RADIOLOGICAL SURVEILLANCE OF

FLORIDA POWER AND LIGHT COMPANY'S

ST. LUCIE SITE

SECOND QUARTER, 1985

Office of Radiation Control

Florida Department of Health
and Rehabilitative Services

ST. LUCIE SITE

Technical Specifications Sampling

Second Quarter, 1985

Sample Type	Collection Frequency	Locations Sampled	Number of Samples
1. Direct Radiation	Quarterly	27	54
2. Airborne			
2.a Air Iodines	Weekly	5	65
2.b Air Particulates	Weekly	5	69*
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	0
4.a.2 Fish	Semiannually	0	0
4.b Food Products			
4.b.1 Broadleaf Vegetation	Monthly	3	9
			Total: 213

* - Includes DOE split samples.

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 "non-detectable" (ND) or 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.

ST. LUCIE TECHNICAL SPECIFICATIONS SAMPLING

SECOND QUARTER, 1985

1. DIRECT RADIATION - TLDs - (micro-R/hour)

Each result is the average net response of two dosimeters.

Sample Site	Deployed 3-20-85 Collected 6-12-85	
N-1	5.2 ± 0.3	
NNW-5	5.2 ± 0.3	
NNW-10	5.0 ± 0.3	<< See Note 5.
NW-5	5.4 ± 0.3	
NW-10	6.3 ± 0.3	
WNW-2	5.2 ± 0.3	
WNW-5	5.2 ± 0.3	
WNW-10	5.2 ± 0.3	
W-2	5.7 ± 0.3	
W-5	5.3 ± 0.3	
W-10	4.9 ± 0.3	
WSW-2	5.1 ± 0.3	
WSW-5	5.3 ± 0.3	
WSW-10	4.9 ± 0.3	
SW-2	4.9 ± 0.3	
SW-5	4.8 ± 0.3	
SW-10	5.4 ± 0.3	
SSW-2	4.9 ± 0.3	
SSW-5	4.8 ± 0.3	
SSW-10	5.6 ± 0.3	
S-5	5.3 ± 0.3	
S-10	5.1 ± 0.3	
S/SSE-10	5.3 ± 0.3	<< See Note 6.
SSE-5	5.4 ± 0.3	
SSE-10	5.3 ± 0.3	
SE-1	5.0 ± 0.3	
H-32	6.1 ± 0.3	

NOTES:

1. The error terms reported above are based on an empirical statistical analysis of the differences in the results from the individual dosimeters at each site. As such, these error terms are representative of the typical error for such measurements rather than accurately representing the error terms for individual measurements.

2. These results have been determined with the assumption that fading is negligible, although detailed testing to confirm this has not been done.

3. Testing to confirm compliance with NRC Reg. Guide 4.13 and ANSI N545-1975 performance standards has not been completed.

** See notes 4, 5 and 6 on next page.

ST. LUCIE TECHNICAL SPECIFICATIONS SAMPLING

SECOND QUARTER, 1985

1. DIRECT RADIATION - TLDs - (micro-R/hour)

NOTES:

4. Except as described in Notes 5 and 6 the above results were determined using only two determinations of self-exposure rate for the dosimeters used rather than using three such determinations as required by HRS procedures.

5. One of the two dosimeters used at site NNW-10 had four self-exposure rate determinations, which exceeds the minimum requirement of three determinations for HRS Procedures.

6. One of the two dosimeters used at site S/SSE-10 was stolen during a later field deployment. As a result, only a single self-exposure rate determination was available to use with the results from this dosimeter rather than using three such determinations as required by HRS procedures.

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

Collection Date	Sample Site				
	H08	H12	H14	H30	H34
4-02-85	<0.02	<0.02	<0.02	<0.02	<0.02
4-09-85	<0.02	<0.02	<0.02	<0.02	<0.02
4-16-85	<0.03	<0.02	<0.02	<0.02	<0.02
4-23-85	<0.02	<0.02	<0.03	<0.03	<0.02
4-30-85	<0.03	<0.03	<0.03	<0.03	<0.03
5-07-85	<0.02	<0.02	<0.02	<0.02	<0.02
5-14-85	<0.02	<0.02	<0.02	<0.02	<0.02
5-21-85	<0.02	<0.02	<0.02	<0.02	<0.02
5-28-85	<0.02	<0.02	<0.02	<0.02	<0.02
6-04-85	<0.02	<0.02	<0.02	<0.02	<0.02
6-12-85	<0.02	<0.02	<0.02	<0.02	<0.02
6-18-85	<0.02	<0.03	<0.02	<0.02	<0.03
6-25-85	<0.03	<0.03	<0.03	<0.03	<0.03

2.b AIR PARTICULATES - GROSS BETA - (pCi/m^3)

Collection Date	Sample Site H08	H12	H14	H30	H34
4-02-85	0.017 ± 0.002	0.016 ± 0.002	0.015 ± 0.002	0.014 ± 0.002	0.015 ± 0.002
4-09-85	0.015 ± 0.002	0.014 ± 0.002	0.013 ± 0.002	0.013 ± 0.002	0.018 ± 0.002
4-16-85	0.015 ± 0.002	0.015 ± 0.002	0.010 ± 0.002	0.011 ± 0.002	0.013 ± 0.002
4-23-85	0.016 ± 0.002	0.016 ± 0.002	0.016 ± 0.002	0.013 ± 0.002	0.015 ± 0.002
4-30-85	0.034 ± 0.003	0.030 ± 0.002	0.032 ± 0.003	0.029 ± 0.002	0.029 ± 0.002
5-07-85	0.020 ± 0.002	0.013 ± 0.002	*0.011 ± 0.002	0.017 ± 0.002	0.011 ± 0.002
5-14-85	0.010 ± 0.002	0.011 ± 0.002	*0.010 ± 0.002	0.010 ± 0.002	0.009 ± 0.002
5-21-85	0.016 ± 0.002	0.017 ± 0.002	*0.008 ± 0.001	0.014 ± 0.002	0.017 ± 0.002
5-28-85	0.015 ± 0.002	0.014 ± 0.002	*0.008 ± 0.001	0.013 ± 0.002	0.017 ± 0.002
6-04-85	0.021 ± 0.002	0.017 ± 0.002	0.011 ± 0.002	0.018 ± 0.002	0.022 ± 0.002
6-12-85	0.021 ± 0.002	0.021 ± 0.002	0.018 ± 0.002	0.024 ± 0.002	0.022 ± 0.002
6-18-85	0.021 ± 0.002	0.024 ± 0.002	0.018 ± 0.002	0.020 ± 0.002	0.019 ± 0.002
6-25-85	0.021 ± 0.002	0.020 ± 0.002	0.011 ± 0.002	0.015 ± 0.002	0.012 ± 0.002
Means:	0.019 ± 0.001	0.018 ± 0.001	0.014 ± 0.001	.0.016 ± 0.001	0.017 ± 0.001

* - DOE split samples.

2.b AIR PARTICULATES - GAMMA SCANS OF QUARTERLY COMPOSITES - (pCi/m^3)

Second Quarter, 1985

Sample Site	Be-7	K-40	Cs-134	Cs-137
H08	0.118 ± 0.009	<0.018	<0.0007	<0.0007
H12	0.108 ± 0.010	<0.015	<0.0009	<0.0005
H14	0.083 ± 0.007	<0.012	<0.0008	<0.0007
H30	0.112 ± 0.008	<0.014	<0.0007	<0.0007
H34	0.103 ± 0.008	0.009 ± 0.004	<0.0005	<0.0006

3.a SURFACE WATER - (pCi/l)

Sample Site	Collection Date	H-3	K-40	Mn-54	Fe-59	Co-58	Co-60	Zn-65	Zr-95 Nb-95 (A)	I-131	Cs-134	Cs-137	Ba-140 La-140 (B)
H15	4-02-85	<220	360 ± 50	<5	<10	<4	<6	<12	<8	<7	<5	<5	<5
	4-09-85	<220	340 ± 50	<5	<10	<5	<5	<12	<8	<6	<5	<5	<6
	4-16-85	<220	380 ± 50	<5	<10	<5	<5	<13	<7	<6	<5	<4	<8
	4-23-85	<240	380 ± 50	<4	<9	<5	<4	<10	<9	<10	<4	<5	<5
	4-30-85	<220	340 ± 40	<3	<9	<4	<6	<11	<8	<9	<4	<4	<6
	5-07-85	<220	410 ± 40	<4	<9	<4	<6	<9	<8	<13	<4	<5	<8
	5-14-85	<220	340 ± 40	<4	<10	<5	<4	<9	<8	<9	<5	<5	<7
	5-21-85	<220	390 ± 40	<4	<9	<4	<5	<10	<9	<7	<5	<4	<3
	5-28-85	<220	350 ± 40	<3	<8	<4	<6	<8	<6	<5	<4	<4	<6
	6-04-85	<230	320 ± 40	<4	<8	<4	<5	<8	<7	<4	<4	<4	<8
	6-12-85	<230	370 ± 40	<5	<9	<5	<5	<9	<8	<11	<5	<4	<8
	6-18-85	<240	370 ± 40	<5	<8	<3	<5	<10	<6	<4	<5	<4	<9
	6-25-85	<230	340 ± 40	<4	<8	<3	<5	<7	<6	<8	<3	<4	<7
H59	4-03-85	<220	390 ± 50	<6	<9	<6	<3	<8	<8	<8	<5	<5	<6
	5-08-85	<220	340 ± 40	<4	<9	<4	<5	<10	<8	<4	<5	<4	<7
	6-04-85	<240	300 ± 40	<4	<10	<4	<5	<9	<7	<5	<4	<3	<5

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

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

4.b.1 BROAD LEAF VEGETATION - Mangrove - (pCi/kg, wet weight)

Sample Site	Collection Date	Be-7	K-40	I-131	Cs-134	Cs-137
H51	4-03-85	550 ± 50	2500 ± 100	<13	<9	<5
	5-08-85	400 ± 50	2900 ± 100	<18	<8	<8
	6-04-85	360 ± 40	2900 ± 100	<6	<7	<7
H52	4-03-85	690 ± 50	2000 ± 100	<13	<9	<6
	5-08-85	630 ± 40	1950 ± 90	<15	<7	<6
	6-04-85	490 ± 40	2700 ± 100	<6	<6	<8
H59	4-03-85	470 ± 50	1700 ± 100	<11	<8	<7
	5-08-85	480 ± 40	2200 ± 100	<19	<7	<7
	6-04-85	410 ± 40	2300 ± 100	<6	<7	<8