



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

September 4, 2001

L-2001-155  
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  
Annual Radiological Environmental Operating  
Report for Calendar Year 1999 - Correction

By letter L-2000-082 dated April 17, 2000, Florida Power & Light Company (FPL) submitted the St. Lucie Plant *Annual Radiological Environmental Operating Report* for calendar year 1999 pursuant to Technical Specification 6.9.1.8. During a recent quality assurance audit of the report, FPL identified errors in the report, as submitted. The errors and corrections are identified in the attached.

FPL has documented these errors in the St. Lucie Plant correction action program and has implemented the corrective actions. Corrected pages for the report are attached.

This letter provides corrections to the *Annual Radiological Environmental Operating Report* for 1999. With the corrected data, the measurements continue to verify that the dose or dose commitment to members of the public, due to operation of St. Lucie Units 1 and 2, during the 1999 surveillance year, are well within "as low as reasonably achievable (ALARA)" criteria established by 10 CFR 50, Appendix I. Please contact us should there be any questions regarding this information.

Very truly yours,

  
Donald E. Jernigan  
Vice President  
St. Lucie Plant

Attachments

DEJ/spt

cc: Regional Administrator, USNRC, Region II,  
Senior Resident Inspector, USNRC, St. Lucie Plant

JE25

## Annual Radiological Environmental Operating Report

### Calendar Year 1999 - Corrections

By letter L-2000-082 dated April 17, 2000, Florida Power & Light Company (FPL) submitted the St. Lucie Plant *Annual Radiological Environmental Operating Report* for calendar year 1999 pursuant to Technical Specification 6.9.1.8. During a recent quality assurance audit of the *1999 Annual Radiological Environmental Operating Report*, FPL identified errors in the report, as submitted. The errors and corrections are identified below.

- Page 4, Section III.B.3 of the report. The section incorrectly read "Two of twelve samples collected..." The section should read "Two of 52 samples collected..."
- Table 1 errors identified during review and comparison with the State of Florida report data.
  - For the PATHWAY: WATERBORNE, SAMPLES COLLECTED: SHORELINE SEDIMENT
    - The column "Type and Total Number of Analyses Performed – Gamma Isotopic, 4" for the isotope  $^{40}\text{K}$  for the mean range for this isotope in the columns "All Indicator Locations Mean (f) Range" and "Location with Highest Annual Mean – Mean (f)<sup>b</sup> Range" should read "906 (2/2)" in both columns, not "5 (2/2)."
    - The column "Type and Total Number of Analyses Performed – Gamma Isotopic, 4" for the isotope  $^{226}\text{Ra}$  for the mean range for this isotope in the columns "All Indicator Locations Mean (f) Range" and "Location with Highest Annual Mean – Mean (f)<sup>b</sup> Range" should read "374 (1/2)," not "371 (1/2)."
  - For the PATHWAY: INGESTION, SAMPLES COLLECTED: FISH
    - The column "Type and Total Number of Analyses Performed – Gamma Isotopic, 4" for the isotope  $^{40}\text{K}$ 
      - The mean range for this isotope in the columns "All Indicator Locations Mean (f) Range" and "Location with Highest Annual Mean – Mean (f)<sup>b</sup> Range" should read "2842 (2/2)," not "7 (2/2)."
      - The mean range for this isotope in the column "Control Locations Mean (f)<sup>b</sup> Range" should read "2410 (2)," not "7 (2)."

Attached are corrected replacement pages for page 4 of the report and the entire eight-page Table 1 section with corrections incorporated.

**Annual Radiological Environmental Operating Report**  
**Calendar Year 1999 – Corrected Pages**

**Page 4**

**Table 1 (eight pages)**

1999  
**ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT**  
**ST. LUCIE PLANT – UNITS 1 & 2**

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.

A review of the TLD processing methods was conducted February 4, 2000. This led to an improvement opportunity that was applied to the 1999 results. The 'corrected' results are within 10% of the original, were used in the compilation of this report and are inserted in the Attachment B quarterly reports. 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 preoperational 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 which were made during the preoperational surveillance program. Air particulate and radioiodine monitoring results are summarized in Table 1.

3. Surface Water:

Two of 52 samples collected at the indicator location identified Tritium. The highest reported value is less than 26% of the required LLD listed 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.

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, 1999  
 (County, State)

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

Type and Total Number of Analyses Performed	Lower Limit of Detection <sup>a</sup> (LLD)	All Indicator Locations Mean (f) Range	Location with Highest Annual Mean		Control Locations Mean (f) <sup>b</sup> Range
			Name <sup>c</sup>	Mean (f) <sup>b</sup>	
			Distance & Direction	Range	
Exposure Rate, 107 <sup>d</sup>	---	5.2 (103/103) 4.4 - 6.9	NW-10 10 mi., NW	6.5 (4/4) 6.0 - 6.9	5.4 (4/4) 5.0 - 6.0

Number of Nonroutine 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, 1999  
 (County, State)

PATHWAY: AIRBORNE  
 SAMPLES COLLECTED: RADIOIODINE AND PARTICULATES  
 UNITS: PICO - Ci/M<sup>3</sup>

Type and Total Number of Analyses Performed	Lower Limit of Detection <sup>a</sup> (LLD)	All Indicator Locations Mean (f) Range	Location with Highest Annual Mean		Control Locations Mean (f) <sup>b</sup> Range
			Name <sup>c</sup>	Mean (f) <sup>b</sup>	
			Distance & Direction	Range	
<sup>131</sup> I, 258	0.024	<MDA	---	---	<MDA
Gross Beta, 258	0.0025	0.004 (197/207) 0.004 - 0.021	H-14 1 mi., SE	0.013 (49/51) 0.006 - 0.020	0.012 (50/51) 0.004 - 0.022
Composite Gamma Isotopic, 20					
<sup>7</sup> Be	0.0052	0.12493 (16/16) 0.0603 - 0.1971	H-14 1 mi., SE	0.1436 (4/4) 0.0968 - 0.1971	0.1222 (4/4) 0.0649 - 0.1677
<sup>134</sup> Cs	0.00069	<MDA	---	---	<MDA
<sup>137</sup> Cs	0.00066	<MDA	---	---	<MDA
<sup>210</sup> Pb	---	0.0132 (16/16) 0.0079 - 0.0229	H-14 1 mi., SE	0.0166 (4/4) 0.0107 - 0.0229	0.0144 (4/4) 0.0118 - 0.0178

Number of Nonroutine Reported Measurements = 0

## ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM ANNUAL SUMMARY

Name of Facility St. Lucie Units 1 & 2, Docket No(s). 50-335 & 50-389Location of Facility St. Lucie, Florida, Reporting Period January 1 - December 31, 1999  
(County, State)

PATHWAY: WATERBORNE

SAMPLES COLLECTED: SURFACE WATER

UNITS: PICO - Ci/LITER

Type and Total Number of Analyses Performed	Lower Limit of Detection <sup>a</sup> (LLD)	All Indicator Locations Mean (f) Range	Location with Highest Annual Mean		Control Locations Mean (f) <sup>b</sup> Range
			Name <sup>c</sup> Distance & Direction	Mean (f) <sup>b</sup> Range	
Tritium, 64	230	461 (2/52)	H-15	461 (2/52)	<MDA
		176 - 746	<1 mi., ENE/E/ESE	176 - 746	
Gamma Isotopic, 64					
<sup>40</sup> K	60	338 (52/52) 249 - 409	H-15 <1 mi., ENE/E/ESE	338 (52/52) 249 - 409	335 (12/12) 269 - 408
<sup>54</sup> Mn	4	<MDA	---	---	<MDA
<sup>59</sup> Fe	8	<MDA	---	---	<MDA
<sup>58</sup> Co	4	<MDA	---	---	<MDA
<sup>60</sup> Co	4	<MDA	---	---	<MDA
<sup>65</sup> Zn	8	<MDA	---	---	<MDA
<sup>95</sup> Zr-Nb	7	<MDA	---	---	<MDA
<sup>131</sup> I	5	<MDA	---	---	<MDA
<sup>134</sup> Cs	5	<MDA	---	---	<MDA
<sup>137</sup> Cs	5	<MDA	---	---	<MDA
<sup>140</sup> Ba-La	11	<MDA	---	---	<MDA

Number of Nonroutine 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, 1999  
 (County, State)

PATHWAY: WATERBORNE  
 SAMPLES COLLECTED: SHORELINE SEDIMENT  
 UNITS: PICO - Ci/Kg, DRY

Type and Total Number of Analyses Performed	Lower Limit of Detection <sup>a</sup> (LLD)	All Indicator Locations Mean (f) Range	Location with Highest Annual Mean		Control Locations Mean (f) <sup>b</sup> Range
			Name <sup>c</sup>	Mean (f) <sup>b</sup>	
			Distance & Direction	Range	
Gamma Isotopic, 4					
<sup>40</sup> K	140	906 (2/2) 379 - 1433	H-15 <1 mi, ENE/E/ESE	906 (2/2) 379 - 1433	388 (2/2) 274 - 501
<sup>210</sup> Pb	---	615 (1/2)	H-15 <1 mi, ENE/E/ESE	615 (1/2)	<MDA
<sup>226</sup> Ra	49	374 (1/2)	H-15 <1 mi., ENE/E/ESE	374 (1/2)	246 (2/2) 187 - 304
<sup>232</sup> Th	---	177 (1/2)	H-15 <1 mi., ENE/E/ESE	177 (1/2)	146 (1/2)
<sup>238</sup> U	---	487 (1/2)	H-15 <1 mi., ENE/E/ESE	487 (1/2)	<MDA
<sup>58</sup> Co	9	<MDA	---	---	<MDA
<sup>60</sup> Co	12	<MDA	---	---	<MDA
<sup>134</sup> Cs	14	<MDA	---	---	<MDA
<sup>137</sup> Cs	12	<MDA	---	---	<MDA

Number of Nonroutine 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, 1999  
 (County, State)

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

Type and Total Number of Analyses Performed	Lower Limit of Detection <sup>a</sup> (LLD)	All Indicator Locations Mean (f) Range	Location with Highest Annual Mean		Control Locations Mean (f) <sup>b</sup> Range
			Name <sup>c</sup>	Mean (f) <sup>b</sup>	
			Distance & Direction	Range	
Gamma Isotopic, 4					
<sup>40</sup> K	130	836 (2/2) 475 - 1198	H-15 <1 mi., ENE/E/ESE	836 (2/2) 475 - 1198	1830 (2/2) 1514 - 2146
<sup>228</sup> Ra	---	<MDA	---	---	<MDA
<sup>54</sup> Mn	9	<MDA	---	---	<MDA
<sup>59</sup> Fe	16	<MDA	---	---	<MDA
<sup>58</sup> Co	9	<MDA	---	---	<MDA
<sup>60</sup> Co	19	<MDA	---	---	<MDA
<sup>65</sup> Zn	17	<MDA	---	---	<MDA
<sup>134</sup> Cs	9	<MDA	---	---	<MDA
<sup>137</sup> Cs	9	<MDA	---	---	<MDA

Number of Nonroutine 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, 1999  
 (County, State)

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

Type and Total Number of Analyses Performed	Lower Limit of Detection <sup>a</sup> (LLD)	All Indicator Locations Mean (f) Range	Location with Highest Annual Mean		Control Locations Mean (f) <sup>b</sup> Range
			Name <sup>c</sup>	Mean (f) <sup>b</sup>	
			Distance & Direction	Range	
Gamma Isotopic, 4					
<sup>40</sup> K	130	2842 (2/2) 2591 - 3094	H-15 <1 mi., ENE/E/ESE	2842 (2/2) 2591 - 3094	2410 (2/2) 2016 - 2805
<sup>54</sup> Mn	9	<MDA	---	---	<MDA
<sup>59</sup> Fe	16	<MDA	---	---	<MDA
<sup>58</sup> Co	9	<MDA	---	---	<MDA
<sup>60</sup> Co	10	<MDA	---	---	<MDA
<sup>65</sup> Zn	17	<MDA	---	---	<MDA
<sup>134</sup> Cs	9	<MDA	---	---	<MDA
<sup>137</sup> Cs	9	<MDA	---	---	<MDA

Number of Nonroutine 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, 1999  
(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 <sup>a</sup> (LLD)	All Indicator Locations Mean (f) Range	Location with Highest Annual Mean		Control Locations Mean (f) <sup>b</sup> Range
			Name <sup>c</sup>	Mean (f) <sup>b</sup>	
			Distance & Direction	Range	
Gamma Isotopic, 36					
<sup>7</sup> Be	71	896 (24/24) 283 - 2220	H-51 1 mi., N/NNW	910 (12/12) 462 - 2220	1042 (12/12) 563 - 2729
<sup>40</sup> K	100	4130 (24/24) 2728 - 5457	H-52 1 mi., S/SSE	4484 (12/12) 2788 - 5457	3390 (12/12) 1945 - 4621
<sup>210</sup> Pb	---	<MDA	---	---	<MDA
<sup>212</sup> Pb	---	<MDA	---	---	<MDA
<sup>131</sup> I	9	<MDA	---	---	<MDA
<sup>134</sup> Cs	8	<MDA	---	---	<MDA
<sup>137</sup> Cs	8	15 (1/24)	H-52 1 mi., S/SSE	15 (1/12)	9 (1/12)

Number of Nonroutine 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, 1999  
(County, State)

NOTES

- a. The LLD is an "a priori" lower limit of detection which establishes the smallest concentration of radioactive material in a sample that will yield a net count above system background that will be detected with 95% probability with only 5% probability of falsely concluding that a blank observation represents a real signal.

LLDs in this column are at time of measurement. The MDAs reported in Attachment B for the individual samples have been corrected to the time of sample collection.

- b. Mean and range based upon detectable measurements only. Fraction of detectable measurements at specified locations is indicated in parentheses (f).
- c. Specific identifying information for each sample location is provided in Attachment A.
- d. Results were based upon the average net response of three elements in a TLD. (Thermoluminescent Dosimeter).

MDA refers to minimum detectable activity.