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

April 13, 2004

L-2004-081
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 2003

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 2003.

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

2003

# 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 Bo

Reviewed by: J L Dan

**2003**
**ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT**
**ST. LUCIE PLANT – UNITS 1 & 2**

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# 2003
# 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 of members of the public resulting from station operation. The Radiological Environmental Monitoring Program also supplements the radiological effluent monitoring program by verifying that the measurable concentrations of radioactive materials and levels of radiation are not higher than expected on the basis of the effluent measurements and the modeling of the environmental exposure pathways.

### B. Program Description

The Radiological Environmental Monitoring Program (REMP) for the 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 5-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 Interlaboratory Comparison Program consists of participating in the Department of Energy's EML New York Quality Assessment Program (DOE-QAP). The DOE-QAP consists of two rounds of air filter, water, soil, and vegetation matrices. The samples are analyzed using the methods applicable to the REMP (gamma spectroscopy, gross beta, and tritium for water). The results of nuclides associated with the REMP are listed in Attachment C, Results From the Interlaboratory Comparison Program.
Please note that although our laboratory participated in the analysis for alpha in air and water, the results of this analysis are not used to support St. Lucie's Radiological Environmental Monitoring Program.

## III. DISCUSSION AND INTERPRETATION OF RESULTS

### A. Reporting of Results

The Annual Radiological Environmental Operating Report contains the summaries, interpretations and information required by St. Lucie Plant ODCM. Table 1 provides a summary of the measurements made for the nuclides required by ODCM, Table 4.12-1, for all samples specified by Table 3.12-1. In addition, summaries are provided for other nuclides identified in the specified samples, including those not related to station operation. These include nuclides such as K-40, Th-232, Ra-226, and Be-7, which are common in the Florida environment.

### B. Interpretation of Results

1. Direct Radiation:

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

2. Air Particulates/Radioiodine:

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 6 of 52 Indicator Location samples and in 1 of 12 Control Location samples. The highest level seen was less than 25% 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 5 of 24 Indicator Location samples and in 1 of 12 Control Location samples. The highest level is less than 4% of the Reporting Level specified in ODCM Table 3.12-2. 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 59 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% 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-58 and QAP-59; the two sets of samples issued by DOE for 2003.

In QAP-58, all results for those nuclides associated with nuclear power plant operation and using analytical methods used in the REMP are acceptable.
In QAP-59, the results for Air Filter matrix for those nuclides associated with nuclear power plant operation and using analytical methods used in the REMP are acceptable. The cause of the warning for Cs-134 in water is unknown. The sample was reanalyzed; similar results were found. The State reviewed the results of the over 40 laboratories participating in this program found that they too typically under-responded by about the same 10%. The warnings for soil are the result of a lab technician failing to follow procedures; the technician has been counseled on adherence to procedures.

The 'naturally occurring nuclide' results reported are inferred results from gamma spectroscopy. Chemical separation and alpha analysis is the preferred analytical method, but is outside the scope of the routine REMP.

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, 2003
(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, 108[d] | — | 5.0 (104/104)<br>4.0 - 6.4 | NW-10<br>10 mi., NW | 6.2 (4/4)<br>6.0 - 6.4 | 5.4 (4/4)<br>5.2 – 5.6 |

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, 2003
(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 |
|---|---|---|---|---|---|
| $^{131}I$, 255 | 0.024 | <MDA | — | — | <MDA |
| Gross Beta, 255 | 0.0025 | 0.012 (204/204)<br>0.004 - 0.028 | H-34<br>0.5 mi., N | 0.013 (51/51)<br>0.005 - 0.028 | 0.012 (51/51)<br>0.003 - 0.023 |
| Composite Gamma Isotopic, 20 | | | | | |
| $^{7}Be$ | 0.0052 | 0.1147 (16/16)<br>0.0765 - 0.1506 | H-14<br>1 mi., SE | 0.1192 (4/4)<br>0.0809 - 0.1454 | 0.1092 (4/4)<br>0.0766 - 0.1315 |
| $^{134}Cs$ | 0.00069 | <MDA | — | — | <MDA |
| $^{137}Cs$ | 0.00066 | <MDA | — | — | <MDA |
| $^{210}Pb$ | — | 0.0218 (8/16)<br>0.0068 - 0.0463 | H-34<br>0.5 mi., N | 0.0324 (2/4)<br>0.0184 - 0.0463 | 0.0135 (2/4)<br>0.0068 - 0.0202 |

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, 2003
(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 | 234 (6/52)<br>79 - 686 | H-15<br><1 mi., ENE/E/ESE | 234 (6/52)<br>79 - 686 | 61 (1/12) |
| Gamma Isotopic, 64 | | | | | |
| $^{40}K$ | 60 | 343 (52/52)<br>149 - 421 | H-15<br><1 mi., ENE/E/ESE | 343 (52/52)<br>149 - 421 | 336 (12/12)<br>137 - 451 |
| $^{54}Mn$ | 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

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, 2003
(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 | 408 (2/2)<br>308 - 507 | H-15<br><1 mi, ENE/E/ESE | 408 (2/2)<br>308 - 507 | 148 (2/2)<br>124 - 173 |
| $^{210}Pb$ | — | < MDA | — | — | 330 (1/2) |
| $^{226}Ra$ | 49 | 332 (2/2)<br>325 - 338 | H-15<br><1 mi., ENE/E/ESE | 332 (2/2)<br>325 - 338 | 208 (2/2)<br>159 - 257 |
| $^{232}Th$ | — | 150 (1/2) | H-15<br><1 mi., ENE/E/ESE | 150 (1/2) | 59 (2/2)<br>48 - 70 |
| $^{238}U$ | — | 361 (1/2) | H-15<br><1 mi., ENE/E/ESE | 361 (1/2) | 367 (2/2)<br>353 - 381 |
| $^{58}Co$ | 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, 2003
(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: Name[c] Distance & Direction | Location with Highest Annual Mean: Mean (f)[b] Range | Control Locations Mean (f)[b] Range |
|---|---|---|---|---|---|
| Gamma Isotopic, 4 | | | | | |
| $^{40}K$ | 130 | 1564 (2/2)<br>1469 - 1658 | H-15<br><1 mi., ENE/E/ESE | 1564 (2/2)<br>1469 - 1658 | 1356 (2/2)<br>1337 - 1374 |
| $^{226}Ra$ | — | < MDA | — | — | 537 (1/2) |
| $^{228}Ra$ | — | <MDA | — | — | <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, 2003
(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 Name[c] Distance & Direction | Location with Highest Annual Mean Mean (f)[b] Range | Control Locations Mean (f)[b] Range |
|---|---|---|---|---|---|
| Gamma Isotopic, 4 | | | | | |
| $^{40}K$ | 130 | 2228 (2/2)<br>1824 - 3631 | H-15<br><1 mi., ENE/E/ESE | 2228 (2/2)<br>1824 - 3631 | 3368 (2/2)<br>3281 - 3454 |
| $^{54}Mn$ | 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, 2003
(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, 36 | | | | | |
| $^{7}Be$ | 71 | 948 (24/24)<br>527 - 1679 | H-51<br>1 mi., N/NNW | 997 (12/12)<br>575 - 1679 | 1083 (12/12)<br>628 - 2033 |
| $^{40}K$ | 100 | 4280 (24/24)<br>2864 - 6354 | H-52<br>1 mi. , S/SSE | 4317 (12/12)<br>2864 - 6354 | 3968 (12/12)<br>2304 - 6048 |
| $^{131}I$ | 9 | <MDA | — | — | <MDA |
| $^{134}Cs$ | 8 | <MDA | — | — | <MDA |
| $^{137}Cs$ | 8 | 38 (5/24)<br>17 - 74 | H-51<br>1 mi., N/NNW | 48 (2/12)<br>21 - 74 | 50 (1/12) |
| $^{210}Pb$ | — | 528 (1/24) | H-52<br>1 mi. , S/SSE | 528 (1/12) | <MDA |
| $^{212}Pb$ | — | < MDA | — | — | < MDA |
| $^{226}Ra$ | — | < 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, 2003
(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 Name[c] Distance & Direction | Location with Highest Annual Mean Mean (f)[b] Range | Control Locations Mean (f)[b] Range |
|---|---|---|---|---|---|
| Gamma Isotopic, 3 | | | | | |
| $^{40}K$ | 60 | 1712 (3/3)<br>1650 - 1779 | H-101<br>3.5 mi., WSW | 1712 (3/3)<br>1650 - 1779 | 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 | 39 (3/3)<br>22 - 59 | H-101<br>3.5 mi., WSWE | 39 (3/3)<br>22 - 59 | n/a |

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, 2003
(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.

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## TABLE 1A

## DEVIATIONS / MISSING DATA

| | | |
|---|---|---|
| A) | 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 did not generate enough milk for a sample. |
| | Corrective Action: | None |

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## TABLE 1B

ANALYSIS WITH LLDs ABOVE THE REQUIRED DETECTION CAPABILITIES
(LLDs) Listed in ODCM TABLE 4.12-1
1/1/2003 – 12/31/2003

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 | 7/03 Milk (c) Animal | 7/03 Residence | 7/03 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.

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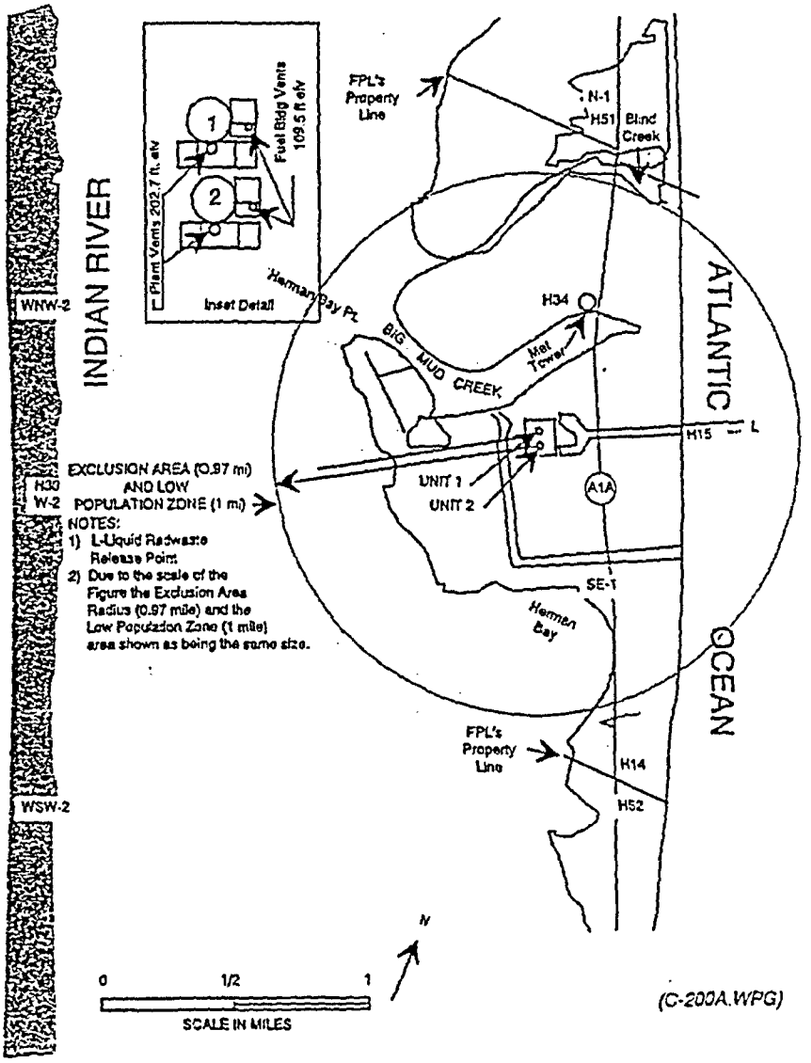
## ATTACHMENT A

KEY TO SAMPLE LOCATIONS

# 2003
# ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT
# ST. LUCIE PLANT - UNITS 1 & 2

## SITE AREA MAP & ENVIRONMENTAL SAMPLE LOCATIONS



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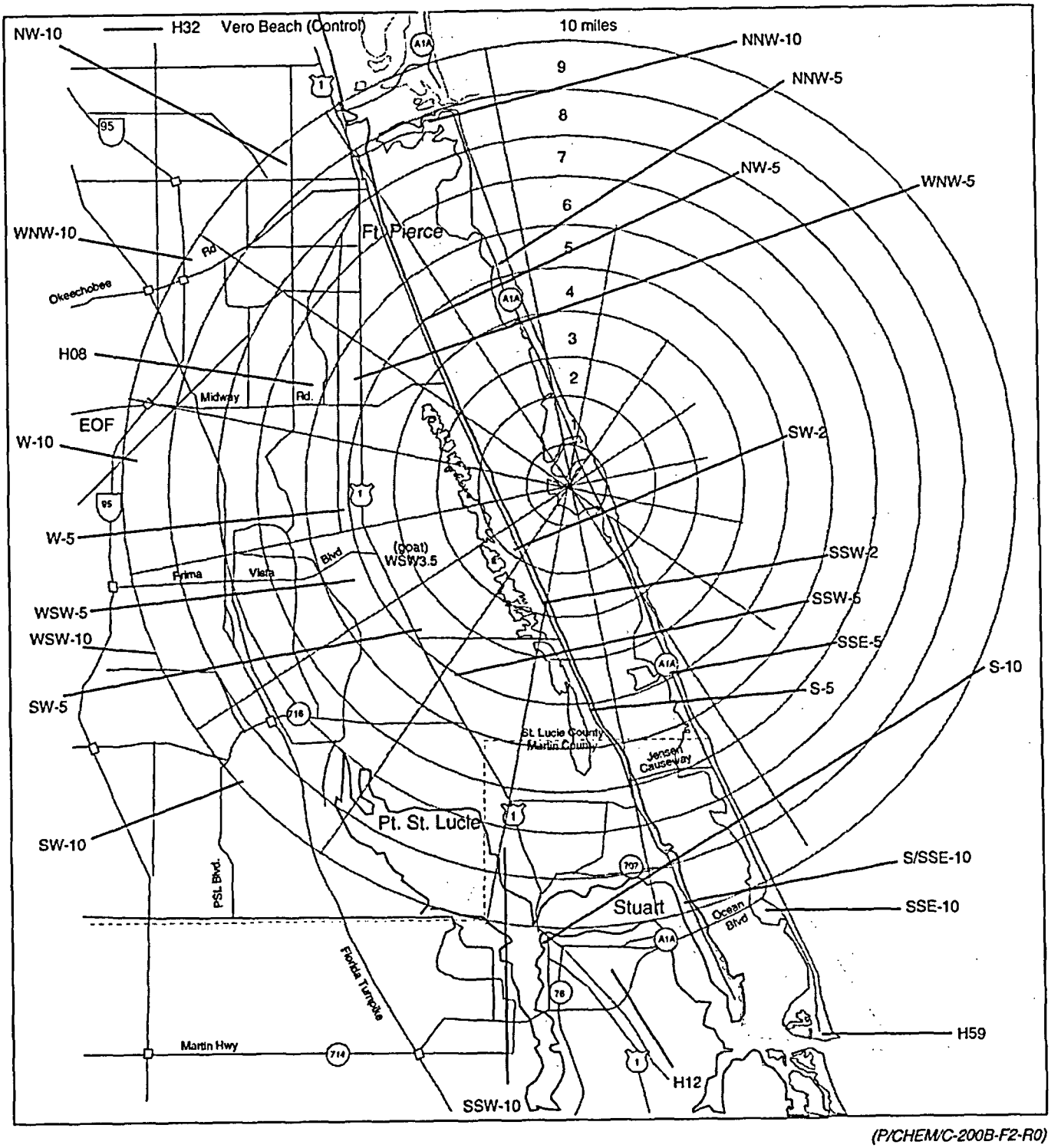
# ST. LUCIE PLANT - UNITS 1 & 2

## ENVIRONMENTAL SAMPLE LOCATIONS (10 MILES)




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

2003
ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT
ST. LUCIE PLANT - UNITS 1 & 2

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) | | | |

# 2003
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ATTACHMENT B

RADIOLOGICAL SURVEILLANCE OF

FLORIDA POWER AND LIGHT COMPANY

ST. LUCIE SITE

2003

First Quarter 2003

Second Quarter 2003

Third Quarter 2003

Fourth Quarter 2003

# ST. LUCIE SITE

## Technical Specifications Sampling

## First Quarter, 2003

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

1. DIRECT RADIATION - TLDs - (μR/hour)

| Sample Site | Deployment 03-Dec-02 Collection 04-Mar-03 | Sample Site | Deployment 03-Dec-02 Collection 04-Mar-03 |
|---|---|---|---|
| N-1 | 5.1 ± 0.2 | SW-2 | 4.9 ± 0.2 |
| NNW-5 | 4.8 ± 0.2 | SW-5 | 5.8 ± 0.2 |
| NNW-10 | 5.2 ± 0.2 | SW-10 | 5.3 ± 0.2 |
| NW-5 | 5.6 ± 0.2 | SSW-2 | 5.0 ± 0.2 |
| NW-10 | 6.4 ± 0.2 | SSW-5 | 5.8 ± 0.2 |
| | | SSW-10 | 5.6 ± 0.2 |
| WNW-2 | 4.7 ± 0.2 | | |
| WNW-5 | 5.0 ± 0.2 | S-5 | 5.0 ± 0.2 |
| WNW-10 | 6.0 ± 0.2 | S-10 | 5.3 ± 0.2 |
| | | S/SSE-10 | 5.1 ± 0.2 |
| W-2 | 4.9 ± 0.2 | | |
| W-5 | 5.6 ± 0.2 | SSE-5 | 4.7 ± 0.2 |
| W-10 | 5.7 ± 0.2 | SSE-10 | 5.4 ± 0.2 |
| WSW-2 | 5.1 ± 0.2 | SE-1 | 4.9 ± 0.2 |
| WSW-5 | 4.6 ± 0.2 | | |
| WSW-10 | 4.5 ± 0.2 | H-32 | 5.6 ± 0.2 |

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

| Collection Date | H08 | H12 | H14 | H30 | H34 |
|---|---|---|---|---|---|
| 07-Jan-03 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| 13-Jan-03 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| 22-Jan-03 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| 28-Jan-03 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| 06-Feb-03 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| 11-Feb-03 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| 17-Feb-03 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| 26-Feb-03 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| 04-Mar-03 | <0.02 | <0.02 | <0.01 | <0.01 | <0.01 |
| 13-Mar-03 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| 20-Mar-03 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| 25-Mar-03 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| 31-Mar-03 | <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 |
| 07-Jan-03 | 0.019 ± 0.002 | 0.015 ± 0.002 | 0.016 ± 0.002 | 0.018 ± 0.002 | 0.023 ± 0.002 |
| 13-Jan-03 | 0.018 ± 0.003 | 0.015 ± 0.002 | 0.016 ± 0.003 | 0.019 ± 0.003 | 0.020 ± 0.003 |
| 22-Jan-03 | 0.019 ± 0.002 | 0.015 ± 0.002 | 0.022 ± 0.002 | 0.024 ± 0.002 | 0.028 ± 0.002 |
| 28-Jan-03 | 0.018 ± 0.003 | 0.014 ± 0.002 | 0.012 ± 0.002 | 0.015 ± 0.003 | 0.021 ± 0.003 |
| 06-Feb-03 | 0.013 ± 0.002 | 0.011 ± 0.002 | 0.014 ± 0.002 | 0.013 ± 0.002 | 0.013 ± 0.002 |
| 11-Feb-03 | 0.011 ± 0.003 | 0.008 ± 0.002 | 0.012 ± 0.002 | 0.011 ± 0.003 | 0.014 ± 0.003 |
| 17-Feb-03 | 0.016 ± 0.002 | 0.017 ± 0.002 | 0.013 ± 0.002 | 0.017 ± 0.002 | 0.016 ± 0.002 |
| 26-Feb-03 | 0.010 ± 0.001 | 0.011 ± 0.002 | 0.010 ± 0.001 | 0.008 ± 0.001 | 0.011 ± 0.002 |
| 04-Mar-03 | 0.005 ± 0.002 | 0.006 ± 0.002 | 0.007 ± 0.002 | 0.008 ± 0.002 | 0.009 ± 0.002 |
| 13-Mar-03 | 0.011 ± 0.002 | 0.010 ± 0.002 | 0.007 ± 0.001 | 0.010 ± 0.002 | 0.012 ± 0.002 |
| 20-Mar-03 | 0.011 ± 0.002 | 0.008 ± 0.002 | 0.009 ± 0.002 | 0.011 ± 0.002 | 0.010 ± 0.002 |
| 25-Mar-03 | 0.019 ± 0.003 | 0.017 ± 0.003 | 0.018 ± 0.003 | 0.016 ± 0.003 | 0.016 ± 0.003 |
| 31-Mar-03 | 0.016 ± 0.003 | 0.015 ± 0.002 | 0.012 ± 0.002 | 0.015 ± 0.002 | 0.017 ± 0.003 |
| Mean: | 0.014 ± 0.001 | 0.012 ± 0.001 | 0.013 ± 0.001 | 0.014 ± 0.001 | 0.016 ± 0.001 |

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

First Quarter, 2003

| Sample Site | Be-7 | K-40 | Cs-134 | Cs-137 | Pb-210 |
|---|---|---|---|---|---|
| H08 | 0.1211 ± 0.0151 | <0.0284 | <0.0016 | <0.0016 | <0.0628 |
| H12 | 0.1081 ± 0.0145 | <0.0274 | <0.0015 | <0.0015 | <0.0555 |
| H14 | 0.1454 ± 0.0108 | <0.0169 | <0.0005 | <0.0010 | 0.0242 ± 0.0040 |
| H30 | 0.1409 ± 0.0140 | <0.0306 | <0.0016 | <0.0014 | <0.0634 |
| H34 | 0.1062 ± 0.0144 | <0.0268 | <0.0014 | <0.0016 | <0.0660 |

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 | 07-Jan-03 | <129 | 149 ± 38 | <6 | <6 | <12 | <7 | <12 | <11 | <9 | <7 | <7 | <8 |
| | 13-Jan-03 | <129 | 362 ± 36 | <3 | <3 | <8 | <5 | <9 | <7 | <4 | <3 | <3 | <9 |
| | 22-Jan-03 | <125 | 403 ± 36 | <3 | <4 | <6 | <4 | <8 | <5 | <5 | <4 | <4 | <6 |
| | 28-Jan-03 | <125 | 333 ± 50 | <6 | <6 | <11 | <7 | <12 | <9 | <7 | <6 | <6 | <9 |
| | 05-Feb-03 | <129 | 350 ± 56 | <6 | <7 | <15 | <7 | <12 | <11 | <9 | <7 | <5 | <4 |
| | 11-Feb-03 | <129 | 243 ± 33 | <3 | <3 | <9 | <4 | <8 | <6 | <4 | <3 | <4 | <10 |
| | 17-Feb-03 | <129 | 403 ± 34 | <4 | <4 | <6 | <4 | <8 | <7 | <7 | <4 | <4 | <6 |
| | 26-Feb-03 | 115 ± 41 | 363 ± 14 | <1 | <1 | <2 | <1 | <2 | <2 | <1 | <1 | <1 | <2 |
| | 05-Mar-03 | <127 | 411 ± 16 | <1 | <2 | <3 | <2 | <4 | <2 | <2 | <2 | <2 | <4 |
| | 13-Mar-03 | 686 ± 31 | 360 ± 36 | <4 | <3 | <9 | <4 | <8 | <6 | <6 | <4 | <4 | <5 |
| | 20-Mar-03 | <127 | 353 ± 34 | <4 | <4 | <6 | <5 | <7 | <6 | <4 | <4 | <4 | <9 |
| | 25-Mar-03 | <127 | 281 ± 30 | <4 | <3 | <7 | <4 | <8 | <6 | <4 | <4 | <3 | <8 |
| | 31-Mar-03 | <127 | 326 ± 20 | <2 | <2 | <4 | <2 | <4 | <3 | <3 | <2 | <2 | <3 |
| H59 | 08-Jan-03 | <129 | 137 ± 28 | <4 | <3 | <8 | <5 | <6 | <6 | <5 | <4 | <4 | <9 |
| | 06-Feb-03 | <129 | 357 ± 43 | <6 | <6 | <11 | <6 | <12 | <12 | <8 | <7 | <6 | <11 |
| | 05-Mar-03 | <127 | 451 ± 52 | <6 | <4 | <13 | <7 | <13 | <10 | <7 | <6 | <6 | <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 | 22-Jan-03 | <100 | 507 ± 56 | <10 | <11 | <12 | <10 | <540 | 325 ± 14 | <57 | 361 ± 142 |
| H59 | 23-Jan-03 | <70 | 173 ± 43 | <7 | <7 | <10 | <8 | <2049 | 159 ± 9 | 48 ± 12 | 353 ± 118 |

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 | This sample has not yet been collected. | | | | | | | | | | |

4.a.2. FISH - (Barracuda, 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 | 23-Jan-03 | 3631 ± 119 | <14 | <25 | <83 | <14 | <32 | <13 | <12 | <225 | <53 |
| H59 | 08-Jan-03 | 3281 ± 136 | <15 | <13 | <32 | <17 | <32 | <15 | <16 | <283 | <65 |

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-03 | 831 ± 77 | 3565 ± 191 | <16 | <16 | 21 ± 7 | <2669 | <350 |
| | 05-Feb-03 | 1022 ± 72 | 2979 ± 140 | <15 | <13 | <11 | <650 | <246 |
| | 05-Mar-03 | 867 ± 108 | 3680 ± 207 | <17 | <20 | 74 ± 7 | <2544 | <378 |
| H52 | 08-Jan-03 | 732 ± 83 | 3558 ± 188 | <16 | <18 | 52 ± 8 | <2348 | <323 |
| | 05-Feb-03 | 1180 ± 76 | 2864 ± 181 | <21 | <17 | <17 | <2271 | <339 |
| | 05-Mar-03 | 667 ± 65 | 4006 ± 163 | <12 | <13 | 24 ± 5 | <771 | <268 |
| H59 | 08-Jan-03 | 1094 ± 92 | 2304 ± 154 | <17 | <19 | <21 | <2536 | <350 |
| | 06-Feb-03 | 1123 ± 43 | 3761 ± 95 | <9 | <8 | <7 | <1208 | <167 |
| | 05-Mar-03 | 792 ± 97 | 2748 ± 182 | <15 | <18 | 50 ± 12 | <2531 | <369 |

4.c. MILK - (pCi/L)

| Sample Site | Collection Date | K-40 | I-131 | Cs-134 | Cs-137 | Ba-140 La-140 (A) |
|---|---|---|---|---|---|---|
| H101 | 12-Mar-03 | 1708 ± 77 | <0.2 | <6 | 22 ± 3 | <9 |

(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

Technical Specifications Sampling

Second Quarter, 2003

| Sample Type | Collection Frequency | Locations Sampled | Number of Samples |
|---|---|---|---|
| 1. Direct Radiation | Quarterly | 27 | 27 |
| 2. Airborne | | | |
| 2.a. Air Iodines | Weekly | 5 | 60 |
| 2.b. Air Particulates | Weekly | 5 | 60 |
| 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 | 0 | 2 |
| 4.a.2. Fish | Semiannually | 0 | 0 |
| 4.b. Broadleaf Vegetation | Monthly | 3 | 9 |
| 4.c. Milk | Quarterly | 1 | 1 |
| | | | Total: 175 |

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.

1. DIRECT RADIATION - TLDs - (μR/hour)

| Sample Site | Deployment Collection 04-Mar-03 03-Jun-03 | Sample Site | Deployment Collection 04-Mar-03 03-Jun-03 |
|---|---|---|---|
| N-1 | 4.8 ± 0.2 | SW-2 | 4.6 ± 0.2 |
| NNW-5 | 4.9 ± 0.2 | SW-5 | 5.6 ± 0.2 |
| NNW-10 | 4.9 ± 0.2 | SW-10 | 5.2 ± 0.2 |
| NW-5 | 5.1 ± 0.2 | SSW-2 | 4.7 ± 0.2 |
| NW-10 | 6.4 ± 0.2 | SSW-5 | 5.4 ± 0.2 |
| WNW-2 | 5.0 ± 0.2 | SSW-10 | 5.3 ± 0.2 |
| WNW-5 | 4.9 ± 0.2 | S-5 | 5.1 ± 0.2 |
| WNW-10 | 5.9 ± 0.2 | S-10 | 5.0 ± 0.2 |
| W-2 | 5.0 ± 0.2 | S/SSE-10 | 4.9 ± 0.2 |
| W-5 | 5.4 ± 0.2 | SSE-5 | 4.5 ± 0.2 |
| W-10 | 5.2 ± 0.2 | SSE-10 | 5.3 ± 0.2 |
| WSW-2 | 4.6 ± 0.2 | SE-1 | 4.4 ± 0.2 |
| WSW-5 | 4.8 ± 0.2 | H-32 | 5.2 ± 0.2 |
| WSW-10 | 4.7 ± 0.2 | | |

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

| Collection Date | H08 | H12 | H14 | H30 | H34 |
|---|---|---|---|---|---|
| 09-Apr-03 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| 14-Apr-03 | <0.03 | <0.03 | <0.03 | <0.03 | <0.03 |
| 23-Apr-03 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| 01-May-03 | <0.02 | <0.02 | <0.01 | <0.01 | <0.01 |
| 07-May-03 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| 12-May-03 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| 21-May-03 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| 28-May-03 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| 04-Jun-03 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| 11-Jun-03 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| 18-Jun-03 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| 24-Jun-03 | <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 |
|---|---|---|---|---|---|
| 09-Apr-03 | 0.008 ± 0.001 | 0.014 ± 0.002 | 0.015 ± 0.002 | 0.014 ± 0.002 | 0.010 ± 0.002 |
| 14-Apr-03 | 0.011 ± 0.003 | 0.016 ± 0.003 | 0.015 ± 0.003 | 0.014 ± 0.003 | 0.009 ± 0.002 |
| 23-Apr-03 | 0.016 ± 0.002 | 0.014 ± 0.002 | 0.012 ± 0.002 | 0.013 ± 0.002 | 0.013 ± 0.002 |
| 01-May-03 | 0.013 ± 0.002 | 0.011 ± 0.002 | 0.012 ± 0.002 | 0.012 ± 0.002 | 0.012 ± 0.002 |
| 07-May-03 | 0.010 ± 0.002 | 0.012 ± 0.002 | 0.011 ± 0.002 | 0.012 ± 0.002 | 0.017 ± 0.002 |
| 12-May-03 | 0.011 ± 0.003 | 0.013 ± 0.003 | 0.009 ± 0.002 | 0.009 ± 0.002 | 0.016 ± 0.003 |
| 21-May-03 | 0.011 ± 0.002 | 0.011 ± 0.002 | 0.009 ± 0.002 | 0.009 ± 0.002 | 0.011 ± 0.002 |
| 28-May-03 | 0.011 ± 0.002 | 0.009 ± 0.002 | 0.011 ± 0.002 | 0.010 ± 0.002 | 0.007 ± 0.002 |
| 04-Jun-03 | 0.012 ± 0.002 | 0.019 ± 0.002 | 0.025 ± 0.003 | 0.022 ± 0.003 | 0.025 ± 0.003 |
| 11-Jun-03 | 0.004 ± 0.001 | 0.005 ± 0.002 | 0.008 ± 0.002 | 0.009 ± 0.002 | 0.007 ± 0.001 |
| 18-Jun-03 | 0.005 ± 0.002 | 0.009 ± 0.002 | 0.006 ± 0.002 | 0.004 ± 0.001 | 0.007 ± 0.002 |
| 24-Jun-03 | 0.005 ± 0.002 | 0.007 ± 0.002 | 0.006 ± 0.002 | 0.006 ± 0.002 | 0.010 ± 0.002 |
| Mean: | 0.010 ± 0.001 | 0.012 ± 0.001 | 0.012 ± 0.001 | 0.011 ± 0.001 | 0.012 ± 0.001 |

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

| Sample Site | Be-7 | K-40 | Cs-134 | Cs-137 | Pb-210 |
|---|---|---|---|---|---|
| H08 | 0.0810 ± 0.0097 | <0.0228 | <0.0017 | <0.0012 | <0.0507 |
| H12 | 0.1315 ± 0.0110 | <0.0285 | <0.0015 | <0.0015 | <0.0469 |
| H14 | 0.1117 ± 0.0115 | <0.0280 | <0.0014 | <0.0010 | <0.0539 |
| H30 | 0.0981 ± 0.0122 | <0.0231 | <0.0015 | <0.0014 | <0.0537 |
| H34 | 0.1182 ± 0.0113 | <0.0296 | <0.0016 | <0.0010 | 0.0463 ± 0.0142 |

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 | 09-Apr-03 | 230 ± 24 | 321 ± 42 | <5 | <5 | <11 | <6 | <13 | <9 | <9 | <5 | <5 | <9 |
| | 14-Apr-03 | 81 ± 22 | 321 ± 35 | <5 | <5 | <12 | <5 | <11 | <9 | <9 | <5 | <6 | <8 |
| | 23-Apr-03 | 79 ± 39 | 298 ± 31 | <3 | <3 | <7 | <4 | <9 | <6 | <4 | <3 | <4 | <9 |
| | 01-May-03 | <120 | 369 ± 47 | <7 | <7 | <12 | <9 | <16 | <12 | <8 | <7 | <7 | <10 |
| | 07-May-03 | <120 | 305 ± 34 | <4 | <3 | <5 | <4 | <8 | <5 | <4 | <4 | <3 | <7 |
| | 12-May-03 | <120 | 335 ± 30 | <4 | <3 | <6 | <4 | <7 | <6 | <4 | <3 | <4 | <9 |
| | 21-May-03 | <120 | 350 ± 32 | <3 | <3 | <8 | <5 | <7 | <6 | <4 | <3 | <3 | <9 |
| | 28-May-03 | <120 | 385 ± 36 | <4 | <4 | <11 | <5 | <10 | <9 | <5 | <5 | <5 | <10 |
| | 03-Jun-03 | <122 | 418 ± 43 | <6 | <6 | <13 | <8 | <14 | <11 | <7 | <6 | <6 | <13 |
| | 11-Jun-03 | <121 | 367 ± 35 | <3 | <3 | <8 | <4 | <7 | <6 | <5 | <4 | <4 | <8 |
| | 18-Jun-03 | <121 | 331 ± 27 | <2 | <2 | <6 | <4 | <7 | <5 | <4 | <3 | <3 | <5 |
| | 24-Jun-03 | <121 | 307 ± 35 | <3 | <3 | <7 | <4 | <7 | <5 | <4 | <4 | <3 | <8 |
| H59 | 01-Apr-03 | <121 | 348 ± 32 | <3 | <4 | <9 | <4 | <7 | <5 | <8 | <4 | <4 | <5 |
| | 01-May-03 | <120 | 390 ± 43 | <6 | <7 | <13 | <8 | <17 | <11 | <9 | <8 | <7 | <11 |
| | 03-Jun-03 | <122 | 411 ± 25 | <3 | <3 | <5 | <3 | <6 | <5 | <3 | <3 | <3 | <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 | 22-Apr-03 | 1469 ± 153 | <18 | <18 | <37 | <22 | <39 | <21 | <19 | <363 | <90 |
| H59 | 09-Apr-03 | 1337 ± 144 | <16 | <17 | <36 | <19 | <45 | <18 | <16 | 537 ± 155 | <81 |

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 | 01-Apr-03 | 1158 ± 41 | 4135 ± 105 | <12 | <8 | <8 | <1192 | <20 | <137 |
| | 01-May-03 | 575 ± 58 | 5043 ± 174 | <16 | <13 | <13 | <732 | <32 | <242 |
| | 03-Jun-03 | 843 ± 73 | 4069 ± 206 | <16 | <20 | <18 | <2297 | <50 | <303 |
| H52 | 01-Apr-03 | 674 ± 28 | 6354 ± 82 | <8 | <5 | <5 | 528 ± 138 | <14 | <102 |
| | 01-May-03 | 1593 ± 40 | 4224 ± 92 | <8 | <7 | <7 | <983 | <18 | <143 |
| | 03-Jun-03 | 547 ± 81 | 3347 ± 197 | <15 | <20 | <19 | <2588 | <53 | <294 |
| H59 | 01-Apr-03 | 706 ± 75 | 4129 ± 161 | <19 | <13 | <11 | <664 | <31 | <243 |
| | 01-May-03 | 1051 ± 99 | 3558 ± 195 | <19 | <18 | <17 | <2215 | <42 | <337 |
| | 03-Jun-03 | 997 ± 75 | 4372 ± 175 | <11 | <12 | <12 | <733 | <34 | <235 |

4.c. MILK - (pCi/L)

| Sample Site | Collection Date | K-40 | I-131 | Cs-134 | Cs-137 | Ba-140 La-140 (A) |
|---|---|---|---|---|---|---|
| H101 | 24-May-03 | 1650 ± 53 | <0.5 | <5 | 37 ± 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

Technical Specifications Sampling

Third Quarter, 2003

| 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 | 14 |
| | Monthly | 1 | 3 |
| 3.b. Shoreline Sediment | Semiannually | 2 | 2 |
| 4. Ingestion | | | |
| 4.a. Fish and Invertebrates | | | |
| 4.a.1. Crustacea | Semiannually | 2 | 2 |
| 4.a.2. Fish | Semiannually | 2 | 1 |
| 4.b. Broadleaf Vegetation | Monthly | 3 | 9 |
| 4.c. Milk | Quarterly | 1 | 1 |
| | | | Total: 189 |

NOTE: Measurement results having magnitudes that are significantly above the background of the measurement system are reported as net values plus or minus a one-standard-deviation error term. Measurement results that are not significantly above background 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.

1. DIRECT RADIATION - TLDs - (μR/hour)

| Sample Site | Deployment 03-Jun-03 Collection 23-Sep-03 | Sample Site | Deployment 03-Jun-03 Collection 23-Sep-03 |
|---|---|---|---|
| N-1 | 5.2 ± 0.2 | SW-2 | 4.2 ± 0.2 |
| NNW-5 | 4.5 ± 0.2 | SW-5 | 5.6 ± 0.2 |
| NNW-10 | 4.9 ± 0.2 | SW-10 | 4.7 ± 0.2 |
| NW-5 | 4.6 ± 0.2 | SSW-2 | 4.5 ± 0.2 |
| NW-10 | 6.0 ± 0.2 | SSW-5 | 5.3 ± 0.2 |
| WNW-2 | 4.8 ± 0.2 | SSW-10 | 4.9 ± 0.2 |
| WNW-5 | 4.7 ± 0.2 | S-5 | 4.6 ± 0.2 |
| WNW-10 | 5.5 ± 0.2 | S-10 | 4.6 ± 0.2 |
| W-2 | 4.3 ± 0.2 | S/SSE-10 | 4.4 ± 0.2 |
| W-5 | 4.8 ± 0.2 | SSE-5 | 4.3 ± 0.2 |
| W-10 | 4.6 ± 0.2 | SSE-10 | 5.1 ± 0.2 |
| WSW-2 | 4.4 ± 0.2 | SE-1 | 4.0 ± 0.2 |
| WSW-5 | 4.4 ± 0.2 | H-32 | 5.4 ± 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 |
|---|---|---|---|---|---|
| 09-Jul-03 | <0.05 | <0.04 | <0.04 | <0.05 | <0.04 |
| 15-Jul-03 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| 24-Jul-03 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| 30-Jul-03 | <0.04 | <0.04 | <0.04 | <0.04 | <0.04 |
| 05-Aug-03 | <0.02 | <0.02 | <0.01 | <0.02 | <0.01 |
| 14-Aug-03 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| 20-Aug-03 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| 28-Aug-03 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| 04-Sep-03 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| 10-Sep-03 | <0.02 | <0.02 | <0.02 | <0.02 | <0.03 |
| 16-Sep-03 | <0.03 | <0.03 | <0.02 | <0.02 | <0.02 |
| 23-Sep-03 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| 30-Sep-03 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |

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

| Collection Date | Sample Site H08 | H12 | H14 | H30 | H34 |
|---|---|---|---|---|---|
| 09-Jul-03 | 0.010 ± 0.002 | 0.008 ± 0.002 | 0.008 ± 0.002 | 0.007 ± 0.001 | 0.011 ± 0.002 |
| 15-Jul-03 | 0.006 ± 0.002 | 0.010 ± 0.002 | 0.008 ± 0.002 | 0.010 ± 0.002 | 0.011 ± 0.002 |
| 24-Jul-03 | 0.009 ± 0.002 | 0.009 ± 0.002 | 0.012 ± 0.002 | 0.010 ± 0.002 | 0.009 ± 0.002 |
| 30-Jul-03 | 0.006 ± 0.002 | 0.007 ± 0.002 | 0.007 ± 0.002 | 0.004 ± 0.002 | 0.008 ± 0.002 |
| 05-Aug-03 | 0.005 ± 0.002 | 0.013 ± 0.002 | 0.008 ± 0.002 | 0.005 ± 0.002 | 0.007 ± 0.002 |
| 14-Aug-03 | 0.005 ± 0.001 | 0.007 ± 0.001 | 0.005 ± 0.001 | 0.005 ± 0.001 | 0.005 ± 0.001 |
| 20-Aug-03 | 0.007 ± 0.002 | 0.005 ± 0.002 | 0.008 ± 0.002 | 0.006 ± 0.002 | 0.009 ± 0.002 |
| 28-Aug-03 | 0.006 ± 0.002 | 0.009 ± 0.002 | 0.007 ± 0.002 | 0.010 ± 0.002 | 0.009 ± 0.002 |
| 04-Sep-03 | 0.004 ± 0.001 | 0.011 ± 0.002 | 0.010 ± 0.002 | 0.009 ± 0.002 | 0.011 ± 0.002 |
| 10-Sep-03 | 0.004 ± 0.002 | 0.006 ± 0.002 | 0.005 ± 0.002 | 0.005 ± 0.002 | 0.007 ± 0.002 |
| 16-Sep-03 | 0.012 ± 0.002 | 0.013 ± 0.002 | 0.008 ± 0.002 | 0.012 ± 0.002 | 0.011 ± 0.002 |
| 23-Sep-03 | 0.010 ± 0.002 | 0.011 ± 0.002 | 0.011 ± 0.002 | 0.015 ± 0.002 | 0.017 ± 0.002 |
| 30-Sep-03 | 0.005 ± 0.002 | 0.003 ± 0.001 | 0.008 ± 0.002 | 0.014 ± 0.002 | 0.015 ± 0.002 |
| Mean | 0.007 ± 0.001 | 0.009 ± 0.001 | 0.008 ± 0.001 | 0.009 ± 0.001 | 0.010 ± 0.001 |

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

Third Quarter, 2003

| Sample Site | Be-7 | K-40 | Cs-134 | Cs-137 | Pb-210 |
|---|---|---|---|---|---|
| H08 | 0.0765 ± 0.0127 | <0.0274 | <0.0016 | <0.0014 | <0.0558 |
| H12 | 0.0766 ± 0.0089 | <0.0173 | <0.0011 | <0.0012 | 0.0068 ± 0.0034 |
| H14 | 0.0809 ± 0.0134 | <0.0346 | <0.0017 | <0.0012 | <0.0624 |
| H30 | 0.0945 ± 0.0087 | <0.0194 | <0.0013 | <0.0011 | 0.0131 ± 0.0031 |
| H34 | 0.0854 ± 0.0148 | <0.0290 | <0.0016 | <0.0012 | <0.0585 |

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 | 01-Jul-03 | <115 | 386 ± 40 | <5 | <5 | <10 | <7 | <12 | <9 | <6 | <5 | <4 | <10 |
| | 09-Jul-03 | <115 | 385 ± 25 | <2 | <3 | <5 | <3 | <6 | <4 | <3 | <3 | <3 | <5 |
| | 15-Jul-03 | <115 | 421 ± 42 | <5 | <5 | <11 | <6 | <12 | <9 | <6 | <6 | <5 | <9 |
| | 24-Jul-03 | <115 | 338 ± 27 | <3 | <3 | <7 | <4 | <6 | <5 | <4 | <3 | <3 | <4 |
| | 30-Jul-03 | <118 | 401 ± 34 | <3 | <3 | <6 | <5 | <9 | <6 | <4 | <5 | <4 | <6 |
| | 05-Aug-03 | <121 | 340 ± 34 | <4 | <3 | <6 | <4 | <9 | <7 | <5 | <4 | <4 | <7 |
| | 14-Aug-03 | <121 | 324 ± 32 | <4 | <4 | <8 | <4 | <8 | <5 | <6 | <4 | <4 | <5 |
| | 20-Aug-03 | <117 | 314 ± 31 | <3 | <3 | <8 | <4 | <7 | <6 | <4 | <3 | <3 | <9 |
| | 28-Aug-03 | <117 | 287 ± 29 | <3 | <3 | <5 | <3 | <6 | <5 | <3 | <3 | <2 | <8 |
| | 04-Sep-03 | <117 | 336 ± 30 | <3 | <3 | <7 | <4 | <8 | <5 | <4 | <4 | <3 | <7 |
| | 10-Sep-03 | <120 | 361 ± 23 | <2 | <3 | <6 | <3 | <5 | <5 | <4 | <3 | <3 | <4 |
| | 17-Sep-03 | <119 | 341 ± 33 | <3 | <4 | <8 | <4 | <8 | <6 | <6 | <4 | <4 | <6 |
| | 23-Sep-03 | <119 | 354 ± 26 | <3 | <2 | <5 | <3 | <7 | <5 | <3 | <3 | <3 | <5 |
| | 30-Sep-03 | <120 | 369 ± 25 | <2 | <2 | <4 | <3 | <5 | <4 | <3 | <3 | <3 | <7 |
| H59 | 09-Jul-03 | <115 | 370 ± 25 | <3 | <2 | <6 | <3 | <5 | <4 | <3 | <3 | <3 | <5 |
| | 05-Aug-03 | <121 | 370 ± 40 | <4 | <4 | <9 | <3 | <9 | <8 | <4 | <4 | <5 | <5 |
| | 17-Sep-03 | <119 | 309 ± 37 | <5 | <5 | <8 | <5 | <11 | <8 | <6 | <6 | <5 | <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 | 15-Aug-03 | <71 | 308 ± 53 | <8 | <8 | <12 | <10 | <655 | 338 ± 12 | 150 ± 13 | <472 |
| H59 | 15-Aug-03 | <36 | 124 ± 22 | <3 | <3 | <4 | <4 | 330 ± 117 | 257 ± 5 | 70 ± 6 | 381 ± 90 |

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 | 14-Aug-03 | 1658 ± 216 | <25 | <17 | <51 | <27 | <50 | <28 | <22 | <423 | <158 |
| H59 | 15-Aug-03 | 1374 ± 156 | <17 | <19 | <43 | <25 | <43 | <20 | <24 | <364 | <93 |

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 | 15-Aug-03 | 3454 ± 248 | <25 | <20 | <51 | <30 | <49 | <30 | <20 | <519 | <120 |

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 | 09-Jul-03 | 1028 ± 83 | 4815 ± 212 | <17 | <17 | <16 | <2478 | <49 | <301 |
| | 05-Aug-03 | 991 ± 88 | 4754 ± 214 | <14 | <17 | <15 | <2235 | <49 | <341 |
| | 17-Sep-03 | 806 ± 96 | 4056 ± 193 | <19 | <18 | <13 | <2352 | <47 | <327 |
| H52 | 09-Jul-03 | 527 ± 62 | 4798 ± 169 | <15 | <12 | <11 | <898 | <37 | <294 |
| | 05-Aug-03 | 995 ± 83 | 4614 ± 214 | <16 | <18 | 17 ± 6 | <2530 | <50 | <292 |
| | 17-Sep-03 | 779 ± 62 | 5894 ± 192 | <14 | <13 | <15 | <796 | <32 | <284 |
| H59 | 09-Jul-03 | 781 ± 73 | 6084 ± 194 | <15 | <13 | <12 | <889 | <41 | <318 |
| | 05-Aug-03 | 628 ± 61 | 4122 ± 158 | <11 | <10 | <9 | <726 | <33 | <253 |
| | 17-Sep-03 | 689 ± 61 | 4542 ± 166 | <15 | <12 | <12 | <700 | <34 | <264 |

4.c. MILK - (pCi/L)

| Sample Site | Collection Date | K-40 | I-131 | Cs-134 | Cs-137 | Ba-140 La-140 (A) |
|---|---|---|---|---|---|---|
| H101 | 14-Aug-03 | 1779 ± 27 | <0.1 | <2 | 59 ± 1 | <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

## Technical Specifications Sampling

## Fourth Quarter, 2003

| 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 | 1 | 0 |
| 4.a.2. Fish | Semiannually | 0 | 1 |
| 4.b. Broadleaf Vegetation | Monthly | 3 | 9 |
| 4.c. Milk | Quarterly | 1 | 10 |
| | | | Total: 183 |

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.

1. DIRECT RADIATION - TLDs - (μR/hour)

| Sample Site | Deployment 23-Sep-03 Collection 02-Dec-03 | Sample Site | Deployment 23-Sep-03 Collection 02-Dec-03 |
|---|---|---|---|
| N-1 | 4.8 ± 0.2 | SW-2 | 4.6 ± 0.2 |
| NNW-5 | 4.8 ± 0.2 | SW-5 | 5.8 ± 0.2 |
| NNW-10 | 4.8 ± 0.2 | SW-10 | 4.7 ± 0.2 |
| NW-5 | 5.1 ± 0.2 | SSW-2 | 4.4 ± 0.2 |
| NW-10 | 6.2 ± 0.3 | SSW-5 | 5.4 ± 0.2 |
| WNW-2 | 5.0 ± 0.2 | SSW-10 | 5.4 ± 0.2 |
| WNW-5 | 5.0 ± 0.2 | S-5 | 4.8 ± 0.2 |
| WNW-10 | 5.7 ± 0.2 | S-10 | 4.4 ± 0.2 |
| W-2 | 4.9 ± 0.2 | S/SSE-10 | 4.6 ± 0.2 |
| W-5 | 5.0 ± 0.2 | SSE-5 | 4.4 ± 0.2 |
| W-10 | 5.0 ± 0.2 | SSE-10 | 5.5 ± 0.2 |
| WSW-2 | 4.8 ± 0.2 | SE-1 | 4.6 ± 0.2 |
| WSW-5 | 4.8 ± 0.2 | H-32 | 5.6 ± 0.2 |
| WSW-10 | 4.1 ± 0.2 | | |

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

| Collection Date | H08 | H12 | H14 | H30 | H34 |
|---|---|---|---|---|---|
| 07-Oct-03 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| 15-Oct-03 | <0.02 | <0.01 | <0.01 | <0.01 | <0.01 |
| 22-Oct-03 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| 29-Oct-03 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| 04-Nov-03 | <0.02 | <0.02 | <0.01 | <0.02 | <0.02 |
| 12-Nov-03 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| 18-Nov-03 | <0.02 | <0.02 | <0.01 | <0.02 | <0.02 |
| 25-Nov-03 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| 02-Dec-03 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| 09-Dec-03 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| 15-Dec-03 | <0.02 | <0.02 | <0.02 | <0.02 | <0.02 |
| 22-Dec-03 | <0.02 | <0.02 | <0.01 | <0.01 | <0.01 |
| 29-Dec-03 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |

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

| Collection Date | Sample Site H08 | H12 | H14 | H30 | H34 |
|---|---|---|---|---|---|
| 07-Oct-03 | 0.022 ± 0.003 | 0.014 ± 0.002 | 0.020 ± 0.002 | 0.026 ± 0.003 | 0.022 ± 0.003 |
| 15-Oct-03 | 0.012 ± 0.002 | 0.011 ± 0.002 | 0.014 ± 0.002 | 0.013 ± 0.002 | 0.011 ± 0.002 |
| 22-Oct-03 | 0.013 ± 0.002 | 0.018 ± 0.002 | 0.015 ± 0.002 | 0.015 ± 0.002 | 0.013 ± 0.002 |
| 29-Oct-03 | 0.017 ± 0.002 | 0.023 ± 0.002 | 0.021 ± 0.002 | 0.019 ± 0.002 | 0.022 ± 0.002 |
| 04-Nov-03 | 0.007 ± 0.002 | 0.007 ± 0.002 | 0.008 ± 0.002 | 0.007 ± 0.002 | 0.009 ± 0.002 |
| 12-Nov-03 | 0.004 ± 0.001 | 0.005 ± 0.001 | 0.005 ± 0.001 | 0.005 ± 0.001 | 0.007 ± 0.002 |
| 18-Nov-03 | 0.019 ± 0.003 | 0.017 ± 0.002 | 0.013 ± 0.002 | 0.015 ± 0.002 | 0.015 ± 0.002 |
| 25-Nov-03 | 0.012 ± 0.002 | 0.016 ± 0.002 | 0.013 ± 0.002 | 0.013 ± 0.002 | 0.018 ± 0.002 |
| 02-Dec-03 | 0.015 ± 0.002 | 0.015 ± 0.002 | 0.015 ± 0.002 | 0.011 ± 0.002 | 0.013 ± 0.002 |
| 09-Dec-03 | 0.007 ± 0.002 | 0.016 ± 0.002 | 0.011 ± 0.002 | 0.014 ± 0.002 | 0.014 ± 0.002 |
| 15-Dec-03 | 0.016 ± 0.002 | 0.012 ± 0.002 | 0.013 ± 0.002 | 0.014 ± 0.002 | 0.017 ± 0.002 |
| 22-Dec-03 | 0.009 ± 0.002 | 0.010 ± 0.002 | 0.015 ± 0.002 | 0.014 ± 0.002 | 0.018 ± 0.002 |
| 29-Dec-03 | 0.019 ± 0.002 | 0.015 ± 0.002 | 0.014 ± 0.002 | 0.017 ± 0.002 | 0.015 ± 0.002 |
| Mean: | 0.013 ± 0.001 | 0.014 ± 0.001 | 0.014 ± 0.001 | 0.014 ± 0.001 | 0.015 ± 0.001 |

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

| | Fourth Quarter, 2003 | | | | |
|---|---|---|---|---|---|
| Sample Site | Be-7 | K-40 | Cs-134 | Cs-137 | Pb-210 |
| H08 | 0.1506 ± 0.0106 | <0.0200 | <0.0012 | <0.0009 | 0.0199 ± 0.0039 |
| H12 | 0.1206 ± 0.0108 | <0.0204 | <0.0010 | <0.0008 | 0.0202 ± 0.0038 |
| H14 | 0.1386 ± 0.0107 | <0.0171 | <0.0008 | <0.0008 | 0.0248 ± 0.0042 |
| H30 | 0.1355 ± 0.0114 | <0.0184 | <0.0013 | <0.0011 | 0.0212 ± 0.0050 |
| H34 | 0.1498 ± 0.0122 | <0.0178 | <0.0011 | <0.0011 | 0.0184 ± 0.0042 |

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 | 07-Oct-03 | <120 | 335 ± 32 | <3 | <4 | <8 | <4 | <7 | <6 | <4 | <4 | <5 | <9 |
| | 15-Oct-03 | <119 | 345 ± 27 | <3 | <4 | <6 | <4 | <6 | <6 | <4 | <4 | <4 | <7 |
| | 22-Oct-03 | <113 | 345 ± 24 | <3 | <3 | <5 | <3 | <6 | <5 | <3 | <3 | <3 | <7 |
| | 29-Oct-03 | <122 | 416 ± 36 | <4 | <3 | <7 | <4 | <8 | <5 | <4 | <4 | <3 | <8 |
| | 04-Nov-03 | 210 ± 24 | 350 ± 50 | <5 | <5 | <9 | <7 | <12 | <8 | <7 | <5 | <6 | <11 |
| | 12-Nov-03 | <126 | 339 ± 39 | <4 | <5 | <9 | <5 | <10 | <7 | <5 | <5 | <5 | <14 |
| | 18-Nov-03 | <126 | 317 ± 32 | <4 | <3 | <7 | <3 | <8 | <7 | <5 | <3 | <3 | <6 |
| | 25-Nov-03 | <114 | 293 ± 35 | <4 | <4 | <8 | <4 | <7 | <7 | <6 | <4 | <3 | <5 |
| | 02-Dec-03 | <114 | 319 ± 44 | <7 | <6 | <13 | <7 | <11 | <10 | <6 | <7 | <5 | <10 |
| | 09-Dec-03 | <115 | 324 ± 35 | <3 | <4 | <7 | <5 | <8 | <7 | <4 | <4 | <4 | <9 |
| | 15-Dec-03 | <113 | 357 ± 15 | <2 | <1 | <3 | <2 | <4 | <3 | <2 | <2 | <2 | <2 |
| | 22-Dec-03 | <113 | 354 ± 32 | <3 | <4 | <9 | <4 | <8 | <7 | <8 | <3 | <5 | <6 |
| | 29-Dec-03 | <113 | 325 ± 36 | <3 | <4 | <5 | <4 | <8 | <7 | <6 | <5 | <4 | <4 |
| H59 | 07-Oct-03 | <120 | 327 ± 34 | <4 | <4 | <8 | <4 | <9 | <6 | <5 | <4 | <4 | <9 |
| | 12-Nov-03 | <126 | 262 ± 47 | <5 | <6 | <13 | <5 | <14 | <11 | <6 | <6 | <6 | <14 |
| | 02-Dec-03 | 61 ± 17 | 296 ± 31 | <4 | <3 | <8 | <4 | <7 | <6 | <5 | <4 | <4 | <7 |
| | 03-Dec-02 | <124 | 372 ± 45 | <6 | <4 | <15 | <9 | <13 | <11 | <9 | <6 | <5 | <12 |

(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 | K-40 | Mn-54 | Co-58 | Fe-59 | Co-60 | Zn-65 | Cs-134 | Cs-137 | Ra-226 | Ra-228 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| H15 | These samples were previously collected. | | | | | | | | | | |
| H59 | 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 | These samples were previously collected. | | | | | | | | | | |
| H59 | These samples were previously collected. | | | | | | | | | | |

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

| Sample Site | Collection Date | K-40 | Mn-54 | Co-58 | Fe-59 | Co-60 | Zn-65 | Cs-134 | Cs-137 | Ra-226 | Ra-228 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| H15 | 14-Oct-03 | 1824 ± 143 | <15 | <14 | <30 | <18 | <34 | <15 | <17 | <251 | <55 |
| H59 | This sample was previously collected. | | | | | | | | | | |

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

| Sample Site | Collection Date | Be-7 | K-40 | I-131 | Cs-134 | Cs-137 | Pb-210 | Pb-212 | Ra-226 |
|---|---|---|---|---|---|---|---|---|---|
| H51 | 07-Oct-03 | 1003 ± 63 | 3971 ± 152 | <11 | <13 | <13 | <867 | <38 | <257 |
| | 12-Nov-03 | 1679 ± 100 | 3868 ± 211 | <17 | <17 | <21 | <2665 | <58 | <384 |
| | 03-Dec-03 | 1156 ± 79 | 5983 ± 198 | <14 | <14 | <14 | <920 | <44 | <316 |
| H52 | 07-Oct-03 | 793 ± 67 | 4032 ± 160 | <12 | <13 | <12 | <786 | <37 | <271 |
| | 12-Nov-03 | 835 ± 83 | 3181 ± 198 | <17 | <18 | <17 | <2674 | <44 | <353 |
| | 03-Dec-03 | 1475 ± 112 | 4927 ± 231 | <16 | <18 | <18 | <2506 | <55 | <363 |
| H59 | 07-Oct-03 | 1526 ± 91 | 4247 ± 188 | <13 | <16 | <14 | <2453 | <40 | <319 |
| | 12-Nov-03 | 1571 ± 82 | 4623 ± 170 | <14 | <13 | <14 | <853 | <41 | <316 |
| | 03-Dec-03 | 2033 ± 134 | 3163 ± 194 | <20 | <18 | <18 | <3224 | <54 | <346 |

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 2003

DEPARTMENT OF ENERGY

QAP 58 , June 2003

AND

QAP 59, December 2003

# 2003
# ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT
# ST. LUCIE PLANT – UNITS 1 & 2

DOE-QAP 58 RESULTS

| Radionuclide | Reported Value | Reported Error | EML Value | EML Error | Reported / EML | Evaluation |
|---|---|---|---|---|---|---|
| **Matrix:** AI Air Filter Bq/filter | | | | | | |
| AM241 | 0.350 | 0.030 | 0.340 | 0.040 | 1.029 | A |
| CO60 | 34.530 | 0.150 | 33.500 | 0.870 | 1.031 | A |
| CS137 | 109.350 | 0.200 | 99.700 | 2.300 | 1.097 | A |
| GROSS ALPHA | 0.810 | 0.030 | 1.170 | 0.120 | 0.692 | N |
| GROSS BETA | 1.660 | 0.040 | 1.500 | 0.150 | 1.107 | A |
| MN54 | 48.380 | 0.180 | 43.800 | 1.130 | 1.105 | A |
| **Matrix:** SO Soil Bq/kg | | | | | | |
| AC228 | 57.000 | 1.000 | 57.600 | 2.500 | 0.990 | A |
| AM241 | 13.100 | 0.800 | 15.600 | 1.000 | 0.840 | W |
| BI212 | 62.600 | 4.400 | 60.600 | 4.000 | 1.033 | A |
| BI214 | 59.000 | 1.000 | 67.000 | 2.300 | 0.881 | A |
| CS137 | 1491.000 | 3.000 | 1450.000 | 73.000 | 1.028 | A |
| K40 | 661.000 | 8.000 | 636.000 | 33.000 | 1.039 | A |
| PB212 | 61.200 | 1.000 | 57.900 | 2.900 | 1.057 | A |
| PB214 | 66.000 | 1.000 | 71.100 | 2.300 | 0.928 | A |
| TH234 | 124.400 | 5.200 | 127.000 | 7.100 | 0.980 | A |
| U238 | 120.000 | 7.000 | 125.000 | 0.300 | 0.960 | A |
| **Matrix:** VE Vegetation Bq/kg | | | | | | |
| AM241 | 4.900 | 0.700 | 3.510 | 0.130 | 1.396 | A |
| CO60 | 13.500 | 0.600 | 12.100 | 0.700 | 1.116 | A |
| CS137 | 497.000 | 2.000 | 444.000 | 22.000 | 1.119 | A |
| K40 | 1254.000 | 20.000 | 1120.000 | 60.000 | 1.120 | A |
| **Matrix:** WA Water Bq/L | | | | | | |
| AM241 | 3.000 | 0.580 | 2.130 | 0.150 | 1.408 | W |
| CO60 | 233.400 | 0.580 | 234.000 | 8.400 | 0.997 | A |
| CS134 | 28.200 | 0.240 | 30.500 | 1.090 | 0.925 | A |
| CS137 | 64.260 | 0.480 | 63.800 | 3.400 | 1.007 | A |
| GROSS BETA | 750.840 | 8.410 | 627.500 | 10.000 | 1.197 | A |
| H3 | 421.310 | 6.100 | 390.000 | 3.400 | 1.080 | A |
| SR90 | 3.710 | 0.200 | 4.340 | 0.200 | 0.855 | A |

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

**2003**
**ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT**
**ST. LUCIE PLANT – UNITS 1 & 2**

## DOE-QAP 59 RESULTS

| Radionuclide | Reported Value | Reported Error | EML Value | EML Error | Reported / EML | Evaluation |
|---|---|---|---|---|---|---|
| **Matrix:** Al Air Filter Bq/filter | | | | | | |
| MN54 | 63.600 | 0.200 | 58.000 | 1.300 | 1.097 | A |
| CO60 | 56.430 | 0.200 | 55.100 | 1.100 | 1.024 | A |
| CS137 | 59.500 | 0.200 | 54.800 | 1.100 | 1.086 | A |
| AM241 | 0.470 | 0.030 | 0.435 | 0.043 | 1.080 | A |
| Gross Alpha | 4.770 | 0.090 | 3.110 | 0.310 | 1.534 | N |
| Gross Beta | 4.470 | 0.060 | 3.890 | 0.390 | 1.149 | A |
| **Matrix:** SO Soil Bq/kg | | | | | | |
| K40 | 420.00 | 7.000 | 488.000 | 26.000 | 0.861 | W |
| CS137 | 1671.000 | 3.000 | 1973.000 | 99.000 | 0.847 | W |
| BI212 | 47.800 | 4.200 | 53.900 | 4.300 | 0.887 | A |
| PB212 | 46.600 | 1.400 | 50.700 | 2.700 | 0.919 | A |
| BI214 | 27.000 | 1.000 | 34.400 | 1.400 | 0.785 | W |
| PB214 | 30.000 | 1.000 | 35.200 | 1.500 | 0.852 | W |
| AC228 | 43.000 | 1.000 | 50.800 | 1.800 | 0.846 | W |
| TH234 | 93.000 | 4.400 | 116.000 | 7.100 | 0.802 | W |
| Bq U | 102.000 | 7.000 | 127.100 | 2.300 | 0.803 | W |
| AM241 | 15.500 | 0.800 | 18.400 | 1.800 | 0.842 | W |
| **Matrix:** VE Vegetation Bq/kg | | | | | | |
| No Sample Provided by DOE EML. | | | | | | |
| The person that prepares this sample retired, and a trained/qualified replacement was not available within this evaluation cycle | | | | | | |
| **Matrix:** WA Water Bq/L | | | | | | |
| H3 | 492.570 | 6.470 | 446.300 | 2.200 | 1.104 | A |
| CO60 | 488.900 | 1.100 | 513.000 | 18.000 | 0.953 | A |
| SR90 | 5.670 | 0.300 | 7.040 | 0.330 | 0.805 | W |
| CS134 | 56.200 | 0.500 | 63.000 | 2.000 | 0.892 | W |
| CS137 | 78.920 | 0.640 | 80.300 | 4.100 | 0.983 | A |
| AM241 | 8.980 | 0.920 | 8.760 | 0.880 | 1.025 | A |
| GROSS ALPHA | 502.510 | 10.810 | 622.000 | 62.000 | 0.808 | A |
| GROSS BETA | 1988.740 | 14.640 | 1948.000 | 195.000 | 1.021 | A |

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