<7	<12	<10	<7	<6	<4	<8
	15-Jul-08	<140	411 ± 34	<4	<3	<6	<4	<8	<6	<4	<4	<3	<6
	22-Jul-08	<139	364 ± 41	<3	<4	<8	<5	<9	<7	<4	<4	<4	<9
	29-Jul-08	<138	390 ± 38	<4	<3	<7	<4	<6	<7	<4	<4	<4	<8
	05-Aug-08	<146	255 ± 55	<5	<4	<11	<5	<9	<8	<7	<6	<5	<11
	14-Aug-08	<142	430 ± 17	<2	<2	<3	<2	<3	<3	<2	<2	<2	<2
	20-Aug-08	<142	391 ± 34	<3	<3	<7	<4	<7	<7	<4	<4	<4	<11
	27-Aug-08	<142	443 ± 34	<3	<3	<8	<4	<7	<6	<6	<5	<4	<4
	02-Sep-08	<142	334 ± 58	<5	<4	<8	<5	<14	<9	<6	<5	<5	<10
	09-Sep-08	<142	241 ± 52	<4	<4	<9	<7	<7	<8	<4	<5	<5	<7
	17-Sep-08	<136	435 ± 14	<1	<1	<3	<2	<3	<2	<2	<2	<1	<2
	22-Sep-08	<136	381 ± 30	<3	<3	<5	<4	<7	<5	<4	<4	<3	<5
H59	02-Jul-08	<140	411 ± 25	<2	<2	<6	<3	<6	<4	<4	<3	<3	<4
	05-Aug-08	<146	436 ± 32	<3	<3	<6	<4	<9	<6	<4	<4	<4	<4
	09-Sep-08	<142	357 ± 55	<4	<4	<11	<6	<11	<9	<4	<5	<5	<12

(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)

<u>Sample Site</u>	<u>Collection Date</u>	<u>Be-7</u>	<u>K-40</u>	<u>Co-58</u>	<u>Co-60</u>	<u>Cs-134</u>	<u>Cs-137</u>	<u>Pb-210</u>	<u>Ra-226</u>	<u>Th-232</u>	<u>U-238</u>
H15	14-Aug-08	<156	2727 ± 165	<14	<18	<20	<15	<1260	746 ± 150	313 ± 27	<1046
H59	14-Aug-08	111 ± 22	348 ± 43	<4	<5	<5	<5	<367	226 ± 51	82 ± 7	630 ± 156

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

<u>Sample Site</u>	<u>Collection Date</u>	<u>K-40</u>	<u>Mn-54</u>	<u>Co-58</u>	<u>Fe-59</u>	<u>Co-60</u>	<u>Zn-65</u>	<u>Cs-134</u>	<u>Cs-137</u>	<u>Ra-226</u>	<u>Ra-228</u>
H15	This sample not yet collected.										
H59	05-Aug-08	1496 ± 133	<19	<19	<43	<22	<40	<25	<19	<338	<80

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

<u>Sample Site</u>	<u>Collection Date</u>	<u>K-40</u>	<u>Mn-54</u>	<u>Co-58</u>	<u>Fe-59</u>	<u>Co-60</u>	<u>Zn-65</u>	<u>Cs-134</u>	<u>Cs-137</u>	<u>Ra-226</u>	<u>Ra-228</u>
H15	05-Aug-08	1836 ± 202	<16	<17	<36	<19	<32	<22	<19	<319	<75
H59	05-Aug-08	3029 ± 255	<23	<25	<51	<38	<63	<31	<26	<395	<100

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

<u>Sample Site</u>	<u>Collection Date</u>	<u>Be-7</u>	<u>K-40</u>	<u>I-131</u>	<u>Cs-134</u>	<u>Cs-137</u>	<u>Pb-210</u>	<u>Pb-212</u>	<u>Ra-226</u>	<u>Ra-228</u>
H51	02-Jul-08	1792 ± 106	3144 ± 211	<24	<16	<15	<2216	<69	<308	<61
	05-Aug-08	660 ± 67	4508 ± 169	<12	<14	<17	<717	<90	<223	<42
	09-Sep-08	1686 ± 88	3420 ± 149	<12	<13	56 ± 6	<747	<99	<290	<48
H52	02-Jul-08	1155 ± 65	2801 ± 120	<17	<8	22 ± 4	<584	<67	<191	<27
	05-Aug-08	931 ± 98	5655 ± 267	<15	<21	<19	<2481	<86	<361	<73
	09-Sep-08	1458 ± 101	4491 ± 215	<12	<17	<17	<2338	<78	<343	<71
H59	02-Jul-08	1232 ± 86	2621 ± 187	<22	<19	<15	<2509	<67	<328	<60
	05-Aug-08	814 ± 109	5733 ± 274	<14	<19	<23	<2413	<82	<311	<77
	09-Sep-08	1401 ± 98	3865 ± 236	<18	<18	<18	<2327	<84	<332	<64

ST. LUCIE SITE

Offsite Dose Calculation Manual Sampling

Fourth Quarter, 2008

<u>Sample Type</u>	<u>Collection Frequency</u>	<u>Locations Sampled</u>	<u>Number of Samples</u>
1. Direct Radiation	Quarterly	27	27
2. Airborne			
2.a. Air Iodines	Weekly	5	70
2.b. Air Particulates	Weekly	5	70
3. Waterborne			
3.a. Surface Water	Weekly	1	14
	Monthly	1	3
3.b. Shoreline Sediment	Semiannually	2	0
4. Ingestion			
4.a. Fish and Invertebrates			
4.a.1. Crustacea	Semiannually	2	1
4.a.2. Fish	Semiannually	2	0
4.b. Broadleaf Vegetation	Monthly	3	9
			<hr/>
			Total: 194

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 - ($\mu\text{R}/\text{hour}$)

Sample Site	Deployment 17-Sep-08 Collection 10-Dec-08	Sample Site	Deployment 17-Sep-08 Collection 10-Dec-08
N-1	5.4 ± 0.4	SW-2	4.9 ± 0.4
NNW-5	5.3 ± 0.3	SW-5	6.1 ± 0.4
NNW-10	6.1 ± 0.6	SW-10	5.3 ± 0.3
NW-5	5.7 ± 0.4	SSW-2	5.3 ± 0.3
NW-10	7.3 ± 0.6	SSW-5	5.5 ± 0.3
WNW-2	5.2 ± 0.5	SSW-10	6.1 ± 0.5
WNW-5	5.4 ± 0.4	S-5	6.7 ± 0.4
WNW-10	6.1 ± 0.4	S-10	5.5 ± 0.6
W-2	4.5 ± 0.3	S/SSE-10	5.1 ± 0.4
W-5	5.7 ± 0.5	SSE-5	5.0 ± 0.4
W-10	5.4 ± 0.5	SSE-10	6.4 ± 0.6
WSW-2	5.6 ± 0.4	SE-1	5.4 ± 0.4
WSW-5	6.0 ± 0.4	H-32	6.2 ± 0.5
WSW-10	4.8 ± 0.3		

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

<u>Collection Date</u>	<u>H08</u>	<u>H12</u>	<u>H14</u>	<u>H30</u>	<u>H34</u>
01-Oct-08	<0.02	<0.02	<0.02	<0.02	<0.02
08-Oct-08	<0.02	<0.02	<0.02	<0.02	<0.02
15-Oct-08	<0.02	<0.02	<0.02	<0.02	<0.02
23-Oct-08	<0.01	<0.01	<0.01	<0.01	<0.01
29-Oct-08	<0.02	<0.02	<0.02	<0.02	<0.02
04-Nov-08	<0.02	<0.02	<0.02	<0.02	<0.02
12-Nov-08	<0.02	<0.02	<0.02	<0.02	<0.02
18-Nov-08	<0.02	<0.02	<0.02	<0.02	<0.02
24-Nov-08	<0.01	<0.02	<0.02	<0.02	<0.01
04-Dec-08	<0.02	<0.02	<0.02	<0.01	<0.02
09-Dec-08	<0.04	<0.03	<0.03	<0.03	<0.03
17-Dec-08	<0.06(A)	<0.02	<0.02	<0.02	<0.02
23-Dec-08	<0.02	<0.02	<0.02	<0.02	<0.02
30-Dec-08	<0.02	<0.02	<0.02	<0.02	<0.02

(A) Estimated run time 17.2 out of 191 hours. System appeared to be running normally at time of collection.

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

<u>Collection Date</u>	<u>H08</u>	<u>H12</u>	<u>H14</u>	<u>H30</u>	<u>H34</u>
01-Oct-08	0.010 ± 0.001	0.010 ± 0.001	0.007 ± 0.001	0.007 ± 0.001	0.008 ± 0.001
08-Oct-08	0.025 ± 0.002	0.016 ± 0.002	0.019 ± 0.002	0.018 ± 0.002	0.016 ± 0.002
15-Oct-08	0.011 ± 0.002	0.005 ± 0.001	0.009 ± 0.002	0.007 ± 0.002	0.009 ± 0.002
23-Oct-08	0.020 ± 0.002	0.021 ± 0.002	0.012 ± 0.002	0.018 ± 0.002	0.009 ± 0.002
29-Oct-08	0.019 ± 0.002	0.015 ± 0.002	0.007 ± 0.002	0.009 ± 0.002	0.009 ± 0.002
04-Nov-08	0.008 ± 0.002	0.012 ± 0.002	0.010 ± 0.002	0.007 ± 0.002	0.009 ± 0.002
12-Nov-08	0.013 ± 0.002	0.017 ± 0.002	0.011 ± 0.002	0.010 ± 0.002	0.010 ± 0.002
18-Nov-08	0.009 ± 0.002	0.013 ± 0.002	0.013 ± 0.002	0.007 ± 0.002	0.007 ± 0.002
24-Nov-08	0.018 ± 0.003	0.015 ± 0.002	0.013 ± 0.002	0.010 ± 0.002	0.009 ± 0.002
04-Dec-08	0.019 ± 0.002	0.019 ± 0.002	0.018 ± 0.002	0.011 ± 0.001	0.009 ± 0.002
09-Dec-08	0.015 ± 0.003	0.012 ± 0.002	0.013 ± 0.002	0.012 ± 0.002	0.016 ± 0.002
17-Dec-08	0.055 ± 0.016(A)	0.011 ± 0.002	0.013 ± 0.002	0.008 ± 0.002	0.009 ± 0.002
23-Dec-08	0.018 ± 0.003	0.016 ± 0.002	0.011 ± 0.002	0.017 ± 0.003	0.006 ± 0.002
30-Dec-08	0.010 ± 0.002	0.011 ± 0.002	0.008 ± 0.002	0.006 ± 0.002	0.010 ± 0.002
Average:	0.018 ± 0.001	0.014 ± 0.001	0.012 ± 0.001	0.010 ± 0.001	0.010 ± 0.001

(A) Estimated run time 17.2 out of 191 hours. System appeared to be running normally at time of collection.

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

<u>Sample Site</u>	<u>Be-7</u>	<u>K-40</u>	<u>Cs-134</u>	<u>Cs-137</u>	<u>Pb-210</u>
H08	0.1626 ± 0.0236	<0.0173	<0.0019	<0.0015	0.0134 ± 0.0021
H12	0.1985 ± 0.0164	<0.0290	<0.0020	<0.0020	<0.0644
H14	0.1441 ± 0.0145	<0.0294	<0.0023	<0.0019	<0.0559
H30	0.1254 ± 0.0165	<0.0246	<0.0016	<0.0016	<0.0636
H34	0.1293 ± 0.0122	<0.0303	<0.0016	<0.0017	<0.0576

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	I-131	Cs-134	Cs-137	Ba-140
									Nb-95 (A)				La-140 (B)
H15	01-Oct-08	<155	266 ± 53	<4	<5	<13	<6	<13	<9	<6	<5	<7	<12
	08-Oct-08	<155	308 ± 35	<2	<2	<5	<3	<5	<4	<3	<3	<2	<5
	15-Oct-08	<139	321 ± 33	<2	<2	<6	<3	<5	<4	<3	<3	<2	<3
	23-Oct-08	<139	427 ± 35	<4	<3	<9	<4	<8	<7	<6	<5	<4	<6
	29-Oct-08	<139	441 ± 36	<4	<3	<8	<4	<7	<5	<4	<5	<4	<12
	04-Nov-08	<147	412 ± 30	<4	<4	<7	<5	<9	<5	<4	<4	<4	<8
	12-Nov-08	<147	305 ± 32	<2	<2	<5	<3	<5	<5	<3	<3	<2	<4
	18-Nov-08	<147	362 ± 34	<3	<3	<7	<4	<9	<5	<4	<5	<4	<12
	24-Nov-08	<147	382 ± 11	<1	<1	<2	<1	<2	<2	<1	<1	<1	<2
	04-Dec-08	<147	389 ± 33	<4	<4	<8	<4	<6	<7	<6	<4	<4	<4
	10-Dec-08	<146	357 ± 50	<5	<5	<9	<6	<9	<9	<5	<5	<5	<13
	17-Dec-08	<146	293 ± 17	<3	<3	<6	<3	<7	<5	<3	<3	<3	<7
	23-Dec-08	<146	339 ± 29	<2	<1	<3	<2	<4	<3	<2	<2	<2	<5
30-Dec-08	<146	386 ± 22	<2	<2	<5	<3	<6	<4	<3	<3	<2	<9	
H59	01-Oct-08	<155	392 ± 16	<1	<1	<3	<2	<4	<3	<2	<2	<2	<4
	04-Nov-08	<147	364 ± 31	<4	<4	<7	<4	<9	<6	<5	<4	<4	<7
	09-Dec-08	<146	420 ± 31	<3	<3	<6	<4	<8	<5	<4	<4	<4	<7

(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	<u>Be-7</u>	<u>K-40</u>	<u>Co-58</u>	<u>Co-60</u>	<u>Cs-134</u>	<u>Cs-137</u>	<u>Pb-210</u>	<u>Ra-226</u>	<u>Th-232</u>	<u>U-238</u>
H15	This sample was previously collected.										
H59	This sample was previously collected.										

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

Sample Site	Collection Date	<u>K-40</u>	<u>Mn-54</u>	<u>Co-58</u>	<u>Fe-59</u>	<u>Co-60</u>	<u>Zn-65</u>	<u>Cs-134</u>	<u>Cs-137</u>	<u>Ra-226</u>	<u>Ra-228</u>
H15	19-Oct-08	1296 ± 345	<40	<48	<119	<51	<105	<53	<34	<850	<142
H59	This sample was previously collected.										

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

Sample Site	Collection Date	<u>K-40</u>	<u>Mn-54</u>	<u>Co-58</u>	<u>Fe-59</u>	<u>Co-60</u>	<u>Zn-65</u>	<u>Cs-134</u>	<u>Cs-137</u>	<u>Ra-226</u>	<u>Ra-228</u>
H15	This sample was previously collected.										
H59	This sample was previously collected.										

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

<u>Sample Site</u>	<u>Collection Date</u>	<u>Be-7</u>	<u>K-40</u>	<u>I-131</u>	<u>Cs-134</u>	<u>Cs-137</u>	<u>Pb-210</u>	<u>Pb-212</u>	<u>Ra-226</u>	<u>Ra-228</u>
H51	01-Oct-08	1169 ± 82	3661 ± 201	<12	<13	<15	<1951	<64	<281	<64
	12-Nov-08	2230 ± 115	2563 ± 208	<16	<21	<19	<2542	<77	<372	<55
	10-Dec-08	884 ± 79	3045 ± 187	<12	<15	<15	<1979	<61	<306	<54
H52	01-Oct-08	1340 ± 77	4572 ± 167	<12	<10	<10	<712	<90	<244	<45
	12-Nov-08	2249 ± 48	2898 ± 103	<6	<7	<7	<953	24 ± 5	<145	<28
	10-Dec-08	667 ± 77	3561 ± 149	<13	<12	<12	<724	<82	<235	<39
H59	01-Oct-08	1591 ± 90	2651 ± 185	<14	<16	<16	<2178	<73	<343	<53
	12-Nov-08	1891 ± 85	2701 ± 138	<11	<11	<10	<763	<81	<248	<40
	09-Dec-08	1219 ± 81	2796 ± 181	<15	<16	<17	<2089	<67	<307	<60

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ATTACHMENT C

RESULTS FROM THE 2008
INTERLABORATORY COMPARISON PROGRAM
CONDUCTED BY
DEPARTMENT OF ENERGY

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Radionuclide	Result	DOE-MAPEP 18 RESULTS		Acceptance Range
		Ref. Value	Flag (Evaluation)	
Matrix: RdF Air Filter Bq/filter				
MN54	0.004		A	Sensitivity Eval.
CO57	3.58	3.55	A	2.49 – 4.62
CO60	1.28	1.31	A	0.92 – 1.70
ZN65	2.32	2.04	A	1.43 – 2.65
CS134	2.34	2.52	A	1.76 – 3.28
CS137	2.59	2.70	A	1.89 – 3.51
AM241	0.16	0.158	A	0.111 – 0.205
U238	0.20	0.225	A	0.158 – 0.293
Matrix: GrF Air Filter Bq/filter				
Gross Beta	0.33	0.286	A	0.143 – 0.429
Matrix: MaS Soil Bq/kg				
K40	632.57	571	A	400 - 742
MN54	617.70	570	A	399 - 741
CO57	461.2	421	A	295 - 547
CO60	8.41	2.9	N	Sensitivity Eval.
ZN65	- 6.71		A	Blank (no activity)
CS134	881.67	854	A	598 - 1110
CS137	580	545	A	382 - 709
Am241	140.67	127.2	A	89.0 – 165.4
U238	158.37	148	A	104 - 192
Matrix: MaW Water Bq/L				
H3	506.83	472	A	330 - 614
MN54	12.78	12.1	A	8.5 – 15.7
CO57	22.23	22.8	A	16.0 – 29.6
CO60	8.48	8.40	A	5.88 – 10.92
NI63	26.05	30.7	A	21.5 – 39.9
ZN65	17.69	16.3	A	11.4 – 21.2
SR90	12.5	11.40	A	7.98 – 14.82
CS134	-0.01		A	Blank (no activity)
CS137	-0.08		A	Blank (no activity)
Am241	1.2	1.23	A	0.86 – 1.60
Matrix: RdV Vegetation, Bq/sample :				
MN54	4.22	4.74	A	3.32 – 6.16
CO57	6.34	6.89	A	4.82 – 8.96
CO60	2.36	2.77	A	1.94 – 3.60
ZN65	-0.10		A	Blank (no activity)
CS134	5.51	6.28	A	4.40 – 8.16
CS137	2.99	3.41	A	2.39 – 4.43
AM241	0.29	0.240	W	0.198 – 0.312

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

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Radionuclide	Result	DOE-MAPEP 19 RESULTS		
		Ref. Value	Flag (Evaluation)	Acceptance Range
Matrix: RdF Air Filter Bq/filter				
MN54	2.91	2.64	A	1.85 – 3.43
CO57	1.64	1.50	A	1.05 – 1.95
CO60	0.02	n/a	A	Cross Lab LLD Comp
ZN65	1.08	0.94	A	0.66 – 1.22
CS134	2.72	2.63	A	1.84 – 3.42
CS137	- 0.002	n/a	A	Blank (no activity)
AM241	0.004	n/a	A	Blank (no activity)
U238	0.32	0.272	A	0.190 – 0.354
Matrix: GrF Air Filter Bq/filter				
Gross Beta	0.551	0.525	A	0.263 – 0.788
Matrix: MaS Soil Bq/kg				
K40	639.56	570	A	399 - 741
MN54	440.04	415	A	291 - 540
CO57	348.64	333	A	233 - 433
CO60	152.46	145	A	102 - 189
ZN65	- 7.84	n/a	A	Blank (no activity)
CS134	589.18	581	A	407 - 755
CS137	3.21	2.8	A	Range not specified
Am241	69.49	69.1	A	48.4 – 89.8
U238	296.14	303	A	212 - 394
SB125	26.78	22.8	A	16.0 – 29.6
Matrix: MaW Water Bq/L				
H3	358.97	341	A	239 - 443
MN54	14.18	13.7	A	9.6 – 17.8
CO57	0.01	n/a	A	Blank (no activity)
CO60	11.81	11.6	A	8.1 – 15.1
ZN65	18.37	17.1	A	12.0 – 22.2
SR90	7.2	6.45	A	4.52 – 8.39
CS134	19.37	19.5	A	13.7 – 25.4
CS137	24.06	23.6	A	16.5 – 30.7
Am241	0.06	n/a	A	Blank (no activity)
U238	3.32	3.55	A	2.49 – 4.62
Matrix: RdV Vegetation, Bq/sample :				
MN54	5.45	5.8	A	4.1 – 7.5
CO57	6.98	7.1	A	5.0 – 9.2
CO60	4.35	4.7	A	3.3 – 6.1
ZN65	6.54	6.9	A	4.8 – 9.0
CS134	5.11	5.5	A	3.9 – 7.2
CS137	0.003	n/a	A	Blank (no activity)
AM241	0.31	0.286	A	0.022 – 0.372

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

2008

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A. Description of 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 six wells are basically at the four corners of the protected area 'outside' of the intake and discharge canals. 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

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.

B. Results

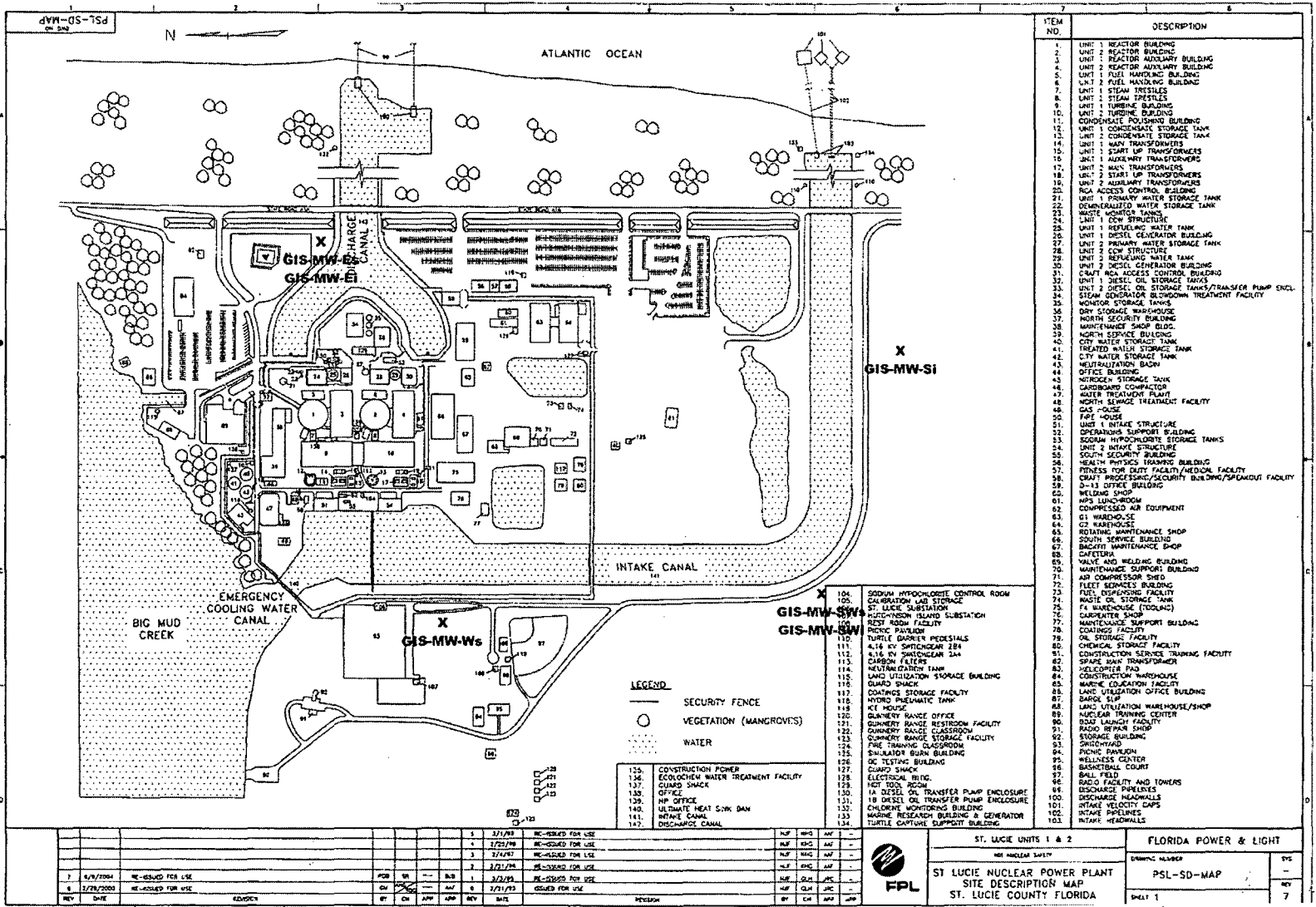
St. Lucie 2008 Tritium Results ⁽¹⁾ Summary, pCi/L

Well number	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
H-70	<MDA ⁽²⁾	<MDA	<MDA	<MDA
H-71	211	303	346	346
H-72	<MDA	<MDA	<MDA	<MDA
H-73	<MDA	<MDA	<MDA	<MDA
H-74	<MDA	<MDA	<MDA	<MDA
H-75	<MDA	<MDA	<MDA	<MDA

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. Typical H3 MDA is 140 pCi/liter.

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Map depicting the well locations.



PSL-SD-MAP

REV	DATE	REASON FOR USE	BY	CHK	APP	DATE	REASON
1	3/17/94	ISSUED FOR USE	HPF	SHG	HPF		
2	1/20/94	RE-ISSUED FOR USE	HPF	SHG	HPF		
3	7/27/97	RE-ISSUED FOR USE	HPF	SHG	HPF		
4	3/21/98	RE-ISSUED FOR USE	HPF	SHG	HPF		
5	3/27/99	RE-ISSUED FOR USE	HPF	SHG	HPF		
6	7/21/93	ISSUED FOR USE	HPF	SHG	HPF		

ST. LUCIE UNITS 1 & 2
NRC NUCLEAR SAFETY

FLORIDA POWER & LIGHT

ST. LUCIE NUCLEAR POWER PLANT
SITE DESCRIPTION MAP
ST. LUCIE COUNTY FLORIDA

PSL-SD-MAP
SHEET 1