



May 05, 2025

L-2025-039
10 CFR 50.4
10 CFR 50.36

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

Re: St. Lucie Units 1 and 2
Docket Nos. 50-335 and 50-389
Renewed Facility Operating Licenses DPR-67 and NPF-16

Annual Radiological Environmental Operating Report for Calendar Year 2024

The enclosed report is being submitted pursuant to Technical Specification 5.6.1. The Annual Radiological Environmental Operating Report provides information summaries and analytical results of the Radiological Environmental Monitoring Program (REMP) for calendar year 2024.

If you have any questions regarding this submittal, please contact Maribel Valdez at 561-904-5164.

Sincerely,

A handwritten signature in black ink, appearing to read 'K. Mack', is written over a horizontal line.

Kenneth A. Mack
Director, Licensing and Regulatory Compliance
Florida Power & Light Company

Enclosure: 2024 Annual Radiological Environmental Operating Report

cc: USNRC Regional Administrator, Region II
USNRC Project Manager, St. Lucie Nuclear Plant
USNRC Resident Inspector, St. Lucie Nuclear Plant
Mr. Clark Eldredge, Florida Department of Health

ATTACHMENT

2024 Annual Radiological Environmental Operating Report
(90 pages follow)

2024
ANNUAL
RADIOLOGICAL ENVIRONMENTAL
OPERATING REPORT

ST. LUCIE PLANT
UNITS 1 & 2
LICENSE NOS. DPR-67, NPF-16
DOCKET NOS. 50-335, 50-389

Prepared by: Calvin G. Crawford

Reviewed by: _____

TABLE OF CONTENTS

<u>DESCRIPTION</u>	<u>PAGE</u>
1. Introduction	3
2. Radiological Environmental Monitoring Program	3
3. Discussion and Interpretation of Results	5
4. Environmental Radiological Monitoring Program Annual Summary	8
5. Deviations / Missing Data	18
6. Analyses with LLDs Above Required Detection Capabilities	18
7. Key to Sample Locations	19
8. Ground Water Protection – Industry Initiative	23
9. Radiological Surveillance of Florida Power & Light Company – St. Lucie Site	26
A. First Quarter 2024	
B. Second Quarter 2024	
C. Third Quarter 2024	
D. Fourth Quarter 2024	
10. Results from the Interlaboratory Comparison Program – 2024	88

1. Introduction

This report is submitted pursuant to Specification 5.6.1 of St. Lucie Unit 1 and St. Lucie Unit 2 Technical Specifications. The Annual Radiological Environmental Operating Report (AREOR) 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.

2. Radiological Environmental Monitoring Program

A. Purpose

The purpose of the Radiological Environmental Monitoring Program (REMP) 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 radioactive effluents monitoring program by verifying that the measurable concentrations of radioactive materials and levels of radiation are not higher than expected based on the effluent measurements and the modeling of the environmental exposure pathways.

B. Program Description

The Radiological Environmental Monitoring Program for the St. Lucie Plant (PSL) 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 weekly. Analyses include Iodine-131 and gross beta weekly, and gamma isotopic measurements of composite quarterly by location.
- c. Surface water samples are collected from two locations. The indicator samples are collected and analyzed weekly, while control samples are collected and analyzed monthly. 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.

2. Analytical Responsibility

Radiological environmental monitoring for PSL is conducted by the State of Florida, Department of Health (DOH), Bureau of Radiation Control (BRC). Samples are collected and analyzed by DOH field and laboratory personnel, respectively. The samples are analyzed at the DOH BRC Environmental Radiation Control Laboratory in Orlando, Florida.

C. Analytical Results

Summarized analysis data and results for all specified samples collected and analyzed during the surveillance period is provided in Section 4. Deviations from the sample schedule or missing data, if any, are noted and explained in Section 5. Samples not meeting the specified "a priori" LLD, if any, are noted and explained in Section 6. Detailed analysis data and results for all samples collected and analyzed by the BRC during the surveillance period is provided in Section 9.

D. Land Use Census

A Land Use Census survey out to a five-mile radius around PSL 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 Section 4.

E. Interlaboratory Comparison Program

The interlaboratory comparison program consists of participating in the DOE Mixed Analyte Performance Evaluation Program (MAPEP) and the Environmental Resources Associates (ERA) RadChem Study proficiency testing. The samples are analyzed using the methods applicable to the REMP (gamma spectroscopy, gross beta, and tritium for water). Results for the interlaboratory comparison program are listed in Section 10.

3. Discussion and Interpretation of Results

A. Reporting of Results

This AREOR contains the summaries, interpretations, and information required by the PSL ODCM. The following tables provide 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 PSL operation. These include nuclides such as Be-7, K-40, Th-232, and Ra-226 which are common and naturally occurring 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 showed no indication of any adverse trends attributed to effluents from the plant. The measured exposure rates were consistent with exposure rates that were observed during the pre-operational surveillance program.

2. Air Particulates/Radioiodine

The results for radioactive air particulate and radioiodine attributed to plant effluents indicated no trends attributable to plant effluents and were consistent with past measurements. No detectable I-131 was present in any of the radioiodine samples. Gamma isotopic measurements yielded no indication of any nuclides attributed to PSL operation. The results for air particulate/radioiodine samples were consistent with measurements that were made during the pre-operational surveillance program.

3. Waterborne, Surface Water

The results for radioactivity measurements in surface water were consistent with past measurements and with measurements made during the pre-operational surveillance program. Tritium was not reported as present in surface water out of 52 weekly ODCM-required indicator location samples and none of the 12 monthly control location samples. There was no indication of any other nuclides attributable to plant effluents.

4. Waterborne, Sediment and Food Products

The results for radioactivity measurements in waterborne sediment and fish samples were consistent with past measurements and with measurements made during the pre-operational surveillance program. For the Fish Ingestion Pathway, Cs-137 was not reported in any indicator samples or control samples. There was no indication of any other nuclides attributable to plant effluents.

5. Broad Leaf Vegetation

The results for radioactivity measurements in broad leaf vegetation were consistent with past measurements and with measurements made during the pre-operational surveillance program. Cs-137 was not present in any of the 24 ODCM-required indicator samples and was not present in any of the 12 control location samples. There were no indications of any other nuclides attributable to plant effluents.

6. Land Use Census

The nearest residences are the Dune Walk/Sand Dollar Condominiums at 7370 Ocean Drive (SE). This is the nearest of a series of seven high-rise buildings on the east side of A1A.

5136 Watersong Way is now the closest residence to the power plant in the Watersong development (NNW). No locations within a 5-mile radius of PSL were identified with gardens or with potential milk-producing animals (cows or goats).

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 as part of the REMP were identified by the Land Use Census.

7. Interlaboratory Comparison Program

The State of Florida DOH BRC laboratory participated in MAPEP Series 50 and 51, and the ERA RadChem Study 137 and 139 with satisfactory results. This satisfied the requirements for the Interlaboratory Comparison Program as directed in the PSL ODCM.

C. Conclusions

The data obtained through the PSL REMP 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 increasing due to station operation. Measured exposure rates are consistent with the exposure rates observed during the pre-operational surveillance program.

- Results for air particulate/radioiodine samples are consistent with measurements that were made during the pre-operational surveillance program.
- The value for tritium in surface water, showed no positive indicator samples. There was no indication of any other nuclides attributable to plant effluents.
- There was no indication of any nuclides in the waterborne sediment or food product samples that could be attributed to plant effluents.
- No Cs-137 was reported in any of the broad leaf vegetation Indicator Locations. There were no indications of any other nuclides attributable to plant effluents.

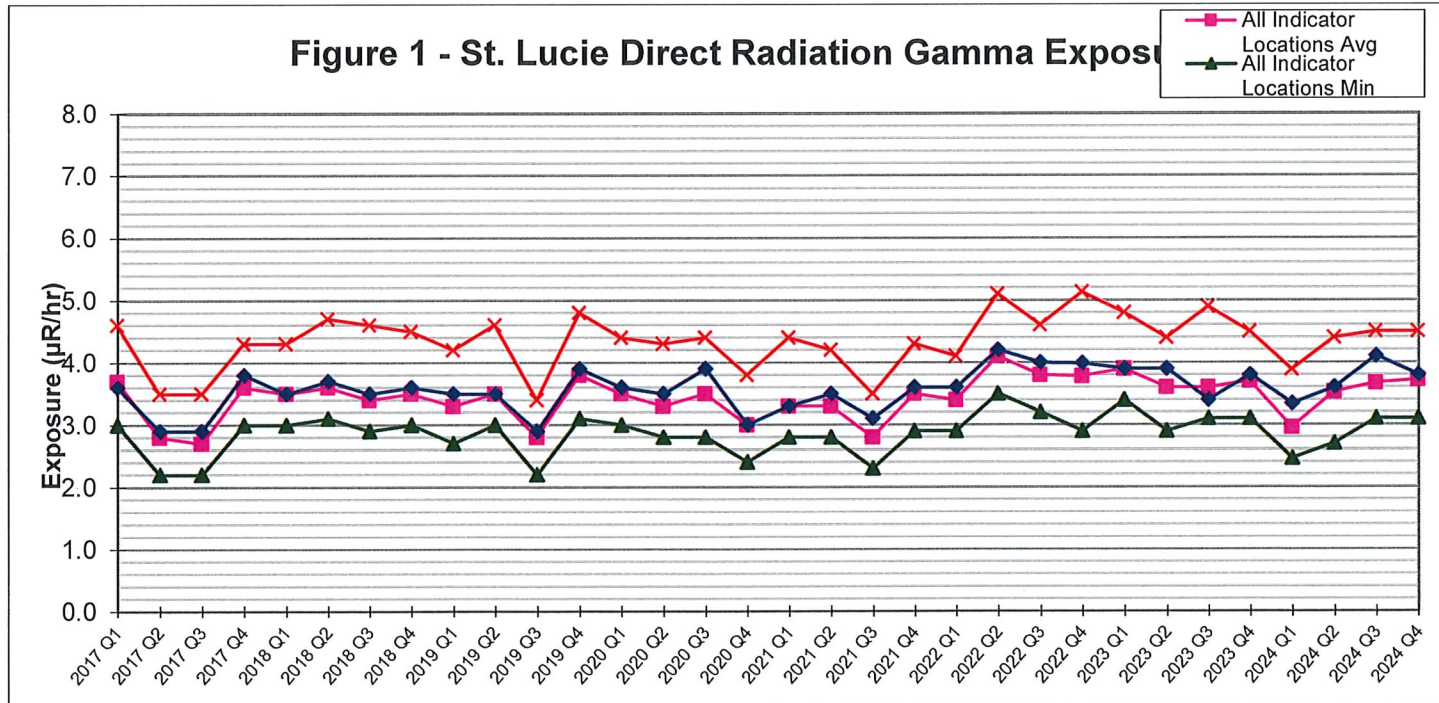
REMP sample analyses verify that the dose or dose commitment to members of the public, attributable to the operation of St. Lucie Units 1 and 2 during the surveillance period, are well within "as low as reasonably achievable" (ALARA) criteria established by 10 CFR 50, Appendix I.

4. Environmental Radiological Monitoring Program Annual Summary

I. Direct Radiation

PATHWAY: DIRECT RADIATION
 SAMPLES COLLECTED: TLD
 UNITS: micro-R/hr

Type of Analyses	Number of Analyses Performed	Lower Limit of Detection ^a (LLD)	All Indicator Locations	Location with Highest Annual Mean		Control Location
			Mean (f) ^b Range	Name ^c Distance & Direction	Mean (f) ^b Range	Mean (f) ^b Range
Exposure ^d	108	-----	3.46(104/104)	NW-10	4.3(4/4)	3.71(4/4)
			2.46 - 4.5	9.6 mi., NW	3.89 - 4.5	3.34 - 4.1
Number of Non-Routine Reported Measurements = 0.						



II. Air Particulates/Radioiodine

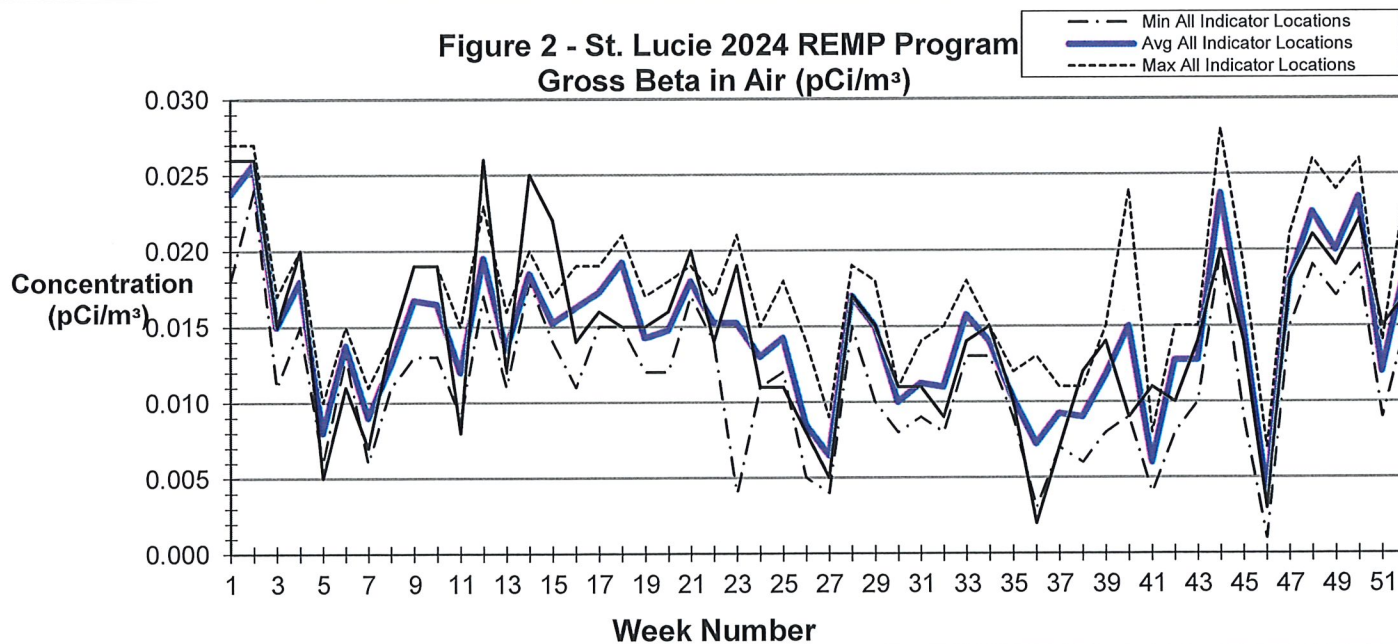
PATHWAY: AIRBORNE
 SAMPLES COLLECTED: RADIOIODINE AND PARTICULATES
 UNITS: pico-Ci/M³

Type of Analyses	Number of Analyses Performed	Lower Limit of Detection ^a (LLD)	<u>All Indicator Locations</u>		<u>Location with Highest Annual Mean</u>		<u>Control Location</u>
			<u>Mean (f)^b</u> Range		<u>Name^c</u> Distance & Direction	<u>Mean (f)^b</u> Range	<u>Mean (f)^b</u> Range
¹³¹ I	260	0.012	<MDA (0 / 208)		-----	-----	<MDA (0 / 52)
Gross Beta	260	0.0064	0.0145 (208 / 208) (0.001 - 0.028)		H14 1 mi., SE	0.015 (208 / 208) 0.004 - 0.027	0.0144 (52 / 52) 0.002 - 0.026
Composite Gamma	20						
⁷ Be	20	0.006	0.0978 (16 / 16) 0.007 - 0.142		H34 0.5 mi., N	0.1035 (4 / 4) 0.071 - 0.142	0.0987 (4 / 4) 0.074 - 0.12
⁴⁰ K	20	0.018	<MDA (0 / 16)		-----	-----	<MDA (0 / 4)
¹³⁴ Cs	20	0.0008	<MDA (0 / 16)		-----	-----	<MDA (0 / 4)
¹³⁷ Cs	20	0.0008	<MDA (0 / 16)		-----	-----	<MDA (0 / 4)
²¹⁰ Pb	20	-----	0.0113 (2 / 16) 0.011 - 0.0116		H14 1 mi., SE	0.0116 (1 / 4) <MDA - 0.0116	<MDA (0 / 4)

Be-7, K-40, and Pb-210 are naturally occurring.

Number of Non-Routine Reported Measurements = 0.

Figure 2 - St. Lucie 2024 REMP Program
 Gross Beta in Air (pCi/m³)



III. Waterborne, Surface Water

PATHWAY: WATERBORNE SAMPLES COLLECTED: SURFACE WATER UNITS: pico-Ci/LITER						
Type of Analyses	Number of Analyses Performed	Lower Limit of Detection ^a (LLD)	All Indicator Locations Mean (f) ^b Range	Date with Highest Annual Result Name ^c / Date Distance & Direction	Result	Control Locations Mean (f) ^b Range
Tritium	64	172	<MDA (0 / 52)	-----	-----	<MDA (0 / 12)
Gamma Isotopic ⁴⁰ K	64	58	342 (52 / 52) 184 - 424	H15 / 20-Nov-24 <1mi., ENE/E/ESE	424	350 (12 / 12) 184 - 428
⁵⁴ Mn		3	<MDA (0/52)	-----	-----	<MDA (0/12)
⁵⁹ Fe		6	<MDA (0/52)	-----	-----	<MDA (0/12)
⁵⁸ Co		3	<MDA (0/52)	-----	-----	<MDA (0/12)
⁶⁰ Co		4	<MDA (0/52)	-----	-----	<MDA (0/12)
⁶⁵ Zn		7	<MDA (0/52)	-----	-----	<MDA (0/12)
⁹⁵ Zr-Nb		6/3	<MDA (0/52)	-----	-----	<MDA (0/12)
¹³¹ I		4	<MDA (0/52)	-----	-----	<MDA (0/12)
¹³⁴ Cs		4	<MDA (0/52)	-----	-----	<MDA (0/12)
¹³⁷ Cs		4	<MDA (0/52)	-----	-----	<MDA (0/12)
¹⁴⁰ Ba-La		9/3	<MDA (0/52)	-----	-----	<MDA (0/12)
K-40 is naturally occurring. Number of Non-Routine Reported Measurements = 0.						

IV. Waterborne, Sediment and Food Products

PATHWAY: WATERBORNE SAMPLES COLLECTED: SHORELINE SEDIMENT UNITS: pico-Ci/kg DRY						
Type of Analyses	Number of Analyses Performed	Lower Limit of Detection ^a (LLD)	<u>All Indicator Locations</u> <u>Mean (f)^b</u> Range	<u>Date with Highest Annual Result</u> <u>Name^c / Date</u> Distance & Direction	<u>Result</u>	<u>Control Locations</u> <u>Mean (f)^b</u> Range
Gamma Isotopic	44					
⁷ Be		56	<MDA (0 / 2)	-----	<MDA	<MDA (0 / 2)
⁴⁰ K		100	214 (2 / 2) 129 - 298	H15 / 20-Aug-24 <1mi, ENE/E/ESE	298	145 (2 / 2) 75 - 215
⁵⁸ Co		6	<MDA (0 / 2)	-----	<MDA	<MDA (0 / 2)
⁶⁰ Co		7	<MDA (0 / 2)	-----	<MDA	<MDA (0 / 2)
¹³⁴ Cs		7	<MDA (0 / 2)	-----	<MDA	<MDA (0 / 2)
¹³⁷ Cs		7	<MDA (0 / 2)	-----	<MDA	<MDA (0 / 2)
²¹⁰ Pb		-----	<MDA (0 / 2)	-----	<MDA	<MDA (0 / 2)
²²⁶ Ra		15	106 (1 / 2) 106 - 106	H15 / 20-Aug-24 <1mi, ENE/E/ESE	106	90 (1 / 2) 75 - 215
²³² Th		25	<MDA (0 / 2)	-----	<MDA	<MDA (0 / 2)
²³⁵ U		-----	<MDA (0 / 2)	-----	<MDA	<MDA (0 / 2)
²³⁸ U		-----	<MDA (0 / 2)	-----	<MDA	<MDA (0 / 2)
Be-7, K-40, Pb-210, Ra-226, Th-232, U-235, and U-238 are naturally occurring. Number of Non-Routine Reported Measurements = 0.						

IV.cont. Waterborne, Sediment and Food Products

PATHWAY: INGESTION SAMPLES COLLECTED: CRUSTACEA UNITS: pico-Ci/kg WET						
Type of Analyses	Number of Analyses Performed	Lower Limit of Detection ^a (LLD)	<u>All Indicator Locations</u>	<u>Date with Highest Annual Result</u>		<u>Control Locations</u>
			<u>Mean (f)^b</u> Range	<u>Name^c / Date</u> Distance & Direction	<u>Result</u>	<u>Mean (f)^b</u> Range
Gamma Isotopic	4					
⁴⁰ K		270	398 (1 / 2) <MDA - 398	H15 / 02-Aug-24 <1mi, ENE/E/ESE	398	1820 (2 / 2) 1560 - 2080
⁵⁴ Mn		16	<MDA (0 / 2)	-----	<MDA	<MDA (0 / 2)
⁵⁸ Co		15	<MDA (0 / 2)	-----	<MDA	<MDA (0 / 2)
⁶⁰ Co		16	<MDA (0 / 2)	-----	<MDA	<MDA (0 / 2)
¹³⁴ Cs		16	<MDA (0 / 2)	-----	<MDA	<MDA (0 / 2)
¹³⁷ Cs		18	<MDA (0 / 2)	-----	<MDA	<MDA (0 / 2)
²²⁶ Ra		300	<MDA (0 / 2)	-----	<MDA	<MDA (0 / 2)
²²⁸ Ra		58	<MDA (0 / 2)	-----	<MDA	<MDA (0 / 2)
⁵⁹ Fe		28	<MDA (0 / 2)	-----	<MDA	<MDA (0 / 2)
⁶⁵ Zn		32	<MDA (0 / 2)	-----	<MDA	<MDA (0 / 2)
K-40, Ra-226, and Ra-228 are naturally occurring. Number of Non-Routine Reported Measurements = 0.						

IV.cont. Waterborne, Sediment and Food Products

PATHWAY: INGESTION SAMPLES COLLECTED: FISH UNITS: pico-Ci/kg WET						
Type of Analyses	Number of Analyses Performed	Lower Limit of Detection ^a (LLD)	<u>All Indicator Locations</u> <u>Mean (f)^b</u> Range	<u>Date with Highest Annual Result</u> <u>Name^c / Date</u> Distance & Direction	<u>Result</u>	<u>Control Locations</u> <u>Mean (f)^b</u> Range
Gamma Isotopic	5					
⁴⁰ K		270	3230 (2 / 2) 3160 - 3300	H15 / 23-Feb-24 <1mi, ENE/E/ESE	3300	2903 (3 / 2) 2080 - 3630
⁵⁴ Mn		16	<MDA (0 / 2)	-----	<MDA	<MDA (0 / 2)
⁵⁸ Co		15	<MDA (0 / 2)	-----	<MDA	<MDA (0 / 2)
⁶⁰ Co		16	<MDA (0 / 2)	-----	<MDA	<MDA (0 / 2)
¹³⁴ Cs		16	<MDA (0 / 2)	-----	<MDA	<MDA (0 / 2)
¹³⁷ Cs		18	<MDA (0 / 2)	-----	<MDA	<MDA (0 / 2)
²²⁶ Ra		300	<MDA (0 / 2)	-----	<MDA	<MDA (0 / 2)
²²⁸ Ra		58	<MDA (0 / 2)	-----	<MDA	<MDA (0 / 2)
⁵⁹ Fe		28	<MDA (0 / 2)	-----	<MDA	<MDA (0 / 2)
⁶⁵ Zn		32	<MDA (0 / 2)	-----	<MDA	<MDA (0 / 2)
K-40, Ra-226, and Ra-228 are naturally occurring. Number of Non-Routine Reported Measurements = 0.						

V. Broad Leaf Vegetation

PATHWAY: INGESTION SAMPLES COLLECTED: BROADLEAF VEGETATION UNITS: pico-Ci/kg WET						
Type of Analyses	Number of Analyses Performed	Lower Limit of Detection ^a (LLD)	<u>All Indicator Locations</u> <u>Mean (f)^b</u> Range	<u>Location with Highest Annual Mean</u> <u>Name^c</u> Distance & Direction	<u>Mean (f)^b</u> Range	<u>Control Locations</u> <u>Mean (f)^b</u> Range
Gamma Isotopic	36					
⁷ Be		64	1359 (24 / 24) 536 - 2690	H51 1 mi., N/NNW	1469 (12 / 12) 812 - 2690	1466 (12 / 12) 782 - 3740
⁴⁰ K		120	4329 (24 / 24) 2410 - 6360	H52 1 mi., S/SSE	3912 (12 / 12) 2410 - 6360	3238 (12 / 12) 2370 - 4170
¹³¹ I		8	<MDA (0 / 24)	-----	<MDA (0 / 12)	<MDA (0 / 12)
¹³⁴ Cs		8	<MDA (0 / 24)	-----	<MDA (0 / 12)	<MDA (0 / 12)
¹³⁷ Cs		8	<MDA (0 / 24)	-----	<MDA (0 / 12)	<MDA (0 / 12)
²¹⁰ Pb		693	652 (3 / 24) 522 - 830	H52 1 mi., S/SSE	652 (3 / 12) 522 - 830	351 (2 / 12) 161 - 541
²¹² Pb		19	34 (1 / 24) <MDA - 34	H51 1 mi., N/NNW	34 (1 / 12) <MDA - 34	<MDA (0 / 12)
²²⁶ Ra		189	202 (1 / 24) <MDA - 202	H51 1 mi., N/NNW	202 (1 / 12) <MDA - 202	<MDA (0 / 12)
²²⁸ Ra		29	<MDA (0 / 24)	-----	<MDA (0 / 12)	<MDA (0 / 12)
Be-7, K-40, Pb-210, Pb-212, Ra-226, and Ra-228 are naturally occurring. Number of Non-Routine Reported Measurements = 0.						

NOTES

- a. The LLD is an "a priori" value 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.

Minimum Detectable Activity (MDA) reported in the Quarterly Reports (Section 9) for the individual samples have been corrected to the time of sample collection.

- b. Mean and Range are based upon detectable measurements only. The fraction of detectable measurements at specified locations is indicated in parentheses (f).
- c. Specific identifying information for each sample location is provided in Section 7.
- d. Results were based upon the average net response of three elements in a TLD.

VI. Land Use Census

The PSL Annual Land Use Census Survey was performed during the months of June - October 2023. No locations with a garden or with potential milk-producing animals (cows or goats) were identified within a 5-mile radius of the St. Lucie Plant.

2023 St. Lucie Land Use Census: Distance to Nearest Location ^{a, b}			
Sector	Residence	Garden ^d	Milk Animal ^c
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	(A) 1.5 / 142° (B) 1.6 / 145°	O	O
SSE	(A) 1.8 / 147° ^g (B) 2.0 / 149°	L ^f	L
S	3.3 / 190°	L	L
SSW	2.2 / 212°	L	L
SW	1.9 / 234°	L	L
WSW	1.9 / 240°	L	L
W	1.9 / 260°	L	L
WNW	2.3 / 281°	L	L
NW	3.4 / 304°	L	L
NNW	(A) 2.7 / 344° (B) 2.8 / 343°	L	L

NOTES

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

b. The format used to denote location is:

distance (miles) / bearing (degrees).

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

c. Potential milk animal locations.

d. Only gardens with an estimated total area of 500 square feet or more and producing green leafy vegetables are considered.

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

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

g. Non-residential occupied buildings in this sector include:

<u>Sector</u>	<u>Distance</u>	<u>Description</u>
SSE (A)	1.8 / 147°	Fire Station

5. **Deviations / Missing Data**

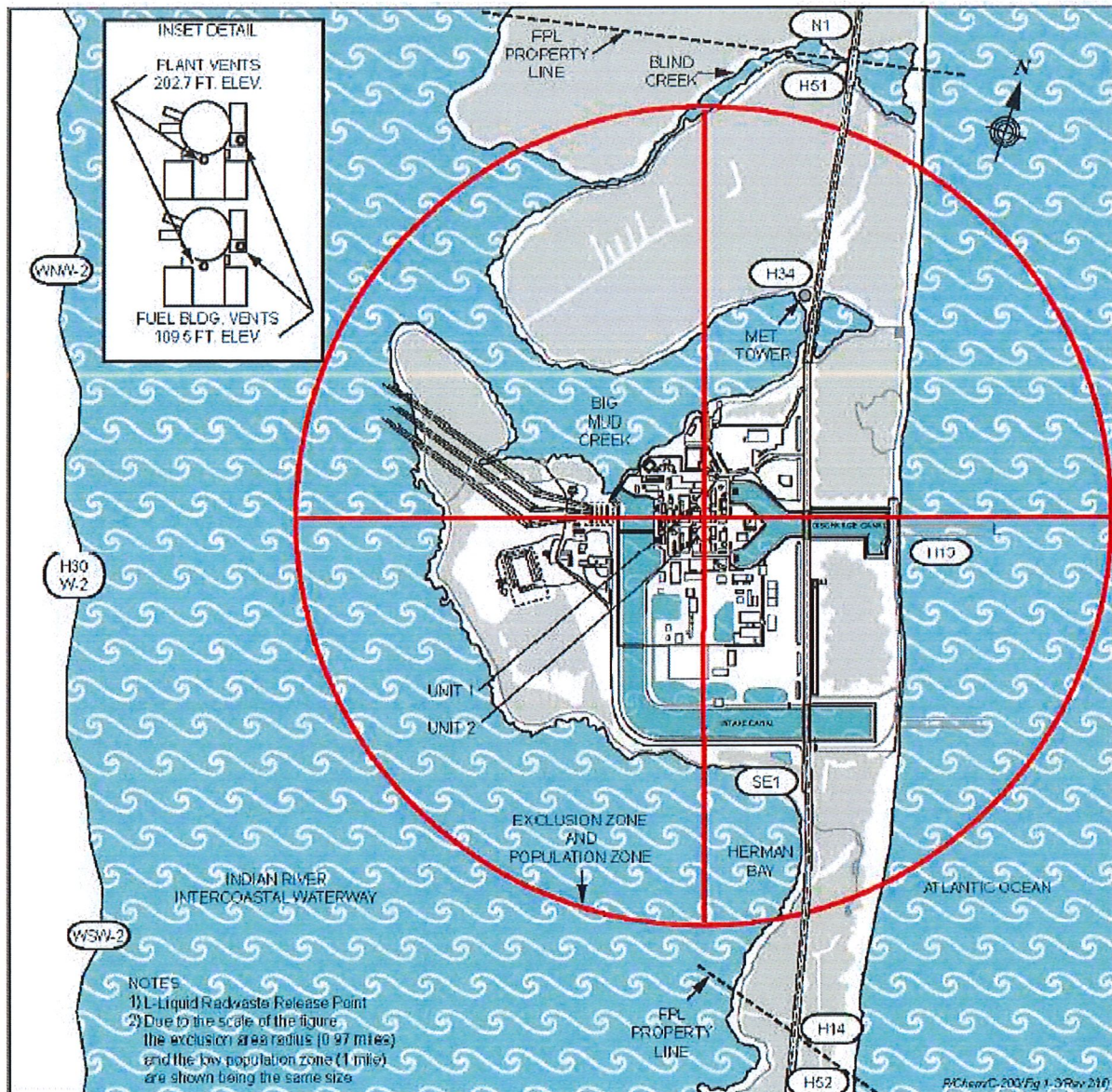
There were no deviations or missing data for the monitored period of 2024.

6. **Analyses with LLDs Above Required Detection Capabilities**

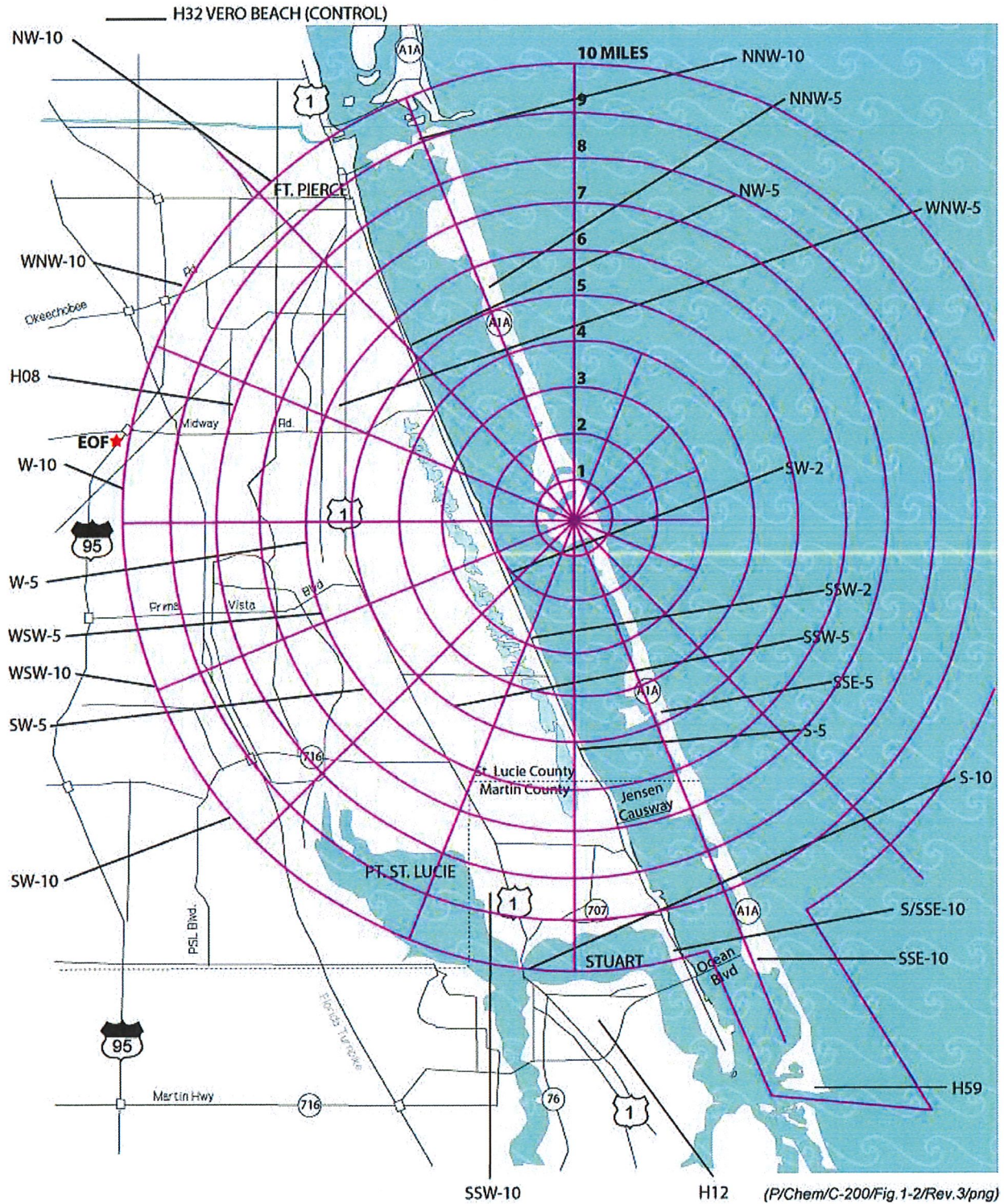
The values specified in ODCM Table 4.12-1 Detection Capabilities For Environmental Sample Analysis were achieved for all samples. REMP sampling deviations and missing data are listed in Section 5.

7. Key to Sample Locations

Site Area Map & Environmental Sample Locations



Environmental Sample Locations (10 Miles)



PATHWAY: Direct Radiation

SAMPLES COLLECTED: TLD

SAMPLE FREQUENCY: Quarterly

Location Name	Direction Sector	Approximate Distance (Miles)	Description
N-1	N	1	North of Blind Creek (A1A)
NNW-5	NNW	4.8	Frederick Douglas Beach Entrance
NNW-10	NNW	8.7	Coast Guard Station
NW-5	NW	5.4	Indian River Drive at Rio Vista Drive
NW-10	NW	9.6	Intersection of SR 68 and 33rd St (FPL Facility)
WNW-2	WNW	2.3	Cemetery South of 7107 Indian River Drive
WNW-5	WNW	5.1	US-1 at SR 712
WNW-10	WNW	10	SR 70, Just West of I-95
W-2	W	2	Power Line - 77609 Indian River Drive
W-5	W	5.4	Oleander and Sager Streets
W-10	W	10.3	I-95 and SR 709
WSW-2	WSW	1.8	8503 Indian River Drive
WSW-5	WSW	5.6	Prima Vista Blvd. at Yacht Club
WSW-10	WSW	10	Del Rio and Davis Streets
SW-2	SW	2	9205 Indian River Drive
SW-5	SW	4.5	FPL Walton Service Center
SW-10	SW	10.2	Port St. Lucie Blvd. and Cairo Road
SSW-2	SSW	2.6	10307 Indian River Drive
SSW-5	SSW	6	Port St. Lucie Blvd. and US-1
SSW-10	SSW	8	Pine Valley and Westmoreland Roads
S-5	S	5.2	13189 Indian River Drive
S-10	S	10.8	US 1 and Palm City Ave
S/SSE-10	SSE	9.9	Indian River Drive and 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
H32 (Control)	NNW	18.1	U. of Florida - IFAS Entomology Lab Vero Beach

PATHWAY: Airborne

SAMPLES COLLECTED: Radioiodine and Particulates

SAMPLE FREQUENCY: Weekly

Location Name	Direction Sector	Approximate Distance (Miles)	Description
H08	WNW	6	FPL Substation – Weatherbee Road
H14	SE	1	On-Site - Near South Property Line
H30	W	2	Power Line - 7609 Indian River Drive
H34	N	0.5	On-Site - At Meteorological Tower
H12 (Control)	S	12	FPL Substation, SR-76 Stuart

PATHWAY: Waterborne

SAMPLES COLLECTED: Surface Water (Ocean)

SAMPLE FREQUENCY: H-15 Weekly; H-59 Monthly

Location Name	Direction Sector	Approximate Distance (Miles)	Description
H15	ENE/E/ESE	<1	Atlantic Ocean Public Beaches, East Side A1A
H59 (Control)	S/SSE	10-20	Near South End of Hutchinson Island

SAMPLES COLLECTED: Shoreline Sediment

SAMPLE FREQUENCY: Semi-Annually

Location Name	Direction Sector	Approximate Distance (Miles)	Description
H15	ENE/E/ESE	<1	Atlantic Ocean Public Beaches, East Side A1A
H59 (Control)	S/SSE	10-20	Near South End of Hutchinson Island

PATHWAY: Ingestion – Food Products

SAMPLES COLLECTED: Crustacea and Fish

SAMPLE FREQUENCY: Semi-Annually

Location Name	Direction Sector	Approximate Distance (Miles)	Description
H15	ENE/E/ESE	<1	Ocean Side, Vicinity of St. Lucie Plant
H59 (Control)	S/SSE	10-20	Near South End of Hutchinson Island

SAMPLES COLLECTED: Broad Leaf Vegetation – Food Products

SAMPLE FREQUENCY: Monthly

Location Name	Direction Sector	Approximate Distance (Miles)	Description
H51	N/NNW	1	Off-Site Near North Property Line
H52	S/SSE	1	Off-Site Near South Property Line
H59 (Control)	S/SSE	10-20	Near South End of Hutchinson Island

8. Ground Water Protection – Industry Initiative

A. Description of Program

Quarterly ground water sampling was performed by the State of Florida Department of Health (DOH), Bureau of Radiation Control (BRC), pursuant to an agreement between FPL and the DOH as part of the ODCM REMP sampling program. Samples were analyzed for tritium and principal gamma emitters. Tritium was the only fission product identified. Naturally occurring potassium (K-40) was identified occasionally.

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 10 wells are on the outside perimeter of PSL's Protected Area. The two locations with the St. Lucie Plant ID ending in "S" (H70 and H73) are shallower wells adjacent (within a few feet) to a deeper well at the same location.

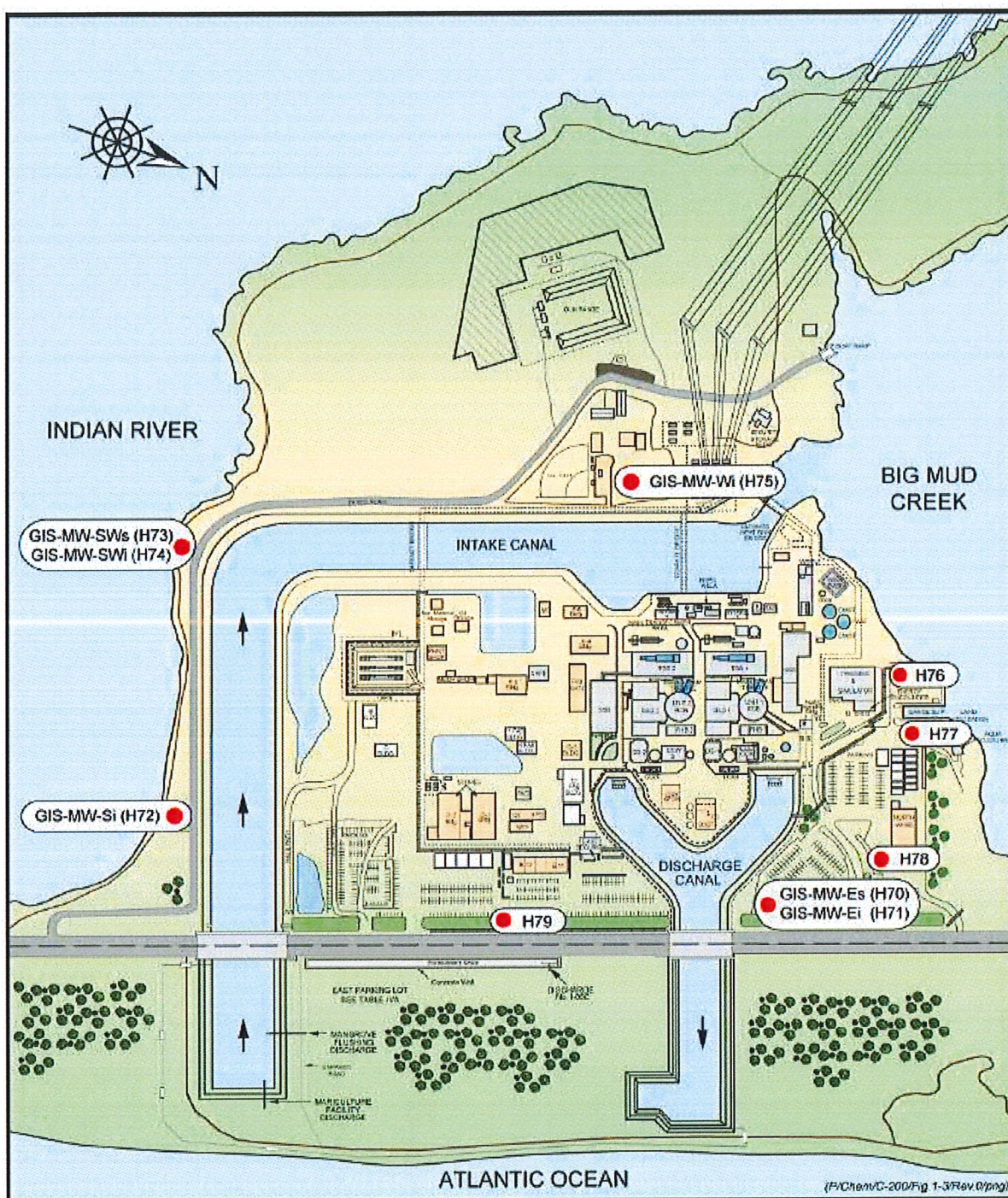
State ID	St. Lucie Plant ID	Location Description
H70	GIS-MW-ES	West of A1A; Between the Discharge Canal and Gate "B"
H71	GIS-MW-EI	West of A1A; Between the Discharge Canal and Gate "B"
H72	GIS-MW-SI	South of Intake Canal and the adjacent access road
H73	GIS-MW-SWS	S/W corner of Intake Canal and the adjacent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

B. St. Lucie 2024 Tritium Results⁽¹⁾ Summary (pCi/L)

State ID	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
H70	<133	<135	<137	<142
H71	414	530	350	394
H72	<137	<136	<137	<143
H73	<135	<135	<137	<139
H74	<135	<135	<138	<143
H75	<137	<135	<137	<139
H76	<135	<136	<137	<139
H77	<135	<135	<137	<139
H78	<135	<136	<137	<139
H79	135	<135	<137	<143

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

C. Map of Groundwater Water Protection – Industry Initiative Wells



9. Radiological Surveillance of Florida Power & Light Company - St. Lucie Site

- A. First Quarter 2024
- B. Second Quarter 2024
- C. Third Quarter 2024
- D. Fourth Quarter 2024



RADIOLOGICAL SURVEILLANCE
OF
FLORIDA POWER AND LIGHT COMPANY

ST. LUCIE PLANT

FIRST QUARTER 2024

BUREAU OF RADIATION CONTROL

ST. LUCIE SITE

Offsite Dose Calculation Manual Sampling

First Quarter, 2024

Sample Type	Collection Frequency	Number of Sample Locations	Number of Samples
1. Direct Radiation	Quarterly	27	27
2. Airborne			
2.a. Air Iodines	Weekly	5	63
2.b. Air Particulates	Weekly	5	63
3. Waterborne			
3.a. Surface Water	Weekly	1	13
	Monthly	1	3
3.b. Shoreline Sediment	Semiannually	2	2
4. Ingestion			
4.a. Fish and Invertebrates			
4.a.1. Crustacea	Semiannually	2	1
4.a.2. Fish	Semiannually	2	2
4.b. Broadleaf Vegetation	Monthly	3	9

Total: 178

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 - DEPLOYED TLD's - ($\mu\text{R}/\text{hour}$)

Sample Site	Deployment 20-Dec-23 Collection 25-Mar-24
N-1	2.79 ± 0.1
NNW-5	2.74 ± 0.4
NNW-10	3.36 ± 0.2
NW-5	2.65 ± 0.2
NW-10	3.89 ± 0.3
WNW-2	2.68 ± 0.4
WNW-5	3.08 ± 0.2
WNW-10	2.77 ± 0.3
W-2	2.64 ± 0.4
W-5	3.20 ± 0.2
W-10	2.46 ± 0.3
WSW-2	3.01 ± 0.1
WSW-5	3.08 ± 0.3
WSW-10	3.15 ± 0.2
SW-2	2.73 ± 0.1
SW-5	3.41 ± 0.1
SW-10	2.94 ± 0.3
SSW-2	2.66 ± 0.3
SSW-5	3.12 ± 0.2
SSW-10	2.59 ± 0.4
S-5	2.73 ± 0.4
S-10	3.09 ± 0.3
S/SSE-10	3.35 ± 0.3
SSE-5	2.93 ± 0.2
SSE-10	3.27 ± 0.2
SE-1	2.66 ± 0.4
H-32	3.34 ± 0.1

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

Collection <u>Date</u>	H08	H12	H14	H30	H34
03-Jan-24	< 0.04	< 0.01	< 0.04	< 0.02	< 0.02
09-Jan-24	< 0.01	< 0.04	< 0.02	< 0.02	< 0.02
17-Jan-24	< 0.02	< 0.01	< 0.02	< 0.02	< 0.02
24-Jan-24	< 0.01	< 0.01	< 0.02	< 0.01	< 0.01
31-Jan-24	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
07-Feb-24	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
12-Feb-24	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
21-Feb-24	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
27-Feb-24	< 0.02	< 0.01	< 0.01	< 0.02	< 0.01
05-Mar-24	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
11-Mar-24	< 0.03	< 0.02	< 0.03	< 0.03	< 0.03
18-Mar-24	< 0.03	< 0.02	< 0.02	< 0.03	< 0.02
26-Mar-24	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

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

Collection Date	H08	H12	H14	H30	H34
03-Jan-24	0.018 ± 0.002	0.026 ± 0.003	0.027 ± 0.003	0.024 ± 0.003	0.026 ± 0.003
09-Jan-24	0.027 ± 0.003	0.026 ± 0.002	0.026 ± 0.003	0.024 ± 0.003	0.026 ± 0.003
17-Jan-24	0.016 ± 0.002	0.015 ± 0.002	0.016 ± 0.002	0.011 ± 0.002	0.017 ± 0.002
24-Jan-24	0.020 ± 0.002	0.020 ± 0.002	0.019 ± 0.002	0.018 ± 0.002	0.015 ± 0.002
31-Jan-24	0.009 ± 0.002	0.005 ± 0.001	0.007 ± 0.002	0.006 ± 0.002	0.010 ± 0.002
07-Feb-24	0.013 ± 0.002	0.011 ± 0.002	0.015 ± 0.002	0.014 ± 0.002	0.013 ± 0.002
12-Feb-24	0.011 ± 0.002	0.007 ± 0.002	0.009 ± 0.002	0.006 ± 0.002	0.010 ± 0.002
21-Feb-24	0.014 ± 0.002	0.014 ± 0.002	0.013 ± 0.002	0.012 ± 0.002	0.011 ± 0.001
27-Feb-24	0.019 ± 0.002	0.019 ± 0.002	0.017 ± 0.002	0.013 ± 0.002	0.018 ± 0.002
05-Mar-24	0.016 ± 0.002	0.019 ± 0.002	0.018 ± 0.002	0.019 ± 0.002	0.013 ± 0.002
11-Mar-24	0.011 ± 0.002	0.008 ± 0.002	0.013 ± 0.002	0.009 ± 0.002	0.015 ± 0.002
18-Mar-24	0.020 ± 0.002	0.026 ± 0.002	0.018 ± 0.002	0.017 ± 0.002	0.023 ± 0.002
26-Mar-24	0.016 ± 0.002	0.012 ± 0.002	0.013 ± 0.002	0.014 ± 0.002	0.011 ± 0.002
Average:	0.016 ± 0.001	0.016 ± 0.001	0.016 ± 0.001	0.014 ± 0.001	0.016 ± 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
08	0.1210 ± 0.0090	< 0.0141	< 0.0011	< 0.0008	<0.0155
12	0.1030 ± 0.0086	< 0.0152	< 0.0006	< 0.0009	<0.0299
14	0.1260 ± 0.0092	< 0.0128	< 0.0011	< 0.0011	0.0116 ± 0.0029
30	0.1180 ± 0.0095	< 0.0183	< 0.0008	< 0.0009	<0.0334
34	0.1240 ± 0.0093	< 0.0142	< 0.0007	< 0.0008	<0.0322

3.a. SURFACE WATER - (pCi/L)

Sample	Collection	H-3	K-40	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Zr-95	I-131	Cs-134	Cs-137	Ba-140
H15	03-Jan-24	<137	330 ± 26	<3	<6	<16	<4	<9	<11	<293	<3	<4	<54
	17-Jan-24	<133	361 ± 36	<5	<6	<14	<5	<13	<9	<11	<6	<5	<9
	24-Jan-24	<135	366 ± 31	<4	<4	<9	<4	<9	<7	<5	<4	<4	<12
	31-Jan-24	<135	316 ± 26	<4	<3	<8	<4	<9	<6	<7	<3	<3	<4
	07-Feb-24	<134	358 ± 43	<5	<6	<12	<7	<13	<11	<8	<5	<6	<17
	12-Feb-24	<135	390 ± 39	<5	<5	<12	<5	<10	<10	<10	<5	<5	<10
	21-Feb-24	<134	367 ± 39	<5	<5	<13	<5	<12	<9	<10	<5	<5	<8
	27-Feb-24	<134	397 ± 30	<4	<4	<7	<4	<8	<6	<4	<4	<4	<4
	11-Mar-24	<137	344 ± 27	<3	<4	<9	<4	<7	<6	<7	<4	<4	<5
	18-Mar-24	<136	391 ± 33	<4	<5	<9	<4	<9	<8	<6	<4	<4	<6
	26-Mar-24	<136	297 ± 26	<4	<4	<9	<4	<8	<7	<13	<3	<3	<8
	09-Jan-24	<134	340 ± 31	<4	<5	<10	<5	<8	<8	<15	<4	<4	<9
	05-Feb-24	<135	184 ± 17	<2	<2	<5	<3	<6	<4	<3	<2	<2	<3
	05-Mar-24	<134	369 ± 32	<4	<4	<9	<4	<9	<7	<6	<4	<4	<9
H59	09-Jan-24	<134	340 ± 31	<4	<5	<10	<5	<8	<8	<15	<4	<4	<9
	05-Feb-24	<135	184 ± 17	<2	<2	<5	<3	<6	<4	<3	<2	<2	<3
	05-Mar-24	<134	369 ± 32	<4	<4	<9	<4	<9	<7	<6	<4	<4	<9

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

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

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

Sample Site	Collection Date	Be-7	K-40	Co-58	Co-60	Cs-134	Cs-137	Pb-210	Ra-226	Th-232	U-235	U-238
H15	28-Feb-24	<76	129 ± 37	<7	<9	<7	<14	<14	<6	<9	<17	<8
H59	28-Feb-24	<69	75 ± 24	<7	<7	<6	<13	<11	<6	<9	<17	<6

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
H59		Samples to be collected at a later time									
H15	24-Jan-24	<2270 ± 200	<27	<29	<50	<31	<65	<30	<29	<498	<131

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	23-Feb-24	3300 ± 210	<17	<20	<47	<22	<45	<19	<24	<338	<83
H59	29-Feb-24	3630 ± 227	<21	<15	<42	<23	<51	<18	<21	<399	<80

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

Sample Site	Collection Date	Be-7	K-40	I-131	Cs-134	Cs-137	Pb-210	Pb-212	Ra-226	Ra-228
H51	09-Jan-24	2690 ± 142	4060 ± 218	<19	<13	<18	<1040	<35	<441	<74
	05-Feb-24	1800 ± 109	4300 ± 209	<53	<11	<13	<1170	<31	<349	<56
	05-Mar-24	1820 ± 101	5020 ± 220	<27	<11	<13	<903	<25	202 ± 92	<57
H52	09-Jan-24	2130 ± 186	4110 ± 188	<14	<11	<13	603 ± 206	<27	<298	<47
	05-Feb-24	1960 ± 174	2410 ± 125	<44	<10	<10	830 ± 237	<23	<256	<41
	05-Mar-24	1450 ± 133	3130 ± 150	<24	<10	<11	522 ± 193	<21	<256	<41
H59	09-Jan-24	2100 ± 114	2370 ± 148	<16	<11	<16	<886	<32	<375	<55
	05-Feb-24	2060 ± 71	2680 ± 115	<29	<6	<5	161 ± 30	<16	<187	<29
	05-Mar-24	782 ± 81	4170 ± 192	<23	<12	<13	541 ± 207	<25	<273	<52

ST. LUCIE SITE

Supplemental

Sampling First Quarter,

Sample Type	2024 Collection Frequency	Number of Sample Locations	Number of Samples
1. Direct Radiation	Quarterly	9	9
2. Airborne			
2.a. Air Iodines	Weekly	3	39
2.b. Air Particulates	Weekly	3	39
3. Waterborne			
3.a. Surface Water	Monthly	2	6
3.b. Shoreline Sediment	Semiannually	4	0
3.c. Beach Sand	Semiannually	3	0
3.d. Ground Water	Quarterly	10	0
4. Ingestion			
4.a. Garden Crop	Annually	1	0
4.b. Citrus	Annually	1	1

Total: 66

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 - DEPLOYED TLD's - ($\mu\text{R}/\text{hour}$)

Sample Site	Deployment 20-Dec-23 Collection 25-Mar-24
H08	6.81 ± 0.1
H09	3.14 ± 0.2
H12	2.98 ± 0.4
H14	3.04 ± 0.3
H33	3.06 ± 0.2
H34	3.01 ± 0.2
H60	3.87 ± 0.4
H61	3.37 ± 0.5
H62	6.81 ± 0.1

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

Collection Date	H09	H32	H33
03-Jan-24	< 0.04	< 0.01	< 0.04
09-Jan-24	< 0.02	< 0.01	< 0.04
17-Jan-24	< 0.02	< 0.01	< 0.02
24-Jan-24	< 0.02	< 0.01	< 0.01
31-Jan-24	< 0.01	< 0.01	< 0.01
07-Feb-24	< 0.01	< 0.01	< 0.01
12-Feb-24	< 0.02	< 0.02	< 0.02
21-Feb-24	< 0.02	< 0.02	< 0.02
27-Feb-24	< 0.03	< 0.01	< 0.01
05-Mar-24	(A)	< 0.01	< 0.01
11-Mar-24	(A)	< 0.02	< 0.02
18-Mar-24	< 0.02	< 0.02	< 0.02
26-Mar-24	< 0.01	< 0.01	< 0.01

(A) Sample not collected due to pump malfunction. Pump was replaced and system calibrated to 61.8CFH.

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

Collection Date	H09	H32	H33
03-Jan-24	0.022 ± 0.002	0.023 ± 0.002	0.015 ± 0.002
09-Jan-24	0.021 ± 0.002	0.023 ± 0.002	0.019 ± 0.002
17-Jan-24	0.021 ± 0.002	0.016 ± 0.002	0.012 ± 0.002
24-Jan-24	0.018 ± 0.002	0.019 ± 0.002	0.016 ± 0.002
31-Jan-24	0.006 ± 0.002	0.007 ± 0.002	0.004 ± 0.001
07-Feb-24	0.008 ± 0.002	0.010 ± 0.002	0.012 ± 0.002
12-Feb-24	0.006 ± 0.002	0.007 ± 0.002	0.010 ± 0.002
21-Feb-24	0.011 ± 0.001	0.014 ± 0.002	0.015 ± 0.002
27-Feb-24	0.016 ± 0.004	0.016 ± 0.002	0.018 ± 0.002
05-Mar-24	(A)	0.019 ± 0.002	0.022 ± 0.002
11-Mar-24	(A)	0.012 ± 0.002	0.011 ± 0.002
18-Mar-24	0.018 ± 0.002	0.024 ± 0.002	0.023 ± 0.002
26-Mar-24	0.013 ± 0.002	0.014 ± 0.002	0.014 ± 0.002
Average:	0.016 ± 0.001	0.015 ± 0.001	0.016 ± 0.001

(A) Sample not collected due to pump malfunction. Pump was replaced and system calibrated to 61.8CFH.

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

Sample Site	Be-7	K-40	Cs-134	Cs-137	Pb-210
H09	0.1650 ± 0.0122	<0.0196	<0.0259	<0.0012	<0.0015
H32	0.1410 ± 0.0112	<0.0199	<0.0206	<0.0010	<0.0012
H33	0.1300 ± 0.0092	<0.0131	<0.0126	<0.0010	<0.0013

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)
H13	09-Jan-24	<134	329 ± 36	<6	<5	<12	<5	<13	<12	<17	<5	<6	<14
	05-Feb-24	<135	267 ± 34	<6	<8	<17	<6	<13	<14	<110	<5	<6	<45
	05-Mar-24	<134	361 ± 38	<5	<5	<13	<6	<11	<9	<8	<5	<6	<8
H36	09-Jan-24	<134	314 ± 29	<4	<5	<10	<4	<9	<7	<10	<4	<4	<7
	05-Feb-24	<136	384 ± 28	<3	<3	<7	<4	<7	<6	<5	<3	<4	<5
	05-Mar-24	7872 ± 130 (C)	384 ± 29	<4	<4	<7	<4	<9	<6	<5	<4	<4	<4

(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.

(C)- Sample was taken during release

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

Sample Site	Collection Date	Be-7	K-40	Co-58	Co-60	Cs-134	Cs-137	Pb-210	Ra-226	Th-232	U-235	U-238
H13	28-Feb-24	13	<90	<728	<64	<11	<8	<9	<9	<773	75 ± 12	<332
H16	28-Feb-24	16	<69	<100	<24	<7	<6	<7	<7	<226	<29	<199
H19	28-Feb-24	19	<66	<100	<26	<7	<6	<8	<7	<227	<30	<210
H36	28-Feb-24	36	717 ± 81	<6120	<280	<28	<21	<19	38 ± 5	6000 ± 1480	101 ± 22	901 ± 196

3.c. BEACH SAND - (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-235</u>	<u>U-238</u>
H15	28-Feb-24	67 ± 16	<98	<6	<6	<7	<7	<244	<168	<47	<11	<100
H16	28-Feb-24	<105	176 ± 36	<9	<7	<8	<9	<961	<296	<51	<19	<166
H19	28-Feb-24	<158	256 ± 56	<17	<14	<14	<15	<1400	1040 ± 153	225 ± 26	65 ± 10	432 ± 59

3.d. GROUND 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)
H70	26-Jan-24	<133	<82	<5	<6	<13	<5	<13	<10	<15	<6	<6	<11
H71	26-Jan-24	414 ± 50	365 ± 27	<3	<4	<9	<4	<8	<7	<8	<4	<3	<6
H72	26-Jan-24	<137	364 ± 38	<5	<5	<15	<6	<14	<11	<18	<5	<6	<11
H73	26-Jan-24	<135	82 ± 17	<4	<4	<9	<3	<9	<7	<12	<4	<4	<7
H74	26-Jan-24	<135	300 ± 29	<4	<5	<10	<4	<10	<8	<11	<5	<5	<7
H75	26-Jan-24	<137	317 ± 26	<3	<4	<8	<4	<9	<6	<12	<3	<3	<6
H76	26-Jan-24	<135	<40	<3	<3	<7	<3	<8	<6	<9	<3	<4	<6
H77	26-Jan-24	<135	<41	<3	<4	<9	<3	<8	<6	<10	<3	<4	<4
H78	26-Jan-24	<135	<45	<3	<4	<8	<4	<7	<6	<10	<3	<3	<7
H79	26-Jan-24	135	28 ± 14	<4	<5	<11	<4	<9	<8	<12	<4	<5	<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 La140, whichever method yields the greater sensitivity for a given sample.

4.a. GARDEN CROP - (pCi/kg, wet weight)

Sample Site	Collection Date	Be-7	K-40	I-131	Cs-134	Cs-137
H41	This sample has not been available.					

4.b. CITRUS - (pCi/kg, wet weight)

Sample Site	Collection Date	Be-7	K-40	I-131	Cs-134	Cs-137
H23		Sample to be collected at a later time				

14 of 14



RADIOLOGICAL SURVEILLANCE

OF

FLORIDA POWER AND LIGHT COMPANY

ST. LUCIE PLANT

SECOND QUARTER 2024

BUREAU OF RADIATION CONTROL

ST. LUCIE SITE

Offsite Dose Calculation Manual Sampling Second Quarter, 2024

Sample Type	Collection Frequency	Number of Sample Locations	Number of Samples
1. Direct Radiation	Quarterly	27	27
2. Airborne			
2.a. Air Iodines	Weekly	5	65
2.b. Air Particulates	Weekly	5	65
3. Waterborne			
3.a. Surface Water	Weekly	1	13
	Monthly	1	3
3.b. Shoreline Sediment	Semiannually	2	2
4. Ingestion			
4.a. Fish and Invertebrates			
4.a.1. Crustacea	Semiannually	2	1
4.a.2. Fish	Semiannually	2	0
4.b. Broadleaf Vegetation	Monthly	3	9

Total: 184

NOTE: Measurement results having magnitudes that are significantly above the background of the measurement system are reported as net values plus or minus a one-standard-deviation error term. Measurement results that are not significantly above background are reported as less than a Lower Limit of Detection (<LLD), which is an estimated upper limit (with at least 95% confidence) for the true activity in the sample.

The marine fauna listed in this report were collected in part, under Florida FWC SAL030.

1. DIRECT RADIATION - DEPLOYED TLD's - ($\mu\text{R}/\text{hour}$)

Sample Site	Deployment 25-Mar-24 Collection 10-June-24	Sample Site	Deployment 25-Mar-24 Collection 10-June-24
N-1	3.1 ± 0.4	SW-2	3.1 ± 0.2
NNW-5	3.5 ± 0.6	SW-5	4.1 ± 0.3
NNW-10	4.2 ± 0.5	SW-10	3.5 ± 0.4
NW-5	3.2 ± 0.5	SSW-2	3.2 ± 0.2
NW-10	4.3 ± 0.6	SSW-5	4.4 ± 0.4
WNW-2	3.5 ± 0.4	SSW-10	3.1 ± 0.3
WNW-5	3.5 ± 0.3	S-5	3.4 ± 0.4
WNW-10	3.3 ± 0.6	S-10	3.9 ± 0.4
W-2	3.2 ± 0.3	S/SSE-10	3.8 ± 0.2
W-5	3.8 ± 0.2	SSE-5	3.1 ± 0.3
W-10	2.7 ± 0.2	SSE-10	3.8 ± 0.3
WSW-2	3.4 ± 0.3	SE-1	3.1 ± 0.1
WSW-5	3.6 ± 0.3	H-32	3.6 ± 0.2
WSW-10	3.9 ± 0.2		

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

Collection Date	H08	H12	H14	H30	H34
01-Apr-24	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
09-Apr-24	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
16-Apr-24	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
23-Apr-24	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
30-Apr-24	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
06-May-24	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
14-May-24	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
21-May-24	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
28-May-24	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
05-Jun-24	< 0.02	< 0.02	< 0.05	< 0.02	< 0.02
11-Jun-24	< 0.02	< 0.02	< 0.07	< 0.02	< 0.02
18-Jun-24	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
26-Jun-24	< 0.02	< 0.02	< 0.01	< 0.02	< 0.02

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

Collection Date	H08	H12	H14	H30	H34
01-Apr-24	0.018 ± 0.002	0.025 ± 0.003	0.018 ± 0.002	0.020 ± 0.002	0.018 ± 0.002
09-Apr-24	0.017 ± 0.002	0.022 ± 0.002	0.016 ± 0.002	0.014 ± 0.002	0.014 ± 0.002
16-Apr-24	0.017 ± 0.002	0.014 ± 0.002	0.019 ± 0.002	0.018 ± 0.002	0.011 ± 0.002
23-Apr-24	0.017 ± 0.002	0.016 ± 0.002	0.019 ± 0.002	0.018 ± 0.002	0.015 ± 0.002
30-Apr-24	0.020 ± 0.002	0.015 ± 0.002	0.021 ± 0.002	0.021 ± 0.002	0.015 ± 0.002
06-May-24	0.012 ± 0.002	0.015 ± 0.002	0.013 ± 0.002	0.017 ± 0.002	0.015 ± 0.002
14-May-24	0.012 ± 0.002	0.016 ± 0.002	0.018 ± 0.002	0.015 ± 0.002	0.014 ± 0.002
21-May-24	0.018 ± 0.002	0.020 ± 0.002	0.019 ± 0.002	0.018 ± 0.002	0.017 ± 0.002
28-May-24	0.014 ± 0.002	0.014 ± 0.002	0.016 ± 0.002	0.014 ± 0.002	0.017 ± 0.002
05-Jun-24	0.018 ± 0.002	0.019 ± 0.002	0.021 ± 0.004	0.018 ± 0.002	0.004 ± 0.001
11-Jun-24	0.011 ± 0.002	0.011 ± 0.002	0.013 ± 0.004	0.015 ± 0.002	0.013 ± 0.002
18-Jun-24	0.014 ± 0.002	0.011 ± 0.002	0.013 ± 0.002	0.012 ± 0.002	0.018 ± 0.002
26-Jun-24	0.007 ± 0.001	0.008 ± 0.001	0.005 ± 0.001	0.008 ± 0.001	0.014 ± 0.002
Average	0.015 ± 0.001	0.016 ± 0.001	0.016 ± 0.001	0.016 ± 0.001	0.016 ± 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	0.1180 ± 0.0098	< 0.0180	< 0.0233	< 0.0010	< 0.0011
H12	0.0978 ± 0.0090	< 0.0163	< 0.0164	< 0.0008	< 0.0010
H14	0.1130 ± 0.0100	< 0.0180	< 0.0249	< 0.0011	< 0.0012
H30	0.1000 ± 0.0085	< 0.0136	< 0.0162	< 0.0009	< 0.0009
H34	0.0770 ± 0.0078	< 0.0155	< 0.0125	< 0.0009	< 0.0009

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-Apr-24	<136	355 ± 31	<60	<4	<4	<10	<4	<11	<7	<10	<4	<4
	09-Apr-24	<138	374 ± 28	<37	<4	<4	<9	<3	<9	<7	<14	<4	<3
	16-Apr-24	<138	338 ± 32	<64	<4	<4	<8	<4	<10	<7	<8	<4	<5
	23-Apr-24	<137	360 ± 31	<57	<4	<4	<9	<5	<9	<7	<5	<4	<5
	30-Apr-24	<136	342 ± 26	<38	<3	<3	<7	<3	<8	<6	<4	<4	<4
	06-May-24	<132	401 ± 38	<31	<5	<5	<13	<6	<13	<9	<10	<4	<6
	14-May-24	<132	365 ± 27	<37	<3	<3	<6	<3	<8	<6	<4	<3	<3
	21-May-24	<132	400 ± 29	<38	<4	<3	<7	<4	<9	<5	<5	<4	<4
	28-May-24	<135	351 ± 38	<60	<5	<5	<10	<6	<10	<10	<7	<5	<6
	5-Jun-24	<135	293 ± 25	<43	<4	<4	<7	<4	<8	<6	<4	<3	<4
	11-Jun-24	<133	344 ± 30	<53	<4	<4	<8	<4	<9	<7	<6	<4	<4
	18-Jun-24	<135	364 ± 32	<63	<5	<5	<11	<4	<9	<8	<16	<4	<4
	26-Jun-24	<136	304 ± 29	<57	<5	<4	<11	<5	<10	<7	<8	<4	<5
H59	01-Apr-24	<135	428 ± 40	<49	<4	<6	<11	<6	<13	<8	<6	<5	<5
	6-May-24	<136	355 ± 31	<60	<4	<4	<10	<4	<11	<7	<10	<4	<4
	5-Jun-24	<138	374 ± 28	<37	<4	<4	<9	<3	<9	<7	<14	<4	<3

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

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

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

Sample Site	Collection Date	Be-7	K-40	Co-58	Co-60	Cs-134	Cs-137	Pb-210	Ra-226	Th-232	U-235	U-238
H15				These samples were previously collected								
H59												

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

Sample Site	Collection Date	K-40	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Cs-134	Cs-137	Ra-226	Ra-228
H15				This samples were previously collected							
H59	03-Apr-24	1560 ± 157	<31	<34	<76	<25	<61	<29	<27	<509	<107

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			These samples previously collected								
H59											

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

Sample Site	Collection Date	<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	04-Apr-24	1380 ± 101	4720 ± 228	<128	<15	<14	<1170	<29	<372	<66
	01-May-24	1390 ± 86	4220 ± 200	<23	<11	<14	<966	<27	<310	<65
	19-Jun-24	1030 ± 99	5150 ± 227	<14	<12	<13	<1120	34 ± 14	<302	<56
H52	04-Apr-24	964 ± 101	4040 ± 189	<106	<11	<10	<791	<26	<282	<48
	01-May-24	730 ± 73	3800 ± 170	<19	<10	<11	<859	<20	<250	<42
	19-Jun-24	742 ± 77	3600 ± 179	<14	<13	<15	<949	<27	<296	<56
H59	04-Apr-24	910 ± 79	3140 ± 168	<128	<11	<14	<795	<26	<321	<54
	01-May-24	1360 ± 95	2950 ± 176	<34	<12	<16	<996	<35	<464	<63
	19-Jun-24	879 ± 44	3420 ± 144	<9	<8	<9	<101	<19	<200	<34

ST. LUCIE SITE

Supplemental Sampling

Second Quarter, 2024

Sample Type	Collection Frequency	Number of Sample Locations	Number of Samples
1. Direct Radiation	Quarterly	9	9
2. Airborne			
2.a. Air Iodines	Weekly	3	26
2.b. Air Particulates	Weekly	3	26
3. Waterborne			
3.a. Surface Water	Monthly	2	6
3.b. Shoreline Sediment	Semiannually	4	0
3.c. Beach Sand	Semiannually	3	0
3.d. Ground Water	Quarterly	10	10
4. Ingestion			
4.a. Garden Crop	Annually	1	0
4.b. Citrus	Annually	1	0

Total: 77

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 - DEPLOYED TLD's - ($\mu\text{R}/\text{hour}$)

Sample Site	Deployment 25-Mar-24 Collection 10-June-24
H08	3.6 ± 0.2
H09	3.8 ± 0.1
H12	7.8 ± 0.3
H14	3.9 ± 0.1
H33	3.6 ± 0.2
H34	3.5 ± 0.3
H60	3.4 ± 0.1
H61	3.5 ± 0.3
H62	5.0 ± 0.1

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

Collection Date	H09	H32	H33
01-Apr-24	<0.03	<0.03	<0.03
09-Apr-24	<0.01	<0.01	<0.01
16-Apr-24	<0.01	<0.01	<0.01
23-Apr-24	<0.02	<0.02	<0.02
30-Apr-24	<0.02	<0.02	<0.02
06-May-24	<0.02	<0.02	<0.02
14-May-24	<0.01	<0.01	<0.01
21-May-24	<0.02	<0.02	<0.02
28-May-24	<0.02	<0.02	<0.02
05-Jun-24	<0.02	<0.02	<0.02
11-Jun-24	<0.02	<0.02	<0.02
18-Jun-24	<0.02	<0.02	<0.02
26-Jun-24	<0.01	<0.02	<0.02

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

Collection Date	H09	H32	H33
01-Apr-24	0.017 ± 0.002	0.016 ± 0.002	0.016 ± 0.002
09-Apr-24	0.015 ± 0.002	0.019 ± 0.002	0.017 ± 0.002
16-Apr-24	0.013 ± 0.002	0.018 ± 0.002	0.016 ± 0.002
23-Apr-24	0.017 ± 0.002	0.015 ± 0.002	0.016 ± 0.002
30-Apr-24	0.016 ± 0.002	0.019 ± 0.002	0.014 ± 0.002
06-May-24	0.016 ± 0.002	0.018 ± 0.002	0.011 ± 0.002
14-May-24	0.020 ± 0.002	0.019 ± 0.002	0.015 ± 0.002
21-May-24	0.016 ± 0.002	0.018 ± 0.002	0.016 ± 0.002
28-May-24	0.013 ± 0.002	0.013 ± 0.002	0.014 ± 0.002
05-Jun-24	0.015 ± 0.002	0.018 ± 0.002	0.016 ± 0.002
11-Jun-24	0.008 ± 0.002	0.013 ± 0.002	0.016 ± 0.002
18-Jun-24	0.015 ± 0.002	0.009 ± 0.002	0.013 ± 0.002
26-Jun-24	0.006 ± 0.001	0.008 ± 0.001	0.007 ± 0.001
Average	0.014 ± 0.001	0.016 ± 0.001	0.014 ± 0.001

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

Sample Site	Be-7	K-40	Cs-134	Cs-137	Pb-210
H09	0.0713 ± 0.0076	< 0.0147	< 0.0009	< 0.0010	< 0.0149
H32	0.1040 ± 0.0089	< 0.0112	< 0.0007	< 0.0010	< 0.0327
H33	0.1090 ± 0.0099	< 0.0207	< 0.0010	< 0.0011	0.0124 ± 0.0029

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)
H13	04-Apr-24	<138	312 ± 38	<6	<6	<13	<6	<13	<12	<22	<5	<4	<11
	01-May-24	<136	365 ± 38	<4	<4	<12	<5	<11	<9	<9	<5	<5	<10
	19-Jun-24	<135	252 ± 27	<4	<4	<8	<4	<10	<7	<5	<4	<4	<9
H36	04-Apr-24	<136	391 ± 28	<4	<4	<7	<3	<7	<7	<7	<4	<4	<6
	01-May-24	<136	330 ± 38	<5	<6	<11	<6	<13	<11	<9	<5	<5	<8
	19-Jun-24	<135	308 ± 26	<3	<4	<7	<3	<8	<7	<4	<3	<4	<5

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

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

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

Sample Site	Collection Date	Be-7	K-40	Co-58	Co-60	Cs-134	Cs-137	Pb-210	Ra-226	Th-232	U-235	U-238
H13				These samples were previously collected								
H16												
H19												
H36												

3.c. BEACH SAND - (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-235</u>	<u>U-238</u>
H15				These samples were previously collected								
H16												
H19												

3.d. GROUND 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)
H70	04-Apr-24	<135	<49	<3	<3	<5	<3	<8	<6	<8	<3	<4	<4
H71	04-Apr-24	530 ± 52	401 ± 41	<6	<6	<15	<6	<12	<10	<18	<4	<6	<11
H72	04-Apr-24	<136	375 ± 38	<6	<5	<14	<5	<12	<11	<11	<5	<5	<8
H73	04-Apr-24	<135	<48	<4	<4	<10	<4	<9	<8	<21	<3	<4	<9
H74	04-Apr-24	<135	271 ± 27	<4	<4	<10	<4	<10	<8	<13	<4	<4	<6
H75	04-Apr-24	<135	310 ± 37	<6	<6	<13	<6	<12	<12	<14	<5	<6	<8
H76	04-Apr-24	<136	<35	<3	<3	<8	<3	<8	<6	<6	<4	<3	<5
H77	04-Apr-24	<135	<46	<4	<5	<9	<4	<9	<8	<17	<4	<4	<12
H78	04-Apr-24	<136	<59	<3	<3	<6	<3	<7	<6	<7	<3	<4	<6
H79	04-Apr-24	<135	<50	<5	<5	<10	<4	<10	<8	<13	<4	<5	<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 La140, whichever method yields the greater sensitivity for a given sample.

4.a. GARDEN CROP - (pCi/kg, wet weight)

Sample Site	Collection Date	Be-7	K-40	I-131	Cs-134	Cs-137
H41	This sample has not been available.					

4.b. CITRUS - (pCi/kg, wet weight)

Sample Site	Collection Date	Be-7	K-40	I-131	Cs-134	Cs-137
H23	4-Apr-24	<7663	1683 ± 89	<7	<8	<9



RADIOLOGICAL SURVEILLANCE

OF

FLORIDA POWER AND LIGHT COMPANY

ST. LUCIE PLANT

THIRD QUARTER 2024

BUREAU OF RADIATION CONTROL

ST. LUCIE SITE

Offsite Dose Calculation Manual Sampling

Third Quarter, 2024

Sample Type	Collection Frequency	Number of Sample Locations	Number of Samples
1. Direct Radiation	Quarterly	27	27
2. Airborne			
2.a. Air Iodines	Weekly	5	65
2.b. Air Particulates	Weekly	5	65
3. Waterborne			
3.a. Surface Water	Weekly	1	13
	Monthly	1	3
3.b. Shoreline Sediment	Semiannually	2	2
4. Ingestion			
4.a. Fish and Invertebrates			
4.a.1. Crustacea	Semiannually	2	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 - DEPLOYED TLD's - ($\mu\text{R}/\text{hour}$)

Sample Site	Deployment: 04-July-24 Collection: 09-Sep-24
N-1	3.2 ± 0.5
NNW-5	3.6 ± 0.6
NNW-10	4.3 ± 0.3
NW-5	3.6 ± 0.5
NW-10	4.5 ± 0.1
WNW-2	3.3 ± 0.4
WNW-5	3.7 ± 0.2
WNW-10	3.5 ± 0.2
W-2	3.3 ± 0.3
W-5	3.9 ± 0.3
W-10	3.1 ± 0.3
WSW-2	3.5 ± 0.1
WSW-5	3.8 ± 0.4
WSW-10	3.7 ± 0.3
SW-2	3.3 ± 0.2
SW-5	4.2 ± 0.5
SW-10	3.5 ± 0.2
SSW-2	3.3 ± 0.4
SSW-5	3.9 ± 0.1
SSW-10	3.3 ± 0.2
S-5	3.7 ± 0.1
S-10	4.1 ± 0.5
S/SSE-10	4.0 ± 0.3
SSE-5	3.6 ± 0.3
SSE-10	3.8 ± 0.4
SE-1	3.3 ± 0.7
H-32	4.1 ± 0.2

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>
03-Jul-24	<0.02	<0.02	<0.02	<0.02	<0.02
10-Jul-24	<0.01	<0.01	<0.01	<0.01	<0.01
17-Jul-24	<0.02	<0.02	<0.02	<0.02	<0.02
24-Jul-24	<0.01	<0.01	<0.01	<0.01	<0.01
30-Jul-24	<0.02	<0.02	<0.02	<0.02	<0.02
06-Aug-24	<0.02	<0.02	<0.02	<0.02	<0.02
12-Aug-24	<0.03	<0.03	<0.03	<0.03	<0.03
20-Aug-24	<0.02	<0.02	<0.02	<0.02	<0.02
27-Aug-24	<0.01	<0.01	<0.01	<0.01	<0.01
03-Sep-24	<0.02	<0.02	<0.02	<0.02	<0.02
10-Sep-24	<0.02	<0.02	<0.02	<0.02	<0.02
18-Sep-24	<0.00	<0.00	<0.00	<0.00	<0.00
24-Sep-24	<0.02	<0.02	<0.02	<0.01	<0.02

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

Collection Date	H08	H12	H14	H30	H34
03-Jul-24	0.004 ± 0.002	0.005 ± 0.002	0.009 ± 0.002	0.007 ± 0.002	0.006 ± 0.002
10-Jul-24	0.016 ± 0.002	0.017 ± 0.002	0.019 ± 0.002	0.015 ± 0.002	0.018 ± 0.002
17-Jul-24	0.010 ± 0.002	0.015 ± 0.002	0.018 ± 0.002	0.015 ± 0.002	0.017 ± 0.002
24-Jul-24	0.011 ± 0.002	0.011 ± 0.002	0.010 ± 0.002	0.011 ± 0.002	0.008 ± 0.002
30-Jul-24	0.009 ± 0.002	0.011 ± 0.002	0.012 ± 0.002	0.014 ± 0.002	0.010 ± 0.002
06-Aug-24	0.008 ± 0.002	0.009 ± 0.002	0.009 ± 0.002	0.015 ± 0.002	0.012 ± 0.002
12-Aug-24	0.016 ± 0.002	0.014 ± 0.002	0.013 ± 0.002	0.018 ± 0.002	0.016 ± 0.002
20-Aug-24	0.015 ± 0.002	0.015 ± 0.002	0.014 ± 0.002	0.014 ± 0.002	0.013 ± 0.002
27-Aug-24	0.011 ± 0.002	0.010 ± 0.002	0.009 ± 0.002	0.012 ± 0.002	0.009 ± 0.002
03-Sep-24	0.003 ± 0.001	0.002 ± 0.001	0.006 ± 0.001	0.007 ± 0.001	0.013 ± 0.002
10-Sep-24	0.007 ± 0.002	0.007 ± 0.002	0.011 ± 0.002	0.011 ± 0.002	0.008 ± 0.002
18-Sep-24	0.010 ± 0.002	0.012 ± 0.002	0.006 ± 0.001	0.009 ± 0.002	0.011 ± 0.002
24-Sep-24	0.011 ± 0.002	0.014 ± 0.002	0.008 ± 0.002	0.013 ± 0.002	0.015 ± 0.002
Average:	0.010 ± 0.001	0.011 ± 0.001	0.011 ± 0.001	0.012 ± 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	0.008 ± 0.018	<0.019	< 0.001	< 0.004	<0.009
H12	0.074 ± 0.007	< 0.015	< 0.001	< 0.001	<0.029
H14	0.088 ± 0.009	< 0.018	< 0.001	< 0.001	<0.008
H30	0.007 ± 0.014	< 0.011	< 0.001	< 0.001	<0.013
H34	0.071 ± 0.007	< 0.013	< 0.001	< 0.001	<0.014

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	03-Jul-24	<136	364 ± 37	<5	<4	<11	<6	<12	<11	<21	<5	<6	<13
	10-Jul-24	<140	323± 31	<4	<4	<9	<5	<9	<8	<8	<4	<5	<6
	17-Jul-24	<136	341 ± 32	<4	<4	<10	<4	<10	<7	<7	<4	<4	<6
	24-Jul-24	<137	320 ± 27	<4	<4	<9	<4	<6	<6	<7	<3	<4	<5
	30-Jul-24	<137	370 ± 28	<4	<3	<8	<4	<7	<6	<4	<3	<4	<13
	06-Aug-24	<137	385± 41	<5	<5	<12	<6	<13	<10	<7	<5	<5	<7
	12-Aug-24	<138	345± 33	<4	<4	<10	<5	<10	<8	<6	<4	<5	<12
	20-Aug-24	<138	378± 40	<5	<5	<12	<5	<13	<10	<7	<4	<5	<5
	27-Aug-24	<137	254± 24	<3	<3	<8	<4	<8	<6	<4	<3	<4	<6
	03-Sep-24	<137	267± 23	<4	<4	<6	<4	<8	<6	<7	<4	<5	<9
	10-Sep-24	<140	330± 35	<5	<5	<13	<5	<13	<9	<11	<5	<5	<6
	18-Sep-24	<140	318± 31	<4	<5	<13	<4	<11	<8	<48	<4	<4	<14
	24-Sep-24	<140	372± 31	<4	<4	<9	<4	<10	<8	<6	<4	<4	<8
H59	03-Jul-24	<136	362± 38	<4	<4	<8	<6	<10	<7	<5	<4	<5	<5
	06-Aug-24	<137	347± 27	<3	<4	<8	<4	<8	<5	<4	<3	<4	<4
	03-Sep-24	<137	389± 39	<5	<5	<11	<5	<13	<8	<7	<4	<5	<9

(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-235</u>	<u>U-238</u>
H15	20-Aug-24	<110	298 ± 41	<12	<8	<8	<10	<745	106 ± 11	<64	<18	<160
H59	20-Aug-24	<67	215 ± 33	<7	<8	<8	<7	<994	90 ± 11	<64	<19	<173

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	02-Aug-24	398 ± 27	<3	<3	<6	<3	<7	<2	<3	<93	<15
H59			This sample to be collected at a later time								

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	14-Aug-24	3160 ± 226	<24	<20	<51	<23	<62	<23	<24	<398	<86
H59	15-Aug-24	3000 ± 210	<26	<27	<58	<27	<49	<28	<29	<535	<91

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

Sample Site	Collection Date	Be-7	K-40	I-131	Cs-134	Cs-137	Pb-210	Pb-212	Ra-226	Ra-228
H51	03-Jul-24	1060 ± 92	5920 ± 261	<148	<14	<15	<926	<31	<359	<75
	06-Aug-24	812 ± 62	5060 ± 224	<16	<11	<14	<782	<25	<307	<56
	03-Sep-24	1650 ± 153	4980 ± 224	<32	<13	<12	<868	<28	<317	<60
H52	03-Jul-24	910 ± 95	4000 ± 184	<117	<11	<11	<646	<24	<259	<51
	06-Aug-24	726 ± 77	3730 ± 183	<15	<13	<14	<695	<30	<298	<53
	03-Sep-24	1390 ± 129	3270 ± 160	<25	<11	<12	<778	<24	<261	<50
H59	03-Jul-24	940 ± 87	2390 ± 148	<158	<13	<19	<722	<27	<357	<51
	06-Aug-24	3740 ± 170	3740 ± 170	<20	<10	<11	<602	<21	<244	<45
	03-Sep-24	1670 ± 107	3530 ± 199	<37	<14	<17	<1090	<34	<399	<62

ST. LUCIE SITE

Supplemental Sampling

Third Quarter, 2024

Sample Type	Collection Frequency	Number of Sample Locations	Number of Samples
1. Direct Radiation	Quarterly	9	9
2. Airborne			
2.a. Air Iodines	Weekly	3	38
2.b. Air Particulates	Weekly	3	38
3. Waterborne			
3.a. Surface Water	Monthly	2	6
3.b. Shoreline Sediment	Semiannually	4	4
3.c. Beach Sand	Semiannually	3	3
3.d. Ground Water	Quarterly	10	10
4. Ingestion			
4.a. Garden Crop	Annually	1	0
4.b. Citrus	Annually	1	0

Total: 108

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 - DEPLOYED TLD's - ($\mu\text{R}/\text{hour}$)

Sample Site	Deployment: 04-July-24 Collection: 09-Sep-24
H08	4.1 ± 0.4
H09	8.0 ± 0.6
H12	3.9 ± 0.5
H14	3.7 ± 0.3
H33	3.5 ± 0.3
H34	3.6 ± 0.2
H60	3.7 ± 0.5
H61	4.8 ± 0.2
H62	4.1 ± 0.4

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

Collection Date	H09	H32	H33
03-Jul-24	<0.02	<0.02	<0.02
10-Jul-24	<0.01	<0.01	<0.01
17-Jul-24	<0.02	<0.02	<0.02
24-Jul-24	<0.01	<0.01	<0.01
30-Jul-24	<0.02	<0.02	<0.02
06-Aug-24	<0.02	<0.02	<0.02
12-Aug-24	<0.03	<0.03	<0.03
20-Aug-24	<0.02	<0.02	<0.02
27-Aug-24	<0.01	<0.01	<0.01
03-Sep-24	<0.02	<0.02	<0.02
10-Sep-24	<0.02	<0.02	<0.02
18-Sep-24	<0.00	<0.00	<0.00
24-Sep-24	<0.02	<0.02	<0.02

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

Collection Date	H09	H32	H33
03-Jul-24	0.002 ± 0.001	0.006 ± 0.002	0.008 ± 0.002
10-Jul-24	0.013 ± 0.002	0.015 ± 0.002	0.013 ± 0.002
17-Jul-24	0.018 ± 0.002	0.015 ± 0.002	0.012 ± 0.002
24-Jul-24	0.008 ± 0.002	0.009 ± 0.002	0.014 ± 0.002
30-Jul-24	0.013 ± 0.002	0.010 ± 0.002	0.001 ± 0.001
06-Aug-24	0.009 ± 0.002	0.010 ± 0.002	0.005 ± 0.001
12-Aug-24	0.015 ± 0.002	0.020 ± 0.003	0.020 ± 0.002
20-Aug-24	0.018 ± 0.002	0.020 ± 0.002	0.011 ± 0.002
27-Aug-24	0.008 ± 0.002	0.013 ± 0.002	0.005 ± 0.001
03-Sep-24	0.006 ± 0.002	0.007 ± 0.002	0.002 ± 0.001
10-Sep-24	0.005 ± 0.001	0.009 ± 0.002	0.008 ± 0.002
18-Sep-24	0.008 ± 0.002	0.008 ± 0.002	0.006 ± 0.001
24-Sep-24	0.014 ± 0.002	0.014 ± 0.002	0.010 ± 0.002
Average	0.11 ± 0.001	0.012 ± 0.001	0.009 ± 0.001

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

Sample Site	Be-7	K-40	Cs-134	Cs-137	Pb-210
H09	0.0664 ± 0.0067	<0.0125	<0.0137	<0.0010	<0.0012
H32	0.0802 ± 0.0075	<0.0115	<0.0127	<0.0008	<0.0010
H33	0.0673 ± 0.0078	<0.0174	<0.0180	<0.0010	<0.0012

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)
H13	03-Jul-24	<136	372 ± 38	<5	<6	<14	<6	<14	<12	<19	<5	<5	<12
	06-Aug-24	<137	308 ± 25	<3	<3	<7	<4	<7	<6	<4	<4	<4	<3
	03-Sep-24	<140	242 ± 23	<4	<3	<8	<4	<8	<7	<7	<3	<3	<6
H36	03-Jul-24	<141	419 ± 41	<5	<5	<14	<6	<16	<13	<18	<5	<5	<12
	06-Aug-24	<137	333 ± 36	<5	<6	<11	<7	<13	<9	<7	<5	<5	<12
	03-Sep-24	<137	306 ± 25	<3	<4	<8	<4	<7	<6	<12	<3	<3	<7

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

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

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

Sample Site	Collection Date	Be-7	K-40	Co-58	Co-60	Cs-134	Cs-137	Pb-210	Ra-226	Th-232	U-235	U-238
H13	20-Aug-24	<91	1090 ± 78	<7	<9	<9	<10	<1050	48 ± 12	<75	<22	<212
H16	20-Aug-24	<48	172 ± 39	<6	<7	<7	<7	<276	34 ± 8	<48	<11	<106
H19	20-Aug-24	<69	172 ± 31	<6	<6	<8	<7	<804	<40	<45	<18	<177
H36	20-Aug-24	<163	5050 ± 186	<15	<13	<7	<16	<100	<124	<69	<19	<184

3.c. BEACH SAND - (pCi/kg, dry weight)

Sample Site	Collection Date	Be-7	K-40	Co-58	Co-60	Cs-134	Cs-137	Pb-210	Ra-226	Th-232	U-235	U-238
H15	28-Feb-24	67 ± 16	<98	<6	<6	<7	<7	<244	<168	<47	<11	<100
H16	28-Feb-24	<105	176 ± 36	<9	<7	<8	<9	<961	<296	<51	<19	<166
H19	28-Feb-24	<158	256 ± 53.5	<17	<14	<14	<15	<1400	1040 ± 153	225 ± 26	65 ± 10	432 ± 59

3.d. GROUND WATER - (pCi/L)

Sample Site	Collection Date	H-3	K-40	Mn-54	Co58	Fe59	Co60	Zn65	Zr-95 Nb-95 (A)	I-131	Cs-134	Cs-137	Ba-140 La-140 (B)
H70	02-Aug-24	<137	<81	<5	<6	<11	<5	<12	<10	<9	<5	<6	<10
H71	02-Aug-24	350 ± 49	362 ± 40	<5	<6	<12	<6	<12	<11	<8	<5	<5	<11
H72	02-Aug-24	<137	274 ± 29	<4	<5	<9	<5	<11	<8	<6	<4	<4	<8
H73	02-Aug-24	<137	74 ± 19	<5	<4	<9	<4	<10	<8	<7	<4	<3	<7
H74	02-Aug-24	<138	303 ± 37	<5	<6	<12	<5	<12	<10	<8	<5	<5	<10
H75	02-Aug-24	<137	243 ± 27	<5	<4	<9	<5	<9	<8	<7	<4	<5	<8
H76	02-Aug-24	<137	<79	<5	<5	<11	<5	<14	<9	<9	<5	<5	<6
H77	02-Aug-24	<137	<66	<5	<5	<10	<5	<10	<10	<8	<5	<5	<10
H78	02-Aug-24	<137	<50	<3	<4	<8	<4	<9	<8	<6	<4	<5	<6
H79	02-Aug-24	<137	<57	<4	<4	<9	<5	<9	<8	<6	<4	<5	<6

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

(B)- These tabulated LLD values are for Ba-140, either based on direct measurement of Ba-140 or based on ingrowth of La140, whichever method yields the greater sensitivity for a given sample.

4.a. GARDEN CROP - (pCi/kg, wet weight)

Sample Site	Collection Date	Be-7	K-40	I-131	Cs-134	Cs-137
H41	This sample has not been available.					

4.b. CITRUS - (pCi/kg, wet weight)

Sample Site	Collection Date	Be-7	K-40	I-131	Cs-134	Cs-137
H23	This sample was previously collected					



RADIOLOGICAL SURVEILLANCE
OF
FLORIDA POWER AND LIGHT COMPANY

ST. LUCIE PLANT

FOURTH QUARTER 2024

BUREAU OF RADIATION CONTROL

ST. LUCIE SITE

Offsite Dose Calculation Manual Sampling

Fourth Quarter, 2024

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

1.0 DIRECT RADIATION - DEPLOYED TLD's - ($\mu\text{R}/\text{hour}$)

Sample Site	Deployment: 09-Sep-24 Collection: 18-Dec-24
N-1	3.4 ± 0.2
NNW-5	3.5 ± 0.1
NNW-10	4.3 ± 0.4
NW-5	3.3 ± 0.3
NW-10	4.5 ± 0.2
WNW-2	3.3 ± 0.1
WNW-5	3.7 ± 0.3
WNW-10	3.6 ± 0.1
W-2	3.4 ± 0.4
W-5	3.9 ± 0.3
W-10	3.1 ± 0.2
WSW-2	3.6 ± 0.1
WSW-5	3.7 ± 0.4
WSW-10	4.2 ± 0.1
SW-2	3.5 ± 0.1
SW-5	4.2 ± 0.2
SW-10	3.7 ± 0.2
SSW-2	3.6 ± 0.2
SSW-5	3.9 ± 0.3
SSW-10	3.3 ± 0.4
S-5	3.8 ± 0.1
S-10	4.0 ± 0.1
S/SSE-10	4.2 ± 0.3
SSE-5	3.7 ± 0.3
SSE-10	3.8 ± 0.1
SE-1	3.4 ± 0.1
H-32	3.8 ± 0.4

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-24	<0.02	<0.02	<0.02	<0.02	<0.02
08-Oct-24	<0.03	<0.03	<0.03	<0.03	<0.03
14-Oct-24	<0.02	<0.02	<0.02	<0.02	<0.02
22-Oct-24	<0.01	<0.01	<0.01	<0.01	<0.01
29-Oct-24	<0.02	<0.02	<0.02	<0.02	<0.02
05-Nov-24	<0.02	<0.02	<0.02	<0.02	<0.02
12-Nov-24	<0.02	<0.02	<0.02	<0.02	<0.02
20-Nov-24	<0.01	<0.01	<0.01	<0.01	<0.01
26-Nov-24	<0.03	<0.03	<0.03	<0.03	<0.03
03-Dec-24	<0.01	<0.02	<0.02	<0.02	<0.02
10-Dec-24	<0.01	<0.01	<0.01	<0.01	<0.01
18-Dec-24	<0.01	<0.01	<0.01	<0.01	<0.01
23-Dec-24	<0.03	<0.03	<0.03	<0.03	<0.03

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

Collection Date	H08	H12	H14	H30	H34
01-Oct-24	0.024 ± 0.003	0.009 ± 0.002	0.013 ± 0.002	0.014 ± 0.002	0.009 ± 0.002
08-Oct-24	0.004 ± 0.001	0.011 ± 0.002	0.007 ± 0.002	0.008 ± 0.002	0.005 ± 0.001
14-Oct-24	0.008 ± 0.002	0.010 ± 0.002	0.015 ± 0.002	0.013 ± 0.002	0.015 ± 0.002
22-Oct-24	0.010 ± 0.002	0.014 ± 0.002	0.012 ± 0.002	0.014 ± 0.002	0.015 ± 0.002
29-Oct-24	0.020 ± 0.002	0.020 ± 0.002	0.023 ± 0.002	0.024 ± 0.003	0.028 ± 0.003
05-Nov-24	0.009 ± 0.002	0.014 ± 0.002	0.019 ± 0.002	0.016 ± 0.002	0.016 ± 0.002
12-Nov-24	0.001 ± 0.002	0.003 ± 0.002	0.004 ± 0.002	0.007 ± 0.002	0.004 ± 0.002
20-Nov-24	0.015 ± 0.002	0.018 ± 0.002	0.018 ± 0.002	0.021 ± 0.002	0.018 ± 0.002
26-Nov-24	0.019 ± 0.002	0.021 ± 0.003	0.023 ± 0.003	0.022 ± 0.003	0.026 ± 0.003
03-Dec-24	0.017 ± 0.002	0.019 ± 0.002	0.024 ± 0.003	0.020 ± 0.002	0.019 ± 0.002
10-Dec-24	0.025 ± 0.002	0.022 ± 0.002	0.026 ± 0.002	0.024 ± 0.002	0.019 ± 0.002
18-Dec-24	0.009 ± 0.001	0.015 ± 0.002	0.014 ± 0.002	0.013 ± 0.002	0.012 ± 0.002
23-Dec-24	0.024 ± 0.003	0.017 ± 0.003	0.018 ± 0.003	0.018 ± 0.003	0.015 ± 0.002
Average:	0.014 ± 0.001	0.015 ± 0.001	0.016 ± 0.001	0.016 ± 0.001	0.015 ± 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	0.1220 ± 0.0096	<0.0191	<0.0009	<0.0009	<0.0101
H12	0.1200 ± 0.0092	<0.0214	<0.0010	<0.0008	<0.0099
H14	0.1090 ± 0.0085	<0.0133	<0.0007	<0.0007	<0.0245
H30	0.1210 ± 0.0107	<0.0287	<0.0010	<0.0011	0.0110 ± 0.0033
H34	0.1420 ± 0.0100	<0.0158	<0.0009	<0.0010	<0.0116

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-Oct-24	<139	376 ± 27	<3	<3	<7	<3	<7	<6	<4	<4	<4	<4
	08-Oct-24	<142	277 ± 37	<6	<6	<14	<6	<11	<9	<11	<5	<5	<10
	14-Oct-24	<142	300 ± 29	<3	<4	<9	<4	<9	<8	<6	<4	<5	<7
	22-Oct-24	<142	280 ± 24	<4	<3	<7	<4	<9	<7	<4	<4	<4	<4
	29-Oct-24	<142	277 ± 29	<4	<5	<9	<4	<10	<7	<8	<4	<4	<6
	04-Nov-24	<142	339 ± 26	<4	<3	<7	<4	<8	<6	<5	<3	<3	<5
	12-Nov-24	<142	338 ± 32	<4	<4	<9	<5	<10	<8	<11	<4	<5	<6
	20-Nov-24	<142	424 ± 41	<7	<6	<13	<7	<13	<11	<11	<6	<7	<11
	26-Nov-24	<142	347 ± 32	<3	<2	<5	<5	<8	<5	<1	<4	<5	<1
	03-Dec-24	<140	359 ± 31	<4	<4	<9	<4	<12	<7	<6	<5	<5	<10
	10-Dec-24	<140	372 ± 27	<4	<4	<8	<4	<10	<7	<5	<5	<5	<5
	18-Dec-24	<140	363 ± 27	<4	<4	<7	<4	<11	<7	<5	<5	<5	<5
	23-Dec-24	<145	344 ± 26	<4	<4	<9	<4	<9	<7	<11	<5	<4	<1
H59	30-Dec-24	<140	416 ± 34	<4	<4	<8	<5	<9	<8	<5	<4	<5	<1
	17-Oct-24	<142	323 ± 31	<4	<4	<9	<4	<9	<8	<8	<4	<5	<7
	05-Nov-24	<142	312 ± 31	<4	<4	<8	<4	<11	<7	<5	<5	<5	<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)

<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-235</u>	<u>U-238</u>
H15				These samples were previously collected								
H59												

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 was previously collected								
H59	06-Dec-24	2080 ± 222	<26	<27	<55	<26	<63	<23	<29	<547	<125

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			These samples were previously collected								
H59	06-Dec-24	2080 ± 222	<26	<27	<55	<26	<63	<23	<29	<547	<125

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	17-Oct-24	1810 ± 111	3810 ± 192	<77	<12	<15	<857	<26	<347	<56
	05-Nov-24	1170 ± 97	3930 ± 220	<66	<17	<17	<1090	<38	<449	<65
	04-Dec-24	1010 ± 83	5880 ± 267	<25	<13	<16	<867	<34	<358	<76
H52	17-Oct-24	1770 ± 164	4260 ± 201	<79	<12	<11	<813	<29	<288	<43
	05-Nov-24	1690 ± 160	6360 ± 274	<59	<16	<17	<960	<32	<365	<68
	04-Dec-24	536 ± 64	4230 ± 196	<21	<12	<12	<1140	<26	<274	<52
H59	17-Oct-24	1150 ± 78	4020 ± 217	<6	<16	<18	<1010	<33	<408	<74
	05-Nov-24	1080 ± 104	2870 ± 151	<40	<12	<13	<820	<26	<284	<45
	04-Dec-24	926 ± 56	3570 ± 166	<16	<14	<17	<164	<31	<324	<52

ST. LUCIE SITE

Supplemental Sampling

Fourth Quarter, 2024

Sample Type	Collection Frequency	Number of Sample Locations	Number of Samples
1. Direct Radiation	Quarterly	9	9
2. Airborne			
2.a. Air Iodines	Weekly	3	38
2.b. Air Particulates	Weekly	3	38
3. Waterborne			
3.a. Surface Water	Monthly	2	6
3.b. Shoreline Sediment	Semiannually	0	0
3.c. Beach Sand	Semiannually	0	0
3.d. Ground Water	Quarterly	10	10
4. Ingestion			
4.a. Garden Crop	Annually	0	0
4.b. Citrus	Annually	0	0

Total: 108

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 - DEPLOYED TLD's - ($\mu\text{R}/\text{hour}$)

Sample Site	Deployment: 09-Sep-24 Collection: 18-Dec-24
H08	4.0 ± 0.2
H09	4.1 ± 0.2
H12	4.1 ± 0.4
H14	3.9 ± 0.4
H33	3.8 ± 0.4
H34	3.7 ± 0.1
H60	3.7 ± 0.2
H61	5.2 ± 0.4
H62	4.4 ± 0.3

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

<u>Collection Date</u>	<u>H09</u>	<u>H32</u>	<u>H33</u>
01-Oct-24	< 0.02	< 0.02	< 0.02
08-Oct-24	< 0.03	< 0.03	< 0.04
14-Oct-24	< 0.02	< 0.07	< 0.02
22-Oct-24	< 0.01	< 0.01	< 0.01
29-Oct-24	< 0.02	< 0.02	< 0.02
05-Nov-24	< 0.02	< 0.02	< 0.02
12-Nov-24	< 0.02	< 0.02	< 0.02
20-Nov-24	< 0.01	< 0.01	< 0.01
26-Nov-24	< 0.03	< 0.03	< 0.03
03-Dec-24	< 0.02	< 0.02	< 0.02
10-Dec-24	< 0.01	< 0.01	< 0.01
18-Dec-24	< 0.01	< 0.01	< 0.01
23-Dec-24	< 0.03	< 0.03	< 0.03

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

<u>Collection Date</u>	<u>H09</u>	<u>H32</u>	<u>H33</u>
01-Oct-24	0.009 ± 0.002	0.013 ± 0.002	0.007 ± 0.002
08-Oct-24	0.006 ± 0.002	0.008 ± 0.002	0.006 ± 0.002
14-Oct-24	0.013 ± 0.002	0.012 ± 0.006	0.013 ± 0.002
22-Oct-24	0.014 ± 0.002	0.016 ± 0.002	0.009 ± 0.002
29-Oct-24	0.023 ± 0.003	0.024 ± 0.003	0.014 ± 0.002
05-Nov-24	0.014 ± 0.002	0.020 ± 0.002	0.010 ± 0.002
12-Nov-24	0.003 ± 0.002	0.003 ± 0.002	0.001 ± 0.002
20-Nov-24	0.021 ± 0.002	0.018 ± 0.002	0.014 ± 0.002
26-Nov-24	0.025 ± 0.003	0.021 ± 0.003	0.016 ± 0.002
03-Dec-24	0.020 ± 0.002	0.019 ± 0.002	0.015 ± 0.002
10-Dec-24	0.023 ± 0.002	0.024 ± 0.002	0.019 ± 0.002
18-Dec-24	0.007 ± 0.001	0.015 ± 0.002	0.009 ± 0.001
23-Dec-24	0.019 ± 0.003	0.011 ± 0.002	0.011 ± 0.002
Average	0.015 ± 0.001	0.016 ± 0.001	0.011 ± 0.001

2.b. 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>
H09	0.1080 ± 0.0084	<0.0151	<0.0007	<0.0007	<0.0275
H32	0.1240 ± 0.0091	<0.0153	<0.0010	<0.0013	0.0144 ± 0.0035
H33	0.0893 ± 0.0078	<0.0129	<0.0007	<0.0005	<0.0241

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)
H13	17-Oct-24	<142	237 ± 27	<4	<4	<9	<5	<8	<7	<7	<4	<4	<7
	05-Nov-24	<142	321 ± 36	<6	<5	<9	<5	<11	<7	<8	<4	<5	<11
	04-Dec-24	<140	387 ± 37	<5	<5	<11	<6	<9	<9	<6	<5	<5	<12
H36	17-Oct-24	<142	294 ± 29	<3	<4	<10	<4	<10	<8	<8	<4	<4	<6
	05-Nov-24	<142	318 ± 30	<4	<4	<8	<4	<9	<7	<5	<4	<5	<6
	04-Dec-24	6832 ± 125	374 ± 32	<4	<4	<8	<4	<8	<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. (C) – Sample was taken during release

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

Sample Site	Collection Date	Be-7	K-40	Co-58	Co-60	Cs-134	Cs-137	Pb-210	Ra-226	Th-232	U-235	U-238
H13												
H16												
H19												
H36												

3.c. BEACH SAND - (pCi/kg, dry weight)

<u>Sample Site</u>	<u>Collection Date</u>	<u>Be-7</u>	<u>K-40</u>	<u>Co58</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-235</u>	<u>U-238</u>
H15					These samples were previously collected							
H16												
H19												

3.d. GROUND WATER - (pCi/L)

Sample Site	Collection Date	H-3	K-40	Mn-54	Co58	Fe59	Co60	Zn65	Zr-95 Nb-95 (A)	I-131	Cs-134	Cs-137	Ba-140 La-140 (B)
H70	02-Oct-24	<142	<47	<3	<3	<7	<3	<8	<6	<13	<3	<3	<8
H71	02-Oct-24	394 ± 51	358 ± 32	<4	<4	<11	<4	<9	<8	<13	<4	<4	<9
H72	02-Oct-24	<143	274 ± 25	<5	<4	<8	<4	<11	<8	<6	<5	<5	<4
H73	02-Oct-24	<139	<103	<7	<6	<15	<6	<14	<12	<22	<5	<7	<17
H74	02-Oct-24	<143	294 ± 25	<4	<4	<8	<4	<9	<6	<4	<4	<4	<4
H75	02-Oct-24	<139	146 ± 23	<3	<3	<8	<4	<8	<6	<4	<4	<4	<4
H76	02-Oct-24	<139	<42	<3	<4	<8	<3	<6	<6	<12	<4	<3	<7
H77	02-Oct-24	<139	<32	<3	<4	<8	<3	<6	<7	<10	<3	<4	<7
H78	02-Oct-24	<139	<69	<5	<4	<10	<4	<11	<8	<14	<4	<4	<8
H79	02-Oct-24	<143	<73	<5	<4	<12	<5	<14	<9	<7	<4	<6	<15

(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 La140, whichever method yields the greater sensitivity for a given sample.

4.a. GARDEN CROP - (pCi/kg, wet weight)

Sample Site	Collection Date	<u>Be-7</u>	<u>K-40</u>	<u>I-131</u>	<u>Cs-134</u>	<u>Cs-137</u>
H41	This sample has not been available.					

4.b3 CITRUS - (pCi/kg, wet weight)

Sample Site	Collection Date	<u>Be-7</u>	<u>K-40</u>	<u>I-131</u>	<u>Cs-134</u>	<u>Cs-137</u>
H23		This sample was previously collected				

10. Results from the BRC Interlaboratory Comparison Program – 2024DOE MAPEP Series 50 BRC Results
(FDOH01)

<u>Matrix: Air Filter (Bq/sample)</u>				
<u>Radionuclide</u>	<u>Result</u>	<u>Ref. Value</u>	<u>Flag</u> <u>(Evaluation)</u>	<u>Acceptance</u> <u>Range</u>
<u>Mn-54</u>	<u>0.571</u>	<u>0.555</u>	<u>A</u>	<u>0.389 - 0.722</u>
<u>Co-60</u>	<u>1.555</u>	<u>1.64</u>	<u>A</u>	<u>1.15 - 2.13</u>
<u>Zn-65</u>	<u>0.386</u>	<u>0.332</u>	<u>A</u>	<u>Sensitivity Eval</u>
<u>Cs-134</u>	<u>0.018</u>	<u>-</u>	<u>A</u>	<u>False Pos. Test</u>
<u>Cs-137</u>	<u>1.47</u>	<u>1.48</u>	<u>A</u>	<u>1.04 - 1.92</u>
<u>Gross Alpha</u>	<u>1.53</u>	<u>1.24</u>	<u>A</u>	<u>0.37 - 2.11</u>
<u>Gross Beta</u>	<u>1.9</u>	<u>1.81</u>	<u>A</u>	<u>0.91 - 2.72</u>
<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>
<u>Matrix: Soil (Bq/kg)</u>				
<u>Radionuclide</u>	<u>Result</u>	<u>Ref. Value</u>	<u>Flag</u> <u>(Evaluation)</u>	<u>Acceptance</u> <u>Range</u>
<u>K-40</u>	<u>501.65</u>	<u>485</u>	<u>A</u>	<u>232 - 631</u>
<u>Mn-54</u>	<u>327.42</u>	<u>332</u>	<u>A</u>	<u>232 - 432</u>
<u>Co-60</u>	<u>639.79</u>	<u>660</u>	<u>A</u>	<u>462 - 858</u>
<u>Zn-65</u>	<u>735.06</u>	<u>703</u>	<u>A</u>	<u>492 - 914</u>
<u>Cs-134</u>	<u>426.03</u>	<u>404</u>	<u>A</u>	<u>283 - 525</u>
<u>Cs-137</u>	<u>1485.71</u>	<u>1550</u>	<u>A</u>	<u>1085 - 2015</u>
<u>U-238</u>	<u>115.00</u>	<u>110</u>	<u>A</u>	<u>77 - 143</u>
<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>
<u>Matrix: Water (Bq/L)</u>				
<u>Radionuclide</u>	<u>Result</u>	<u>Ref. Value</u>	<u>Flag</u> <u>(Evaluation)</u>	<u>Acceptance</u> <u>Range</u>
<u>K-40</u>	<u>1.864</u>	<u>-</u>	<u>A</u>	<u>False Pos. Test</u>
<u>Mn-54</u>	<u>7.345</u>	<u>7.36</u>	<u>A</u>	<u>5.15 - 9.57</u>
<u>Co-60</u>	<u>10.24</u>	<u>10.27</u>	<u>A</u>	<u>7.19 - 13.35</u>
<u>Zn-65</u>	<u>0.231</u>	<u>-</u>	<u>A</u>	<u>False Pos. Test</u>
<u>Cs-134</u>	<u>-0.107</u>	<u>-</u>	<u>A</u>	<u>False Pos. Test</u>
<u>Cs-137</u>	<u>10.028</u>	<u>9.7</u>	<u>A</u>	<u>6.8 - 12.6</u>
<u>Flag (Evaluation): A = Acceptable, W = Acceptable with Warning, N = Not Acceptable</u>				

DOE MAPEP Series 50 BRC Results
(FDHE01)

<u>Matrix: Air Filter (Bq/sample)</u>				
<u>Radionuclide</u>	<u>Result</u>	<u>Ref. Value</u>	<u>Flag</u> <u>(Evaluation)</u>	<u>Acceptance</u> <u>Range</u>
<u>Mn-54</u>	<u>0.547</u>	<u>0.555</u>	<u>A</u>	<u>0.389 - 0.722</u>
<u>Co-60</u>	<u>1.56</u>	<u>1.64</u>	<u>A</u>	<u>1.15 - 2.13</u>
<u>Zn-65</u>	<u>0.354</u>	<u>0.332</u>	<u>A</u>	<u>Sensitivity Eval</u>
<u>Cs-134</u>	<u>-0.0055</u>		<u>A</u>	<u>False Pos. Test</u>
<u>Cs-137</u>	<u>1.424</u>	<u>1.48</u>	<u>A</u>	<u>1.04 - 1.92</u>
<u>Gross Alpha</u>	<u>1.4</u>	<u>1.24</u>	<u>A</u>	<u>0.37 - 2.11</u>
<u>Gross Beta</u>	<u>1.92</u>	<u>1.81</u>	<u>A</u>	<u>0.91 - 2.72</u>
<u>Matrix: Soil (Bq/kg)</u>				
<u>Radionuclide</u>	<u>Result</u>	<u>Ref. Value</u>	<u>Flag</u> <u>(Evaluation)</u>	<u>Acceptance</u> <u>Range</u>
<u>K-40</u>	<u>464.33</u>	<u>485</u>	<u>A</u>	<u>232 - 631</u>
<u>Mn-54</u>	<u>326.67</u>	<u>332</u>	<u>A</u>	<u>232 - 432</u>
<u>Co-60</u>	<u>618.00</u>	<u>660</u>	<u>A</u>	<u>462 - 858</u>
<u>Zn-65</u>	<u>713.33</u>	<u>703</u>	<u>A</u>	<u>492 - 914</u>
<u>Cs-134</u>	<u>398.05</u>	<u>404</u>	<u>A</u>	<u>283 - 525</u>
<u>Cs-137</u>	<u>1473.03</u>	<u>1550</u>	<u>A</u>	<u>1085 - 2015</u>
<u>U-238</u>	<u>105.70</u>	<u>110</u>	<u>A</u>	<u>77 - 143</u>
<u>Matrix: Water (Bq/L)</u>				
<u>Radionuclide</u>	<u>Result</u>	<u>Ref. Value</u>	<u>Flag</u> <u>(Evaluation)</u>	<u>Acceptance</u> <u>Range</u>
<u>K-40</u>	<u>0.351</u>		<u>A</u>	<u>False Pos. Test</u>
<u>Mn-54</u>	<u>7.505</u>	<u>7.36</u>	<u>A</u>	<u>5.15 - 9.57</u>
<u>Co-60</u>	<u>10.17</u>	<u>10.27</u>	<u>A</u>	<u>7.19 - 13.35</u>
<u>Zn-65</u>	<u>-0.033</u>		<u>A</u>	<u>False Pos. Test</u>
<u>Cs-134</u>	<u>-0.105</u>		<u>A</u>	<u>False Pos. Test</u>
<u>Cs-137</u>	<u>10.227</u>	<u>9.7</u>	<u>A</u>	<u>6.8 - 12.6</u>
<u>Flag (Evaluation): A = Acceptable, W = Acceptable with Warning, N = Not Acceptable</u>				

DOE MAPEP Series 51 and ERA RAD-137 BRC Results**Matrix: Air Filter (Bq/sample)**

<u>Radionuclide</u>	<u>Result</u>	<u>Ref. Value</u>	<u>Flag (Evaluation)</u>	<u>Acceptance Range</u>
<u>Mn-54</u>	<u>0.013</u>		<u>A</u>	<u>False Pos. Test</u>
<u>Co-60</u>	<u>0.352</u>	<u>0.361</u>	<u>A</u>	<u>0.253 - 0.469</u>
<u>Zn-65</u>	<u>0.024</u>		<u>A</u>	<u>False Pos. Test</u>
<u>Cs-134</u>	<u>0.3</u>	<u>0.334</u>	<u>A</u>	<u>0.234 - 0.434</u>
<u>Cs-137</u>	<u>0.272</u>	<u>0.269</u>	<u>A</u>	<u>0.188 - 0.350</u>
<u>Gross Alpha</u>	<u>1.64</u>	<u>1.2</u>	<u>A</u>	<u>0.36 - 2.04</u>
<u>Gross Beta</u>	<u>0.78</u>	<u>0.644</u>	<u>A</u>	<u>0.322 - 0.966</u>

Matrix: Soil (Bq/kg)

<u>Radionuclide</u>	<u>Result</u>	<u>Ref. Value</u>	<u>Flag (Evaluation)</u>	<u>Acceptance Range</u>
<u>K-40</u>	<u>483</u>	<u>525</u>	<u>A</u>	<u>368 - 683</u>
<u>Mn-54</u>	<u>104.00</u>	<u>113</u>	<u>A</u>	<u>79 - 147</u>
<u>Co-60</u>	<u>633.00</u>	<u>700</u>	<u>A</u>	<u>490 - 910</u>
<u>Zn-65</u>	<u>383</u>	<u>415</u>	<u>A</u>	<u>291 - 540</u>
<u>Cs-134</u>	<u>414.34</u>	<u>417</u>	<u>A</u>	<u>292 - 542</u>
<u>Cs-137</u>	<u>1543.33</u>	<u>1650</u>	<u>A</u>	<u>1155 - 2145</u>
<u>U-238</u>	<u>155.67</u>	<u>165</u>	<u>A</u>	<u>116 - 215</u>

Matrix: Water (Bq/L)

<u>Radionuclide</u>	<u>Result</u>	<u>Ref. Value</u>	<u>Flag (Evaluation)</u>	<u>Acceptance Range</u>
<u>H-3 (pCi/L)</u>	<u>20901</u>	<u>21300</u>	<u>A</u>	<u>18200 - 24400</u>
<u>K-40</u>	<u>0.332</u>		<u>A</u>	<u>False Pos. Test</u>
<u>Mn-54</u>	<u>0.061</u>		<u>A</u>	<u>False Pos. Test</u>
<u>Co-60</u>	<u>14.90</u>	<u>15</u>	<u>A</u>	<u>10.5 - 19.5</u>
<u>Zn-65</u>	<u>22.100</u>	<u>22.8</u>	<u>A</u>	<u>16.0 - 29.6</u>
<u>Cs-134</u>	<u>22.99</u>	<u>22.3</u>	<u>A</u>	<u>15.6 - 29.0</u>
<u>Cs-137</u>	<u>0.030</u>		<u>A</u>	<u>False Pos. Test</u>
<u>Ra-226 (pCi/L)</u>	<u>12.480</u>	<u>13.4</u>	<u>A</u>	<u>11.1 - 15.7</u>

Flag (Evaluation): A = Acceptable, W = Acceptable with Warning, N = Not Acceptable

DOE MAPEP Series 51 BRC Results

<u>Matrix: Vegetation (Bq/sample)</u>				
<u>Am-241</u>	<u>0.102</u>	<u>0.087</u>	<u>A</u>	<u>0.061 - 0.113</u>
<u>Mn-54</u>	<u>3.62</u>	<u>3.53</u>	<u>A</u>	<u>2.47 - 4.59</u>
<u>Co-60</u>	<u>1.93</u>	<u>2.010</u>	<u>A</u>	<u>1.41 - 2.61</u>
<u>Zn-65</u>	<u>9.18</u>	<u>9.13</u>	<u>A</u>	<u>6.39 - 11.87</u>
<u>Cs-134</u>	<u>2.924</u>	<u>2.89</u>	<u>A</u>	<u>2.02 - 3.76</u>
<u>Cs-137</u>	<u>2.03</u>	<u>1.91</u>	<u>A</u>	<u>1.34 - 2.48</u>
<u>U-238</u>	<u>0.063</u>	<u>0.0685</u>	<u>A</u>	<u>0.048 - 0.0891</u>
<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>
<u>Flag (Evaluation): A = Acceptable, W = Acceptable with Warning, N = Not Acceptable</u>				

ERA RAD-139 BRC Results

<u>Matrix: Vegetation (pCi/L)</u>				
<u>Ra-226</u>	<u>8.960</u>	<u>8.500</u>	<u>A</u>	<u>6.73 - 10.3</u>
<u>Tritium</u>	<u>5379</u>	<u>5320</u>	<u>A</u>	<u>3870 - 6770</u>
<u>I-131</u>	<u>29</u>	<u>26.300</u>	<u>A</u>	<u>22.7 - 29.9</u>
<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>
<u>Flag (Evaluation): A = Acceptable, W = Acceptable with Warning, N = Not Acceptable</u>				