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U. S. Nuclear Regulatory Commission
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Washington, D.C. 20555

Gentlemen:

Re: Turkey Point Units 3 and 4
Docket Nos. 50-250 and 50-251
1994 Annual Radiological
Environmental Operating Report

Attached is the 1994 Annual Radiological Environmental Operating Report for Turkey Point Units 3 and 4, as required by Technical Specification 6.9.1.3.

Should there be any questions or comments regarding this information, please contact us.

Very truly yours,

T. F. Plunkett
Vice President
Turkey Point Plant

JEK

Attachment

cc: S. D. Ebneter, Regional Administrator, Region II, USNRC
T. P. Johnson, Sr. Resident Inspector, USNRC, Turkey Point Plant

JE25

1994

ANNUAL
RADIOLOGICAL ENVIRONMENTAL
OPERATING REPORT

TURKEY POINT PLANT
UNITS 3 & 4
LICENSE NOS. DPR-31, DPR-41
DOCKET NOS. 50-250, 50-251

Data submitted by: Florida DHRS

Prepared by: Peter G Byrdy 17 MAR 95

Reviewed by: J L Lanka 3/27/95

9505020194

1994
ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT
TURKEY POINT PLANT - UNITS 3 & 4

TABLE OF CONTENTS

1994
ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT
TURKEY POINT PLANT - UNITS 3 & 4

EXECUTIVE SUMMARY

The data obtained through the Turkey Point Radiological Environmental Monitoring Program verifies that the levels of radiation and concentrations of radioactive materials in environmental samples are not increasing. These measurements verify that the dose or dose commitment to members of the public, due to operation of Turkey Point Units 3 & 4, during the surveillance year, is well within the limits established by 10 CFR 50, Appendix I. The sampling period was from January 1, 1994 to December 31, 1994.

Additionally, supplemental samples collected by the State of Florida, HRS, do not indicate adverse trends in the radiological environment.

1994
ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT
TURKEY POINT PLANT - UNITS 3 & 4

I. INTRODUCTION

This report is submitted pursuant to Specification 6.9 of Turkey Point Units 3 & 4 Technical Specifications. The Annual Radiological Environmental Operating Report provides information, summaries and analytical results pertaining to the Radiological Environmental Monitoring Program for the calendar year indicated. This report covers surveillance activities meeting the requirements of Unit 3 and Unit 4 Technical Specifications.

II. RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

A. Purpose

The purpose of the Radiological Environmental Monitoring Program is to provide representative measurements of radiation and of radioactive materials in those exposure pathways and for those radionuclides which lead to the highest potential radiation exposures of members of the public resulting from station operation. The Radiological Environmental Monitoring Program also supplements the radiological effluent monitoring program by verifying that the measurable concentrations of radioactive materials and levels of radiation are not higher than expected on the basis of the effluent measurements and the modeling of the environmental exposure pathways.

B. Program Description

The Radiological Environmental Monitoring Program (REMP) for the Turkey Point Plant is conducted pursuant to Technical Specifications 3/4.12 of Turkey Point Unit 3 & 4 Technical Specifications.

1. Sample Locations, Types and Frequencies:

a. Direct radiation gamma exposure rate is monitored continuously at 21 locations by thermoluminescent dosimeters (TLDs). TLDs are collected and analyzed quarterly.

b. Airborne radioiodine and particulate samplers are operated continuously at five locations. Samples are collected and analyzed weekly. Analyses include Iodine-131, gross beta, and gamma isotopic measurements.

c. Surface water samples are collected from three locations. Samples are collected and analyzed monthly. Analyses include gamma isotopic and tritium measurements.

d. Shoreline sediment samples are collected from three 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 coinciding with two of the locations for surface water samples. Samples are collected and analyzed semi-annually. Fish and invertebrate samples are analyzed by gamma isotopic measurements.

f. Broad leaf vegetation samples are collected from three locations. Samples are collected and analyzed monthly. Broad leaf vegetation samples are analyzed by gamma isotopic measurements.

Attachment A provides specific information pertaining to sample locations, types and frequencies.

2. **Analytical Responsibility:**

Radiological environmental monitoring for the Turkey Point Plant is conducted by the State of Florida, Department of Health and Rehabilitative Services (HRS). Samples are collected and analyzed by HRS personnel.

Samples are analyzed at the HRS Environmental Radiation Control Laboratory in Orlando, Florida.

C. Analytical Results

Table 1, Environmental Radiological Monitoring Program Annual Summary provides a summary for all specified samples collected during the referenced surveillance period. Deviations from the sample schedule, missing data and/or samples not meeting the specified "A PRIORI" LLD, if any, are noted and explained in Tables 1A and 1B respectively. Analysis data for all specified samples analyzed during the surveillance period is provided in Attachment B.

D. Land Use Census

A land use census out to a distance of 5 miles radius from the Turkey Point Plant is conducted annually to determine the location of the nearest milk animal, residence, and garden producing broad leaf vegetation, in each of the sixteen meteorological sectors. A summary of the land use census for the surveillance year is provided in Table 2, Land Use Census Summary.

No locations yielding a calculated dose or dose commitment greater than the values currently being calculated were identified by the land use census.

No locations yielding a calculated dose or dose commitment (via the same exposure pathway) 20% greater than locations currently being sampled in the radiological environmental monitoring program were identified by the land use census.

E. Interlaboratory Comparison Program

The State of Florida HRS Environmental Radiation Control Laboratory participates in the Environmental Radioactivity Laboratory Intercomparison Studies Program conducted by the Environmental Protection Agency. Results from the Interlaboratory Comparison Program are provided in Attachment C.

III. DISCUSSION AND INTERPRETATION OF RESULTS

A. Reporting of Results

The Annual Radiological Environmental Operating Report contains the summaries, interpretations and information required by the Turkey Point Units 3 & 4 Technical Specifications. Table 1 provides a summary of the measurements made for the nuclides required by Technical Specifications, Table 3.12-2, for all samples specified by Table 3.12-1. In addition, summaries are provided for other nuclides identified in the specified samples, including those not related to station operation. These include nuclides such as K-40, Th-232, Ra-226, and Be-7 which are common in the Florida environment.

B. Interpretation of Results

1. **Direct Radiation:**

The results of direct radiation monitoring are consistent with past measurements for the specified locations. The exposure rate data show 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:**

Results of gross beta measurement are consistent with past measurements. No radioiodine was detected. The only identified isotopes are cosmic-ray produced Be-7 and naturally occuring K-40 at levels consistent with past measurements.

3. **Waterborne; Surface Water:**

The results of radioactivity measurements in surface water samples are consistent with past measurements. Tritium was reported as present in the surface water samples collected from sites T-81 and T-42. These results are consistent with the known subsurface interchange that occurs between the closed cooling canal and its surrounding waters, and the pressure gradients caused by the flow of aquifer subsurface waters in South Florida. The highest reported tritium is less than 1% of the reporting value specified by Technical Specifications, Table 3.12-2.

4. **Waterborne; Sediment:**

The results are consistent with past measurements; only naturally occurring radionuclides were detected.

5. **Food Products:**

The results are consistent with past measurements; only naturally occurring radionuclides were detected.

6. **Broad Leaf Vegetation:**

The results of radioactivity measurements are consistent with past measurements. Cs-137 was detected, as in the past, in samples collected from all locations. The maximum value is about 12% of the Table 3.12-2 reporting level. No other fission products were detected.

C. Conclusions

The data obtained through the Turkey Point Plant Radiological Environmental Monitoring Program verify that the levels of radiation and concentrations of radioactive materials in environmental samples, representing the highest potential exposure pathways to members of the public, are not being increased.

Additionally, supplemental to the Technical Specifications, sampling of the direct exposure, inhalation, and ingestion pathways, performed by HRS, does not show adverse trends in levels of radiation and radioactive materials in unrestricted areas. The measurements verify that the dose or dose commitment to members of the public, due to operation of Turkey Point Units 3 & 4, during the surveillance year, are well within "as low as reasonably achievable (ALARA)" criteria established by 10 CFR 50, Appendix I.

TABLE 1

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM ANNUAL SUMMARY
Name of Facility Turkey Point Units 3 & 4, Docket No(s). 50-250 & 50-251
Location of Facility Dade, Florida, Reporting Period January 1 - December 31, 1994
(County, State)

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

Type and Total Number of Analyses Performed	Lower Limit of Detection[a] (LLD)	All Indicator Locations Mean (f) Range	Location with Highest Annual Mean: Name[c] Distance & Direction	Location with Highest Annual Mean: Mean (f)[b] Range	Control Locations Mean (f)[b] Range
Exposure Rate, 78[d]	---	5.18 (74/74) 4.23 - 7.68	NW-10 10 mi., NW	7.62 (2/2) 7.55 - 7.68	6.05 (4/4) 6.04 - 6.05

Number of Nonroutine Reported Measurements = 0

TABLE 1

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM ANNUAL SUMMARY
Name of Facility Turkey Point Units 3 & 4, Docket No(s). 50-250 & 50-251
Location of Facility Dade, Florida, Reporting Period January 1 - December 31, 1994
(County, State)

PATHWAY: AIRBORNE
SAMPLES COLLECTED: RADIOIODINE AND PARTICULATES
UNITS: pCi/m^3

Type and Total Number of Analyses Performed	Lower Limit of Detection[a] (LLD)	All Indicator Locations Mean (f) Range	Location with Highest Annual Mean: Name[c] Distance & Direction	Location with Highest Annual Mean: Mean (f)[b] Range	Control Locations Mean (f)[b] Range
^{131}I, 260	0.024	<MDA	---	---	<MDA
Gross Beta, 260	0.0025	0.012 (205/208) 0.003 - 0.022	T-52 0.7 mi., W	0.014 (26/26) 0.006 - 0.022	0.012 (52/52) 0.005 - 0.022
Composite Gamma Isotopic, 20					
^{7}Be	0.0052	0.1190 (16/16) 0.084 - 0.1433	T-58 1 mi., NW	0.1316 (4/4) 0.1215 - 0.1433	0.1318 (4/4) 0.1071 - 0.1551
^{210}Pb	----	0.0112 (16/16) 0.0065 - 0.0159	T-72 <1 mile, WSW	0.0121 (4/4) 0.0081 - 0.0153	0.0110 (4/4) 0.0077 - 0.0137
^{134}Cs	0.00069	<MDA	---	---	<MDA
^{137}Cs	0.00066	<MDA	---	---	<MDA

Number of Nonroutine Reported Measurements = 0

TABLE 1

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM ANNUAL SUMMARY
Name of Facility Turkey Point Units 3 & 4, Docket No(s). 50-250 & 50-251
Location of Facility Dade, Florida, Reporting Period January 1 - December 31, 1994
(County, State)

PATHWAY: WATERBORNE
SAMPLES COLLECTED: SURFACE WATER
UNITS: pCi/L

Type and Total Number of Analyses Performed	Lower Limit of Detection[a] (LLD)	All Indicator Locations Mean (f) Range	Location with Highest Annual Mean: Name[c] Distance & Direction	Location with Highest Annual Mean: Mean (f)[b] Range	Control Locations Mean (f)[b] Range
Tritium, 36	230	197 (11/24) 112 - 299	T-81 6 mi., S	206 (10/12) 131 - 299	<MDA
Gamma Isotopic, 36					
^{40}K	60	279 (24/24) 135 - 399	T-81 6 mi., S	293 (12/12) 231 - 399	237 (11/12) 133 - 338
^{54}Mn	4	<MDA	---	---	<MDA
^{59}Fe	8	<MDA	---	---	<MDA
^{58}Co	4	<MDA	---	---	<MDA
^{60}Co	4	<MDA	---	---	<MDA
^{65}Zn	8	<MDA	---	---	<MDA
^{95}Zr-Nb	7	<MDA	---	---	<MDA
^{131}I	5	<MDA	---	---	<MDA
^{134}Cs	5	<MDA	---	---	<MDA
^{137}Cs	5	<MDA	---	---	<MDA
^{140}Ba-La	11	<MDA	---	---	<MDA

Number of Nonroutine Reported Measurements = 0

TABLE 1

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM ANNUAL SUMMARY
Name of Facility Turkey Point Units 3 & 4, Docket No(s). 50-250 & 50-251
Location of Facility Dade, Florida, Reporting Period January 1 - December 31, 1994
(County, State)

PATHWAY: WATERBORNE
SAMPLES COLLECTED: SHORELINE SEDIMENT
UNITS: pCi/kg, DRY

Type and Total Number of Analyses Performed	Lower Limit of Detection[a] (LLD)	All Indicator Locations Mean (f) Range	Location with Highest Annual Mean: Name[c] Distance & Direction	Mean (f)[b] Range	Control Locations Mean (f)[b] Range
Gamma Isotopic, 6					
^{7}Be	100	188 (4/4) 109 - 224	T-42 <1 mi., ENE	210 (2/2) 196 - 224	<MDA
^{40}K	140	428 (4/4) 321 - 490	T-42 <1 mi., ENE	463 (2/2) 436 - 490	372 (2/2) 319 - 425
^{232}Th	52	<MDA	-----	----	40 (1/2)
^{226}Ra	49	580 (4/4) 386 - 778	T-42 <1 mi., ENE	716 (2/2) 655-778	110 (2/2) 108-111
^{235}U	---	85 (2/4) 73 - 97	T-42 <1 mi., ENE	97 (1/2)	<MDA
^{58}Co	9	<MDA	---	---	<MDA
^{60}Co	12	<MDA	---	---	<MDA
^{134}Cs	14	<MDA	---	---	<MDA
^{137}Cs	12	<MDA	---	---	<MDA

Number of Nonroutine Reported Measurements = 0

TABLE 1

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM ANNUAL SUMMARY
Name of Facility Turkey Point Units 3 & 4, Docket No(s). 50-250 & 50-251
Location of Facility Dade, Florida, Reporting Period January 1 - December 31, 1994
(County, State)

PATHWAY: INGESTION
SAMPLES COLLECTED: CRUSTACEA
UNITS: pCi/kg, WET

Type and Total Number of Analyses Performed	Lower Limit of Detection[a] (LLD)	All Indicator Locations Mean (f) Range	Location with Highest Annual Mean: Name[c] Distance & Direction	Location with Highest Annual Mean: Mean (f)[b] Range	Control Locations Mean (f)[b] Range
Gamma Isotopic, 4					
^{40}K	130	1108 (2/2) 981 - 1236	T-81 6 mi., S	1108 (2/2) 981 - 1236	934 (2/2) 904 - 964
^{226}Ra	20	206 (1/2)	T-81 6 mi., S	206 (1/2)	<MDA
^{54}Mn	9	<MDA	---	---	<MDA
^{59}Fe	16	<MDA	---	---	<MDA
^{58}Co	9	<MDA	---	---	<MDA
^{60}Co	19	<MDA	---	---	<MDA
^{65}Zn	17	<MDA	---	---	<MDA
^{134}Cs	9	<MDA	---	---	<MDA
^{137}Cs	9	<MDA	---	---	<MDA

Number of Nonroutine Reported Measurements = 0

TABLE 1

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM ANNUAL SUMMARY
Name of Facility Turkey Point Units 3 & 4, Docket No(s). 50-250 & 50-251
Location of Facility Dade, Florida, Reporting Period January 1 - December 31, 1994
(County, State)

PATHWAY: INGESTION
SAMPLES COLLECTED: FISH
UNITS: pCi/kg, WET

Type and Total Number of Analyses Performed	Lower Limit of Detection[a] (LLD)	All Indicator Locations Mean (f) Range	Location with Highest Annual Mean: Name[c] Distance & Direction	Location with Highest Annual Mean: Mean (f)[b] Range	Control Locations Mean (f)[b] Range
Gamma Isotopic, 4					
^{40}K	130	2670 (2/2) 2464 - 2876	T-81 6 mi., S	2670 (2/2) 2464 - 2876	2595 (2/2) 2371 - 2819
^{54}Mn	9	<MDA	---	---	<MDA
^{59}Fe	16	<MDA	---	---	<MDA
^{58}Co	9	<MDA	---	---	<MDA
^{60}Co	10	<MDA	---	---	<MDA
^{65}Zn	17	<MDA	---	---	<MDA
^{134}Cs	9	<MDA	---	---	<MDA
^{137}Cs	9	<MDA	---	---	<MDA

Number of Nonroutine Reported Measurements = 0

TABLE 1

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM ANNUAL SUMMARY
Name of Facility Turkey Point Units 3 & 4, Docket No(s). 50-250 & 50-251
Location of Facility Dade, Florida, Reporting Period January 1 - December 31, 1994
(County, State)

PATHWAY: INGESTION
SAMPLES COLLECTED: BROAD LEAF VEGETATION
UNITS: pCi/kg, WET

Type and Total Number of Analyses Performed	Lower Limit of Detection[a] (LLD)	All Indicator Locations Mean (f) Range	Location with Highest Annual Mean: Name[c] Distance & Direction	Location with Highest Annual Mean: Mean (f)[b] Range	Control Locations Mean (f)[b] Range
Gamma Isotopic, 36					
^{7}Be	71	1708 (24/24) 974 - 2976	T-40 3 mi., W	1852 (12/12) 1107 - 2976	972 (12/12) 637 - 1501
^{40}K	100	3788 (24/24) 2495 - 5148	T-41 2 mi., W/NW	3904 (12/12) 2956 - 5049	4035 (12/12) 3031 - 5711
^{137}Cs	8	103 (23/24) 14 - 236	T-41 2 mi., W/NW	135 (11/12) 39 - 236	30 (1/12)
^{210}Pb	---	688 (2/24) 636 - 739	T-40 3 mi., W	688 (2/12) 636- 739	307 (1/12)
^{131}I	9	<MDA	---	---	<MDA
^{134}Cs	8	<MDA	---	---	<MDA

Number of Nonroutine Reported Measurements = 0

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM ANNUAL SUMMARY
Name of Facility Turkey Point Units 3 & 4
Docket No.(s) 50-250 and 50-251
Location of Facility Dade, Florida
(County, State)
Reporting Period January 1 - December 31, 1994

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 are based upon the average net response of two TLDs. (Thermoluminescent dosimeters).

MDA refers to minimum detectable activity.

TABLE 1A
DEVIATIONS/MISSING DATA

A) **Pathway:** Direct Exposure - TLDs

Location: N-7, 7 Miles North

Date: 12/14/93 to 03/22/94

Deviation: Failure to provide continuous monitoring.

Description of Problem: TLD reader failure during readout cycle.

Corrective Action: Repair of TLD reader.

B) **Pathway:** Direct Exposure - TLDs

Location	Quarter & Date of Missing Data
NW-5	1 & 2, 12/14/93 to 6/8/94
NW-5	4, 9/22/94 to 12/7/94
NW-10	1, 12/14/93 to 3/22/94
NW-10	3, 6/8/94 to 9/22/94
WNW-10	2,3,&4, 3/22/94 to 12/7/94

Deviation: Failure to provide continuous monitoring.

Description of Problem: TLDs were missing when collection was attempted.

Corrective Action: Replaced TLDs. Relocation of the replacements for those prone to tampering has been somewhat successful.

TABLE 1A
DEVIATIONS/MISSING DATA

C) **Pathway:** Airborne - Radioiodines & Particulates, weekly sampling

Location: T-58, 1 mile NW

Dates: 07/19/94 to 07/25/94 and 07/25/94 to 8/3/94

Deviation: Failure to provide continuous monitoring.

Description of Problem: Power source failure about one day into the first sampling period; power restored about one day into the second sampling period.

Corrective Action: Verified operability of sampling equipment upon notification of power restoration.

D) **Pathway:** Airborne - Radioiodines & particulates, weekly sampling.

Location	Sampling Period	% Typ Sample
T-72 <1 mi., WSW	7/19/94 to 7/25/94	88%
T-57 4 NW	8/3/94 to 8/10/94	88%
T-72 <1 mi., WSW	8/22/94 to 8/30/94	75%
T-72 <1 mi., WSW	12/6/94 to 12/13/94	89%

Deviation: Failure to provide continuous monitoring.

Description of Problem: Suspected power interruptions during sampling period, based upon integrated sample volume not meeting expectations.

Corrective Action: Verified operability of the sampling equipment; note, the sampling pumps self-start at the end of a power interruption.

TABLE 1B

ANALYSES WITH LLDs ABOVE TABLE 4.12-1 DETECTION CAPABILITIES
1/1/94 - 12/31/94

A) Analysis: Iodine - 131 in weekly air filters.

Sampling Location: T-64 (Control Location), 22 miles NNE

Sampling Period: 2/8/94 to 2/16/94

Required LLD: 0.07 pCi/m^3

LLD Achieved: 2.49 pCi/m^3

Cause: Sample cartridge misplaced upon receipt at laboratory. Cartridge discovered and analyzed 5/2/94. Long delay time precluded achieving required sensitivity.

TABLE 2

LAND USE CENSUS

Distance to Nearest (a, b)

Sector	6/94 Milk (c) Animal	6/94 Residence	6/94 Garden (d)
N	L (e)	2.1/350 (g)	L
NNE	O (f)	O	O
NE	O	O	O
ENE	O	O	O
E	O	O	O
ESE	O	O	O
SE	O	O	O
SSE	O	O	O
S	L	L	O
SSW	L	L	L
SW	L	L	L
WSW	L	L	L
W	L	L	L
WNW	L	3.6/302 (h)	4.3/303
NW	3.7/315 (i)	L (g)	3.6/308
NNW	4.5/327 (i)	4.7/328	4.0/328

TABLE 2

LAND USE CENSUS

NOTES

a. All categories surveyed out to 5 miles radius from the Turkey Point Plant.

b. The following format is used to denote the location:

distance (miles)/bearing (degrees)

For example, a residence located in the north sector at a distance of 2.1 miles bearing 350 degrees is recorded as 2.1/350.

c. Potential milk animal locations.

d. Gardens with an estimated growing area of 500 square feet or more.

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

f. O denotes that the sector area is predominantly an ocean area.

g. Non-residential occupied buildings in these sectors include the following:

Sector	Distance	Description
N	1.8/349	24-hour Security Staffing Building
NW	3.5/304	24-hour Security Staffing
NNW	4.5/327	Mobile homes used for field offices
NNW	1.8/345	Security booth at park entrance

h. This house has been converted into a construction office

i. The status of the goats identified at these locations are unknown. The property owners have been unresponsive to numerous attempts to discuss the animals.

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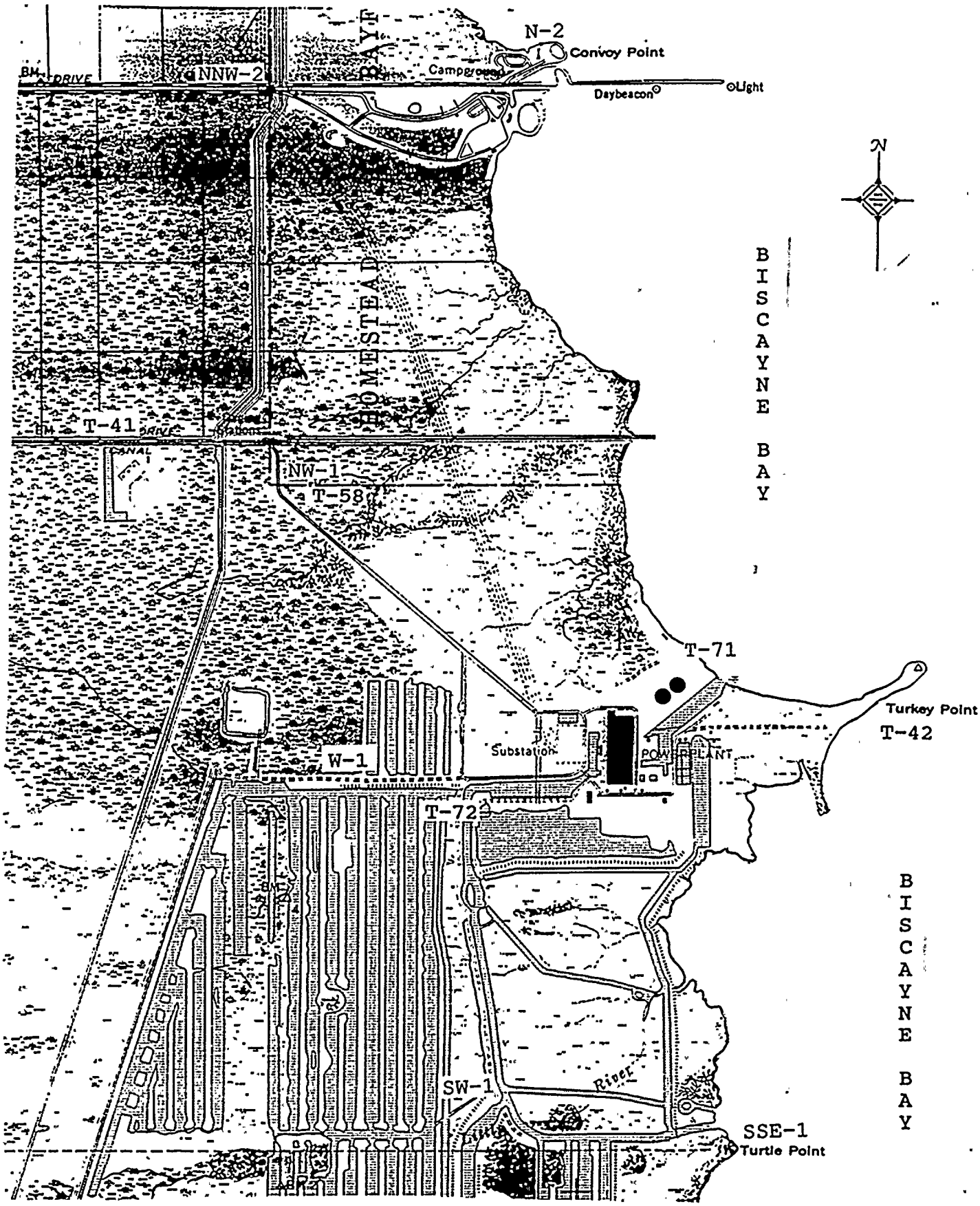
TURKEY POINT PLANT, UNITS 3 & 4

ATTACHMENT A

KEY TO SAMPLE LOCATIONS



Turkey Point Sampling Locations
Plant Site Area

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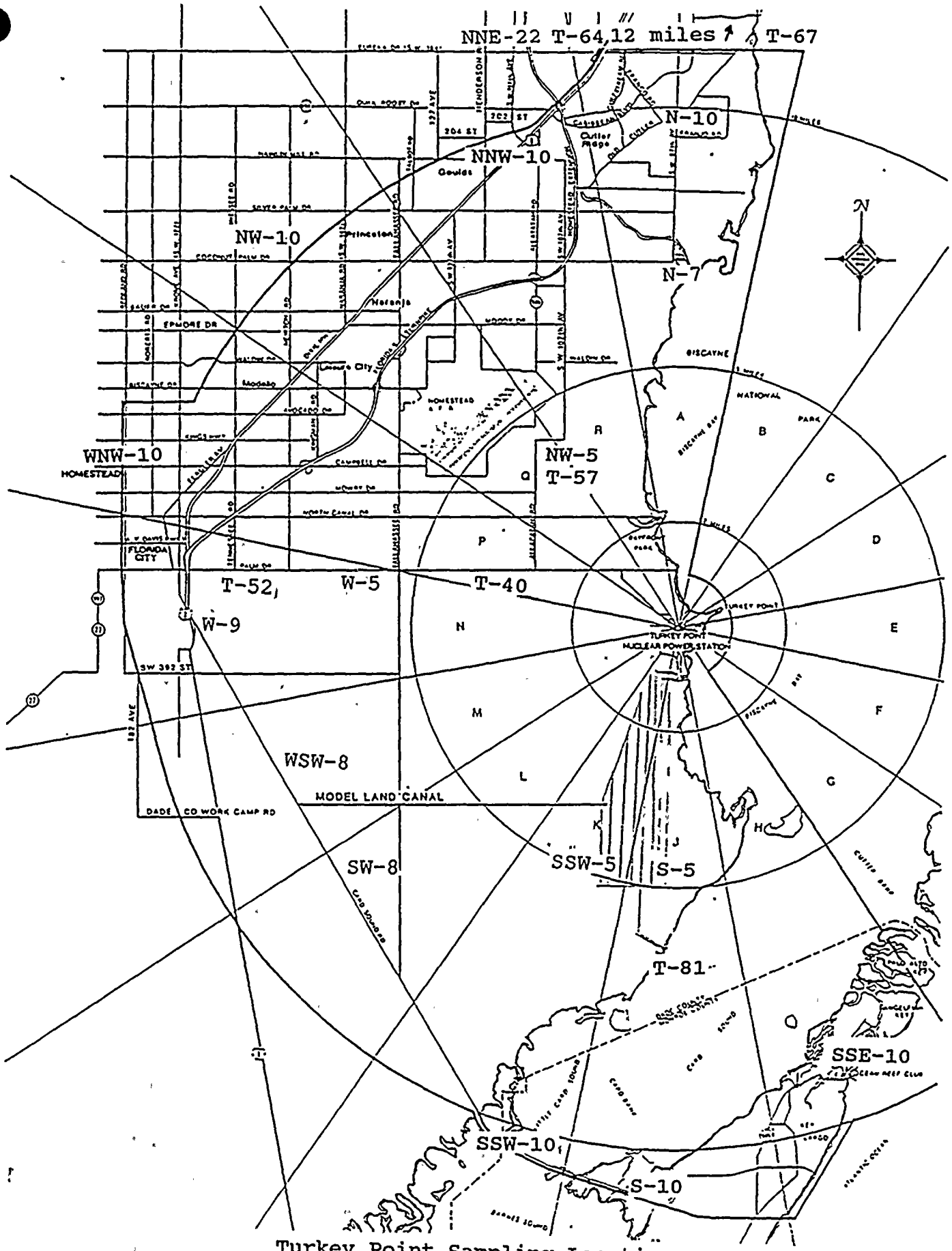
TURKEY POINT PLANT, UNITS 3 & 4



Turkey Point Sampling Locations

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TURKEY POINT PLANT, UNITS 3 & 4

ATTACHMENT A

KEY TO SAMPLE LOCATIONS

ATTACHMENT A

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

Location[a]

Name	Description
N-2	Convoy Point, Parking Area
N-7	Black Point Marina Parking Lot
N-10	Old Cutler Rd. approx. 196th Street
NNW-2	East End North Canal Road
NNW-10	Bailes Road & U.S. #1
NW-1	Turkey Point Entrance Road
NW-5	Mowry Drive & 117th Avenue
NW-10	Newton Road, North of Coconut Palm Drive
WNW-10	Homestead Middle School
W-1	On-Site, North Side of Discharge Canal
W-5	Palm Drive & Tallahassee Road
W-9	Card Sound Road, 0.6 mile from U.S. #1
WSW-8	Card Sound Road, 3.4 miles from U.S. #1
SW-1	On-Site near Land Utilization Offices
SW-8	Card Sound Road, 5 miles from U.S. #1
SSW-5	On-Site, Southwest Corner of Cooling Canals
SSW-10	Card Sound Road, west side of Toll Plaza
S-5	On-Site, South East Corner of Cooling Canals
S-10	Card Sound Road at Steamboat Creek
SSE-1	Turtle Point
SSE-10	Ocean Reef
Control	
NNE-22	Natoma Substation

[a]The location name is the direction sector - approximate distance (miles)

ATTACHMENT A

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

Location Name	Direction Sector	Approximate Distance (miles)	Description
T-51	NNW	2	Entrance Area to Biscayne National Park
T-52	W	7	Florida City Substation Interim - Alternate to T-51
T-57	NW	4	SW 107th Avenue at Mowry Canal
T-58	NW	1	Turkey Point Entrance Road
T-72	WSW	<1	Just before entrance to Land Utilization's access gate.
Control:			
T-64	NNE	22	Natoma Substation

ATTACHMENT A

PATHWAY: WATERBORNE
SAMPLES COLLECTED: SURFACE WATER (OCEAN)
SAMPLE COLLECTION FREQUENCY: MONTHLY

Location Name	Direction Sector	Approximate Distance (miles)	Description
T-42	ENE	<1	Biscayne Bay at Turkey Point
T-81	S	6	Card Sound, near Mouth of Old Discharge Canal
Control:			
T-67	N, NNE	13-18	Near Biscayne Bay, Vicinity of Cutler Plant, North to Matheson Hammock Park

SAMPLES COLLECTED: SHORELINE SEDIMENT
SAMPLE COLLECTION FREQUENCY: SEMI-ANNUALLY

Location Name	Direction Sector	Approximate Distance (miles)	Description
T-42	ENE	<1	Biscayne Bay at Turkey Point
T-81	S	6	Card Sound, near Mouth of Old Discharge Canal
Control:			
T-67	N, NNE	13-18	Near Biscayne Bay, Vicinity of Cutler Plant, North to Matheson Hammock Park

ATTACHMENT A

PATHWAY: INGESTION
SAMPLES COLLECTED: CRUSTACEA AND FISH
SAMPLE COLLECTION FREQUENCY: SEMI-ANNUALLY

Location Name	Direction Sector	Approximate Distance (miles)	Description
T-81	S	6	Card Sound Vicinity of Turkey Point Facility
Control:			
T-67	N, NNE	13-18	Near Biscayne Bay, Vicinity of Cutler Park, North to Matheson Hammock Park

SAMPLES COLLECTED: BROAD LEAF VEGETATION
SAMPLE COLLECTION FREQUENCY: MONTHLY

Location Name	Direction Sector	Approximate Distance (miles)	Description
T-40	W	3	South of Palm Dr. on S.W. 117th Street Extension
T-41	WNW	2	Palm Dr., West of Old Missile Site near Plant Site Boundary
Control:			
T-67	N, NNE	13-18	Near Biscayne Bay, Vicinity of Cutler Park, North to Matheson Hammock Park

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ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT
TURKEY POINT PLANT, UNITS 3 & 4

ATTACHMENT B

RADIOLOGICAL SURVEILLANCE OF

FLORIDA POWER AND LIGHT COMPANY'S

TURKEY POINT SITE

1994

First Quarter, 1994

Second Quarter, 1994

Third Quarter, 1994

Fourth Quarter, 1994

RADIOLOGICAL SURVEILLANCE OF FLORIDA POWER AND LIGHT COMPANY'S TURKEY POINT SITE

First Quarter, 1994

Office of Radiation Control

Florida Department of Health
and Rehabilitative Services

TURKEY POINT SITE

Technical Specifications Sampling

First Quarter, 1994

Sample Type	Collection Frequency	Locations Sampled	Number of Samples
1. Direct Radiation	Quarterly	22	20
2. Airborne			
2.a Air Iodines	Weekly	5	65
2.b Air Particulates	Weekly	5	69*
3. Waterborne			
3.a Surface Water	Monthly	3	9
3.b Shoreline Sediment	Semiannually	3	3
4. Ingestion			
4.a Fish and Invertebrates			
4.a.1 Crustacea	Semiannually	2	1
4.a.2 Fish	Semiannually	2	0
4.b Food Products			
4.b.1 Broadleaf Vegetation	Monthly	3	9
			Total: 176

* - Includes NRC 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 <u>not</u> 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.

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

Sample Site		Deployment 12-14-93 Collection 03-22-94
N-2		5.64 ± 0.16
N-7	(A)	
N-10		5.28 ± 0.17
NNW-2		4.50 ± 0.14
NNW-10		5.66 ± 0.17
NW-1		4.68 ± 0.25
NW-5	(B)	
NW-10	(B)	
WNW-10		6.41 ± 0.17
W-1		6.69 ± 0.18
W-5	(C)	4.89 ± 0.15
W-9		4.88 ± 0.15
WSW-8		5.25 ± 0.16
SW-1	(C)	5.56 ± 0.16
SW-8		4.97 ± 0.16
SSW-5		5.07 ± 0.16
SSW-10	(C)	5.42 ± 0.18
S-5		4.91 ± 0.21
S-10		5.58 ± 0.15
SSE-1	(C)	4.91 ± 0.17
SSE-10		5.76 ± 0.16
NNE-22		6.04 ± 0.18

(A) - The results for site N-7 were lost due to malfunction of the dosimeter.

(B) - The dosimeters for sites NW-5 and NW-10 were missing when collection was attempted.

(C) - This dosimeters at sites W-5, SW-1, SSW-10, S-10, and SSE-1 were found lying on the ground near where they had been deployed.

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

Collection Date	Sample Site T51	T52	T58	T64	T72
01-04-94	<0.02	<0.02	<0.02	<0.02	<0.02
01-13-94	<0.02	<0.03	<0.03	<0.03	<0.03
01-18-94	<0.04	<0.03	<0.03	<0.03	<0.03
01-25-94	<0.04	<0.04	<0.04	<0.04	<0.04
02-02-94	<0.02	<0.02	<0.02	<0.02	<0.02
02-08-94	<0.02	<0.03	<0.02	<0.02	<0.03
02-16-94	<0.03(A)	<0.03	<0.03	<2.49(B)	<0.03
02-22-94	<0.02	<0.02	<0.02	<0.02	<0.02(C)
03-01-94	<0.01	<0.02	<0.01	<0.01	<0.02
03-07-94	<0.02	<0.02	<0.02	<0.02	<0.02
03-17-94	<0.02	<0.02	<0.02	<0.02	<0.02
03-23-94	<0.02	<0.02	<0.02	<0.02	<0.02
03-31-94	<0.01	<0.01	<0.01	<0.01	<0.01

(A) - The new filter being deployed at site T51 got mixed up with the old filter being collected at this site. Both filters were sent in for analysis, and neither filter had any measurable activity.

(B) - This iodine filter cartridge for site T64 was accidentally left in the shipping carton when these filters were received for analysis on 02-22-94. This oversight was not discovered due to the presence of the extra cartridge from site T51. The misplaced filter for site T64 was discovered on 05-02-94, when the carton had been reused to ship a later batch of air filters. This T64 filter was analyzed on 05-02-94, but the required sensitivity of <0.07 pCi/m^3 could not be achieved due to the long delay before this analysis was performed.

(C) - At the beginning of this sampling interval, the equipment for site T72 was moved from a location inside a security fence to a more accessible location just outside the fence in the same general direction from and slightly closer to the nuclear generating units.

Supplementary air sample site T52 is now being temporarily used as a substitute for Technical Specifications site T57, which was destroyed by Hurricane Andrew.

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

Collection Date	Sample Site T51	T52	T58	T64	T72
01-04-94	0.008 ± 0.002	0.011 ± 0.002	0.009 ± 0.002	0.012 ± 0.002	0.011 ± 0.002
01-13-94	0.010 ± 0.001	0.013 ± 0.002	0.010 ± 0.002	0.011 ± 0.002	0.011 ± 0.002
01-18-94	0.008 ± 0.003	0.013 ± 0.003	0.013 ± 0.003	0.011 ± 0.003	0.012 ± 0.003
01-25-94	0.012 ± 0.002	0.010 ± 0.002	0.013 ± 0.002	0.013 ± 0.002	0.011 ± 0.002
02-02-94	0.007 ± 0.002	0.009 ± 0.002	0.005 ± 0.001	0.012 ± 0.002	0.005 ± 0.001
02-08-94	0.015 ± 0.002	0.022 ± 0.003	*0.013 ± 0.002	0.017 ± 0.002	0.014 ± 0.002
02-16-94	0.007 ± 0.002	0.009 ± 0.002	*0.008 ± 0.002	0.009 ± 0.002	0.009 ± 0.002
02-22-94	0.004 ± 0.002	0.006 ± 0.002	*0.006 ± 0.002	0.007 ± 0.002	(A0.006 ± 0.002
03-01-94	0.010 ± 0.002	0.009 ± 0.002	*0.012 ± 0.002	0.008 ± 0.002	0.009 ± 0.002
03-07-94	0.015 ± 0.002	0.018 ± 0.002	0.014 ± 0.002	0.013 ± 0.002	0.011 ± 0.002
03-17-94	0.014 ± 0.002	0.017 ± 0.002	0.015 ± 0.002	0.017 ± 0.002	0.015 ± 0.002
03-23-94	0.014 ± 0.002	0.017 ± 0.002	0.015 ± 0.002	0.014 ± 0.002	0.014 ± 0.002
03-31-94	0.013 ± 0.002	0.016 ± 0.002	0.015 ± 0.002	0.014 ± 0.002	0.011 ± 0.002
Means:	0.011 ± 0.001	0.013 ± 0.001	0.011 ± 0.001	0.012 ± 0.001	0.011 ± 0.001

* - NRC split samples.

(A) - At the beginning of this sampling interval, the equipment for site T72 was moved from a location inside a security fence to a more accessible location just outside the fence in the same general direction from and slightly closer to the nuclear generating units.

Supplementary air sample site T52 is now being temporarily used as a substitute for Technical Specifications site T57, which was destroyed by Hurricane Andrew.

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

First Quarter, 1994

Sample Site	Be-7	K-40	Cs-134	Cs-137	Pb-210 (A)
T51	0.1289 ± 0.0112	<0.0151	<0.0005	<0.0007	0.0105 ± 0.0022
T52	0.1520 ± 0.0114	<0.0151	<0.0008	<0.0007	0.0095 ± 0.0026
T58	0.1323 ± 0.0100	<0.0159	<0.0006	<0.0008	0.0089 ± 0.0025
T64	0.1551 ± 0.0103	<0.0162	<0.0009	<0.0008	0.0137 ± 0.0032
T72	0.1344 ± 0.0096	<0.0155	<0.0009	<0.0008	0.0153 ± 0.0027

(A) - Pb-210 is a radionuclide which is often naturally present in air filter samples. Our gamma analyses in the past have often indicated the qualitative presence of Pb-210, but these results were not reported because accurate measurement was not possible due to the low-energy cutoff of the detector used. With the recent acquisition of a new detector, we are now better able to quantify the measurement of Pb-210, and, beginning with this group of samples, we will be reporting the Pb-210 results.

Supplementary air sample site T52 is now being temporarily used as a substitute for Technical Specifications site T57, which was destroyed by Hurricane Andrew.

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)
T42	01-14-94	<130	288 ± 46	<5	<5	<11	<6	<7	<8	<7	<5	<5	<6
	02-07-94	<131	235 ± 37	<5	<4	<9	<5	<9	<7	<6	<5	<4	<7
	03-24-94	112 ± 43	232 ± 31	<3	<4	<6	<5	<8	<6	<5	<4	<4	<6
T67	01-14-94	<130	332 ± 50	<5	<4	<9	<7	<10	<7	<8	<5	<5	<8
	02-07-94	<131	275 ± 40	<3	<4	<12	<5	<14	<6	<8	<5	<4	<8
	03-24-94	<134	338 ± 38	<4	<3	<8	<5	<7	<7	<6	<4	<4	<7
T81	01-14-94	131 ± 42	240 ± 38	<5	<4	<10	<6	<13	<7	<7	<5	<4	<5
	02-04-94	238 ± 44	342 ± 41	<5	<4	<9	<5	<12	<8	<6	<5	<4	<8
	03-22-94	203 ± 44	295 ± 31	<3	<4	<8	<5	<9	<7	<6	<4	<4	<5

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

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

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

Sample Site	Collection Date	Be-7	K-40	Co-58	Co-60	Cs-134	Cs-137	Others
T42	01-05-94	224 ± 64	490 ± 103	<15	<17	<17	<15	Ra-226: 778 ± 29 U-235: 97 ± 42
T67	01-07-94	<90	319 ± 63	<8	<7	<10	<7	Ra-226: 108 ± 10
T81	01-05-94	109 ± 43	321 ± 67	<11	<11	<14	<11	Ra-226: 386 ± 18 Th-232: 73 ± 21

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

Sample Site	Collection Date	K-40	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Cs-134	Cs-137	Ra-226	Ra-228
T67	Collection attempts could not be scheduled in the first quarter. Efforts continue.										
T81	03-02-94	1236 ± 198	<25	<25	<57	<24	<53	<29	<29	206 ± 31	ND

4.a.2 FISH - Mixed Species - (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
T67	Collection attempts could not be scheduled in the first quarter. Efforts continue.										
T81	First quarter collection attempts were not successful. Efforts continue.										

ND - Non-detectable.

4.b.1 BROADLEAF VEGETATION - Brazilian Pepper - (pCi/kg, wet weight)

Sample Site	Collection Date	Be-7	K-40	I-131	Cs-134	Cs-137
T40	01-14-94	1616 ± 82	4321 ± 172	<16	<10	39 ± 6
	02-07-94	1617 ± 88	2747 ± 144	<14	<11	89 ± 8
	03-24-94	2153 ± 90	4355 ± 157	<14	<11	171 ± 11
T41	01-14-94	1766 ± 83	5049 ± 189	<15	<14	39 ± 8
	02-07-94	1440 ± 83	3604 ± 183	<15	<10	120 ± 10
	03-24-94	1698 ± 74	4730 ± 152	<13	<10	<13
T67	01-14-94	814 ± 63	5711 ± 200	<16	<11	<12
	02-07-94	912 ± 67	3566 ± 168	<12	<9	<8
	03-24-94	870 ± 55	3617 ± 122	<10	<8	30 ± 6

RADIOLOGICAL SURVEILLANCE OF FLORIDA POWER AND LIGHT COMPANY'S TURKEY POINT SITE

Second Quarter, 1994

Office of Radiation Control

Florida Department of Health
and Rehabilitative Services

TURKEY POINT SITE

Technical Specifications Sampling

Second Quarter, 1994

Sample Type	Collection Frequency	Locations Sampled	Number of Samples
1. Direct Radiation	Quarterly	22	20
2. Airborne			
2.a Air Iodines	Weekly	5	65
2.b Air Particulates	Weekly	5	69*
3. Waterborne			
3.a Surface Water	Monthly	3	9
3.b Shoreline Sediment	Semiannually	0	0
4. Ingestion			
4.a Fish and Invertebrates			
4.a.1 Crustacea	Semiannually	1	1
4.a.2 Fish	Semiannually	2	2
4.b. Food Products			
4.b.1 Broadleaf Vegetation	Monthly	3	10*
			Total: 176

* - Includes NRC 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 <u>not</u> 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.

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

Sample Site	Deployment 03-22-94 Collection 06-08-94
N-2	5.76 ± 0.18
N-7	4.97 ± 0.16
N-10	5.10 ± 0.17
NNW-2	4.48 ± 0.18
NNW-10	5.78 ± 0.17
NW-1	4.94 ± 0.20
NW-5 (A)	
NW-10	7.68 ± 0.23
WNW-10 (A)	
W-1	6.59 ± 0.20
W-5	4.51 ± 0.14
W-9	4.80 ± 0.15
WSW-8	5.12 ± 0.16
SW-1	4.91 ± 0.15
SW-8	5.06 ± 0.15
SSW-5	4.73 ± 0.14
SSW-10	4.85 ± 0.15
S-5	4.75 ± 0.15
S-10	6.35 ± 0.17
SSE-1	4.72 ± 0.14
SSE-10	5.66 ± 0.18
NNE-22	6.05 ± 0.19

(A) - The dosimeters for sites NW-5 and WNW-10 were missing when collection was attempted.

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

Collection Date	Sample Site T51	T52	T58	T64	T72
04-07-94	<0.02	<0.02	<0.02	<0.02	<0.02
04-14-94	<0.01	<0.01	<0.01	<0.01	<0.01
04-21-94	<0.02	<0.02	<0.02	<0.02	<0.02
04-27-94	<0.02	<0.02	<0.02	<0.02	<0.02
05-03-94	<0.02	<0.02	<0.02	<0.02	<0.02
05-10-94	<0.01	<0.01	<0.01	<0.01	<0.01
05-18-94	<0.02	<0.02	<0.02	<0.02	<0.02
05-25-94	<0.02	<0.01	<0.01	<0.02	<0.01
05-31-94	<0.02	<0.02	<0.02	<0.02	<0.02
06-07-94	<0.02	<0.02	<0.02	<0.02	<0.02
06-14-94	<0.02	<0.02	<0.02	<0.02	<0.02
06-20-94	<0.02	<0.02	<0.02	<0.02	<0.02
06-28-94	<0.02	<0.02	<0.02	<0.02	<0.02

Supplementary air sample site T52 is now being temporarily used as a substitute for Technical Specifications site T57, which was destroyed by Hurricane Andrew.

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

Collection Date	Sample Site T51	T52	T58	T64	T72
04-07-94	0.019 ± 0.002	0.022 ± 0.002	0.021 ± 0.002	0.018 ± 0.002	0.018 ± 0.002
04-14-94	0.013 ± 0.002	0.021 ± 0.002	0.017 ± 0.002	0.015 ± 0.002	0.016 ± 0.002
04-21-94	0.008 ± 0.002	0.014 ± 0.002	0.007 ± 0.002	0.009 ± 0.002	0.007 ± 0.002
04-27-94	0.007 ± 0.002	0.006 ± 0.002	0.007 ± 0.002	0.008 ± 0.002	0.006 ± 0.002
05-03-94	0.012 ± 0.002	0.011 ± 0.002	*0.011 ± 0.002	0.009 ± 0.002	0.011 ± 0.002
05-10-94	0.020 ± 0.002	0.017 ± 0.002	*0.015 ± 0.002	0.016 ± 0.002	0.019 ± 0.002
05-18-94	0.018 ± 0.002	0.019 ± 0.002	*0.018 ± 0.002	0.019 ± 0.002	0.019 ± 0.002
05-25-94	0.007 ± 0.002	0.015 ± 0.002	*0.013 ± 0.002	0.006 ± 0.002	0.011 ± 0.002
05-31-94	(A0.009 ± 0.002	0.020 ± 0.003	0.014 ± 0.002	0.015 ± 0.002	0.013 ± 0.002
06-07-94	0.012 ± 0.002	0.011 ± 0.002	0.012 ± 0.002	0.012 ± 0.002	0.014 ± 0.002
06-14-94	0.012 ± 0.002	0.012 ± 0.002	0.011 ± 0.002	0.016 ± 0.002	0.019 ± 0.002
06-20-94	0.008 ± 0.002	0.006 ± 0.002	0.012 ± 0.002	0.010 ± 0.002	0.007 ± 0.002
06-28-94	0.009 ± 0.002	0.014 ± 0.002	0.009 ± 0.002	0.015 ± 0.002	0.016 ± 0.002
Means:	0.012 ± 0.001	0.014 ± 0.001	0.013 ± 0.001	0.013 ± 0.001	0.014 ± 0.001

* - NRC split samples.

(A) - The holder with this particulate filter was found disconnected from the air hose. The surface of the filter also appeared to have been struck by raindrops. The darkness of the dust deposits on this filter was comparable to other sites. It appears that someone had removed the filter holder during the latter part of this sampling interval and that they had attempted to replace it, but they were not able to unlock the cabinet to reconnect the air hose.

Supplementary air sample site T52 is now being temporarily used as a substitute for Technical Specifications site T57, which was destroyed by Hurricane Andrew.

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

Second Quarter, 1994

Sample Site	Be-7	K-40	Cs-134	Cs-137	Pb-210
T51	0.1290 ± 0.0099	<0.0154	<0.0009	<0.0007	0.0159 ± 0.0028
T52	0.1071 ± 0.0094	<0.0159	<0.0008	<0.0007	0.0089 ± 0.0023
T58	0.1433 ± 0.0100	<0.0177	<0.0009	<0.0005	0.0159 ± 0.0042
T64	0.1343 ± 0.0102	<0.0192	<0.0005	<0.0008	0.0135 ± 0.0022
T72	0.1234 ± 0.0100	<0.0198	<0.0009	<0.0007	0.0134 ± 0.0035

Supplementary air sample site T52 is now being temporarily used as a substitute for Technical Specifications site T57, which was destroyed by Hurricane Andrew.

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)
T42	04-22-94	<145	334 ± 36	<4	<4	<8	<4	<9	<6	<6	<5	<4	<3
	05-12-94	<138	372 ± 35	<4	<4	<8	<4	<8	<7	<12	<3	<5	<6
	06-17-94	<142	350 ± 33	<4	<4	<8	<4	<11	<6	<9	<5	<4	<4
T67	04-25-94	<130	236 ± 30	<3	<3	<7	<3	<8	<6	<5	<5	<4	<3
	05-12-94	<138	315 ± 34	<4	<4	<9	<4	<7	<7	<11	<5	<5	<4
	06-16-94	<142	237 ± 30	<4	<4	<8	<3	<7	<7	<7	<4	<3	<6
T81	04-22-94	241 ± 44	312 ± 33	<4	<4	<5	<4	<7	<6	<6	<5	<4	<5
	05-12-94	124 ± 44	399 ± 36	<4	<3	<11	<5	<9	<8	<11	<4	<4	<7
	06-17-94	270 ± 48	312 ± 32	<3	<4	<8	<4	<9	<6	<8	<3	<4	<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.a.1 CRUSTACEA - Blue Crab - (pCi/kg, wet weight)

Sample Site	Collection Date	K-40	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Cs-134	Cs-137	Ra-226	Ra-228
T67	06-16-94	904 ± 163	<22	<14	<43	<21	<48	<18	<22	ND	ND

4.a.2 FISH - Mixed Species - (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
T67	05-24-94	2819 ± 334	<36	<40	<101	<46	<93	<40	<38	ND	ND
T81	06-22-94	2464 ± 263	<24	<22	<53	<22	<59	<28	<26	ND	ND

4.b.1 BROADLEAF VEGETATION - Brazilian Pepper - (pCi/kg, wet weight)

Sample Site	Collection Date	Be-7	K-40	I-131	Cs-134	Cs-137
T40	04-25-94	1656 ± 77	5148 ± 169	<10	<11	30 ± 5
	*05-13-94	1199 ± 75	4673 ± 159	<25	<10	39 ± 6
	06-16-94	1755 ± 75	2495 ± 113	<17	<8	83 ± 7
T41	04-25-94	1025 ± 56	4119 ± 140	<10	<9	78 ± 8
	05-13-94	1489 ± 84	4184 ± 148	<24	<11	69 ± 8
	06-16-94	1503 ± 83	3510 ± 138	<19	<11	166 ± 9
T67	04-25-94	843 ± 51	3031 ± 116	<8	<7	<10
	05-13-94	1089 ± 70	4483 ± 157	<23	<11	<14
	06-16-94	749 ± 65	4651 ± 155	<19	<11	<11

* - NRC split sample.

ND - Non-detectable.

RADIOLOGICAL SURVEILLANCE OF FLORIDA POWER AND LIGHT COMPANY'S TURKEY POINT SITE

Third Quarter, 1994

Office of Radiation Control

Florida Department of Health
and Rehabilitative Services

TURKEY POINT SITE

Technical Specifications Sampling

Third Quarter, 1994

Sample Type	Collection Frequency	Locations Sampled	Number of Samples
1. Direct Radiation	Quarterly	22	19
2. Airborne			
2.a Air Iodines	Weekly	5	65
2.b Air Particulates	Weekly	5	69*
3. Waterborne			
3.a Surface Water	Monthly	3	9
3.b Shoreline Sediment	Semiannually	3	3
4. Ingestion			
4.a Fish and Invertebrates			
4.a.1 Crustacea	Semiannually	2	0
4.a.2 Fish	Semiannually	2	0
4.b Food Products			
4.b.1 Broadleaf Vegetation	Monthly	3	9
		Total:	174

* - Includes NRC 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 <u>not</u> 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.

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

Sample Site	Deployment 06-08-94 Collection 09-22-94
N-2	5.55 ± 0.16
N-7	4.78 ± 0.14
N-10	4.80 ± 0.13
NNW-2	4.27 ± 0.13
NNW-10	5.69 ± 0.15
NW-1	4.50 ± 0.13
NW-5	4.60 ± 0.13
NW-10	(A)
WNW-10	(A)
W-1	5.67 ± 0.15
W-5	4.23 ± 0.12
W-9	4.51 ± 0.13
WSW-8	4.58 ± 0.13
SW-1	4.76 ± 0.14
SW-8	4.78 ± 0.13
SSW-5	4.54 ± 0.14
SSW-10	4.82 ± 0.14
S-5	4.47 ± 0.13
S-10	(B)
SSE-1	4.77 ± 0.13
SSE-10	5.79 ± 0.16
NNE-22	6.05 ± 0.16

(A) - The dosimeters for sites NW-10 and WNW-10 were missing when collection was attempted.

(B) - The dosimeter from site S-10 was found at a boat ramp in the Card Sound area on 08-05-94. It was returned to site S-10 that same day. This dosimeter was missing again when collection was attempted on 09-22-94.

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

Collection Date	Sample Site T51	T57	T58	T64	T72
07-06-94	<0.02	<0.02	<0.02	<0.01	<0.02
07-11-94	<0.02	<0.03	<0.03	<0.03	<0.02
07-19-94	<0.02	<0.02	<0.02	<0.02	<0.02
07-25-94	<0.03	<0.03	<0.06(A)	<0.03	<0.03(C)
08-03-94	<0.01	<0.01	<0.02(B)	<0.01	<0.01
08-10-94	<0.02	<0.02(D)	<0.02	<0.02	<0.02
08-16-94	<0.02	<0.02	<0.02	<0.02	<0.02
08-22-94	<0.03	<0.04	<0.03	<0.03	<0.03
08-30-94	<0.02	<0.02	<0.02	<0.02	<0.03(E)
09-07-94	<0.01	<0.02	<0.02	<0.01	<0.01
09-13-94	<0.02	<0.02	<0.02	<0.02	<0.02
09-19-94	<0.02	<0.02	<0.02	<0.02	<0.02
09-27-94	<0.01	<0.01	<0.01	<0.01	<0.01

(A) - Electrical power was out at the end of this sample. The equipment is estimated to have run for 19 hours out of the 123 total hours for this sampling interval.

(B) - Electrical power was out at the start of this sample. The equipment is estimated to have run for 171 hours out of the 190 total hours for this sampling interval.

(C) - We believe a power outage occurred during this sample. The equipment is estimated to have run for 127 hours out of the 143 total hours for this sampling interval.

(D) - We believe a power outage occurred during this sample. The equipment is estimated to have run for 152 hours out of the 171 total hours for this sampling interval.

(E) - We believe a power outage occurred during this sample. The equipment is estimated to have run for 129 hours out of the 171 total hours for this sampling interval.

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

Collection Date	Sample Site T51	T57	T58	T64	T72
07-06-94	0.014 ± 0.002	0.012 ± 0.002	0.011 ± 0.002	0.013 ± 0.002	0.009 ± 0.002
07-11-94	0.016 ± 0.002	0.012 ± 0.003	0.011 ± 0.003	0.006 ± 0.002	0.009 ± 0.002
07-19-94	0.020 ± 0.002	0.020 ± 0.002	0.021 ± 0.002	0.022 ± 0.002	0.018 ± 0.002
07-25-94	0.013 ± 0.002	0.008 ± 0.002	(A) <0.039	0.009 ± 0.002	(C0.012 ± 0.002
08-03-94	0.015 ± 0.002	0.010 ± 0.002	(B0.009 ± 0.002	0.013 ± 0.002	0.012 ± 0.002
08-10-94	0.005 ± 0.002	(D0.007 ± 0.002	*0.006 ± 0.002	0.005 ± 0.002	0.010 ± 0.002
08-16-94	0.006 ± 0.002	0.006 ± 0.002	*0.008 ± 0.002	0.006 ± 0.002	0.009 ± 0.002
08-22-94	0.010 ± 0.002	<0.007	*0.008 ± 0.002	0.010 ± 0.002	0.009 ± 0.002
08-30-94	0.008 ± 0.002	0.007 ± 0.001	*0.010 ± 0.002	0.007 ± 0.002	(E0.007 ± 0.002
09-07-94	0.009 ± 0.002	0.010 ± 0.002	0.009 ± 0.002	0.010 ± 0.002	0.011 ± 0.002
09-13-94	0.012 ± 0.002	0.007 ± 0.002	0.009 ± 0.002	0.009 ± 0.002	0.011 ± 0.002
09-19-94	0.016 ± 0.002	(F0.008 ± 0.002	0.014 ± 0.002	0.012 ± 0.002	0.016 ± 0.002
09-27-94	0.009 ± 0.002	0.008 ± 0.001	0.011 ± 0.002	0.012 ± 0.002	0.010 ± 0.002
Means:	0.012 ± 0.001	0.010 ± 0.001	0.011 ± 0.001	0.010 ± 0.001	0.011 ± 0.001

* - NRC split samples.

(A) - Electrical power was out at the end of this sample. The equipment is estimated to have run for 19 hours out of the 123 total hours for this sampling interval. Also, the specified sensitivity of 0.01 pCi/m^3 was not achievable due to the small air volume for this sample.

(B) - Electrical power was out at the start of this sample. The equipment is estimated to have run for 171 hours out of the 190 total hours for this sampling interval.

(C) - We believe a power outage occurred during this sample. The equipment is estimated to have run for 127 hours out of the 143 total hours for this sampling interval.

(D) - We believe a power outage occurred during this sample. The equipment is estimated to have run for 152 hours out of the 171 total hours for this sampling interval.

(E) - We believe a power outage occurred during this sample. The equipment is estimated to have run for 129 hours out of the 171 total hours for this sampling interval.

(F) - Fold marks and small holes were found in this particulate filter upon collection. We suspect that someone tampered with this filter during this sampling interval.

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

Third Quarter, 1994

Sample Site	Be-7	K-40	Cs-134	Cs-137	Pb-210
T51	0.0993 ± 0.0085	<0.0151	<0.0009	<0.0007	0.0085 ± 0.0016
T57	0.0840 ± 0.0095	<0.0153	<0.0009	<0.0009	0.0065 ± 0.0020
T58	0.1215 ± 0.0096	<0.0216	<0.0009	<0.0010	0.0108 ± 0.0021
T64	0.1071 ± 0.0093	<0.0166	<0.0007	<0.0008	0.0077 ± 0.0024
T72	0.1056 ± 0.0103	<0.0150	<0.0009	<0.0005	0.0081 ± 0.0020

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)
T42	07-20-94	<138	365 ± 35	<4	<4	<9	<6	<7	<8	<7	<4	<4	<4
	08-17-94	<134	291 ± 35	<3	<4	<9	<5	<10	<7	<6	<4	<4	<4
	09-15-94	<138	239 ± 31	<4	<5	<10	<5	<8	<7	<9	<5	<4	<6
T67	07-22-94	<138	242 ± 37	<4	<3	<7	<5	<8	<8	<7	<3	<3	<4
	08-18-94	<134	133 ± 26	<3	<3	<8	<4	<8	<7	<10	<4	<5	<8
	09-16-94	<138	171 ± 27	<3	<4	<7	<5	<8	<7	<9	<3	<4	<8
T81	07-21-94	189 ± 45	335 ± 30	<3	<4	<8	<4	<6	<7	<7	<4	<4	<5
	08-17-94	299 ± 46	231 ± 36	<4	<4	<9	<5	<8	<6	<11	<3	<4	<5
	09-15-94	261 ± 47	262 ± 35	<3	<3	<9	<5	<9	<7	<11	<4	<3	<8

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

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

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

Sample Site	Collection Date	Be-7	K-40	Co-58	Co-60	Cs-134	Cs-137	Ra-226	Th-232
T42	07-20-94	196 ± 40	436 ± 66	<12	<10	<11	<10	655 ± 22	ND
T67	07-21-94	<75	425 ± 45	<7	<7	<7	<8	111 ± 19	40 ± 11
T81	07-21-94	224 ± 52	463 ± 61	<9	<13	<12	<10	503 ± 20	ND

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

Sample Site	Collection Date	K-40	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Cs-134	Cs-137	Ra-226	Ra-228
T67	We were not able to schedule attempts to collect this sample. Efforts continue.										
T81	We were not able to schedule attempts to collect this sample. Efforts continue.										

4.a.2 FISH - Mixed Species - (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
T67	We were not able to schedule attempts to collect this sample. Efforts continue.										
T81	We were not able to schedule attempts to collect this sample. Efforts continue.										

ND - Non-detectable.

4.b.1 BROADLEAF VEGETATION - Brazilian Pepper - (pCi/kg, wet weight)

Sample Site	Collection Date	Be-7	K-40	I-131	Cs-134	Cs-137	Pb-210
T40	07-22-94	1499 ± 66	2978 ± 122	<14	<8	61 ± 7	ND
	08-18-94	2103 ± 89	3549 ± 135	<19	<11	56 ± 7	ND
	09-16-94	2444 ± 86	3517 ± 124	<22	<8	178 ± 8	739 ± 252
T41	07-22-94	1232 ± 63	2956 ± 119	<14	<10	187 ± 9	ND
	08-18-94	1640 ± 78	4781 ± 161	<24	<11	95 ± 7	ND
	09-16-94	1892 ± 81	3083 ± 126	<23	<9	236 ± 10	ND
T67	07-22-94	878 ± 55	3812 ± 127	<12	<8	<8	ND
	08-18-94	881 ± 63	4430 ± 164	<20	<11	<11	ND
	09-16-94	1036 ± 67	4365 ± 140	<20	<9	<8	ND

ND - Non-detectable.

RADIOLOGICAL SURVEILLANCE OF FLORIDA POWER AND LIGHT COMPANY'S TURKEY POINT SITE

Fourth Quarter, 1994

Office of Radiation Control

Florida Department of Health
and Rehabilitative Services

TURKEY POINT SITE

Technical Specifications Sampling

Fourth Quarter, 1994

Sample Type	Collection Frequency	Locations Sampled	Number of Samples
1. Direct Radiation	Quarterly	22	20
2. Airborne			
2.a Air Iodines	Weekly	5	65
2.b Air Particulates	Weekly	5	69*
3. Waterborne			
3.a Surface Water	Monthly	3	9
3.b Shoreline Sediment	Semiannually	0	0
4. Ingestion			
4.a Fish and Invertebrates			
4.a.1 Crustacea	Semiannually	2	2
4.a.2 Fish	Semiannually	2	2
4.b Food Products			
4.b.1 Broadleaf Vegetation	Monthly	3	10*
			Total: 177

* - Includes NRC 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 <u>not</u> 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.

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

Sample Site	Deployment 09-22-94 Collection 12-07-94
N-2	5.58 ± 0.17
N-7	5.18 ± 0.18
N-10	4.86 ± 0.16
NNW-2	4.66 ± 0.16
NNW-10	5.77 ± 0.18
NW-1	4.95 ± 0.16
NW-5 (A)	
NW-10	7.55 ± 0.23
WNW-10 (A)	
W-1	6.52 ± 0.21
W-5	4.84 ± 0.16
W-9	4.75 ± 0.15
WSW-8	4.87 ± 0.16
SW-1	4.87 ± 0.17
SW-8	4.99 ± 0.16
SSW-5	4.72 ± 0.15
SSW-10	5.00 ± 0.18
S-5	4.56 ± 0.15
S-10	5.57 ± 0.17
SSE-1	4.82 ± 0.17
SSE-10	5.85 ± 0.18
NNE-22	6.05 ± 0.21

(A) - The dosimeters for sites NW-5 and WNW-10 were missing when collection was attempted.

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

Collection Date	Sample Site				
	T51	T57	T58	T64	T72
10-04-94	<0.03	<0.03	<0.03	<0.03	<0.03
10-12-94	<0.02	<0.02	<0.02	<0.02	<0.02
10-18-94	<0.03	<0.04	<0.03	<0.03	<0.03
10-25-94	<0.02	<0.02	<0.02	<0.02	<0.02
11-01-94	<0.02	<0.02	<0.02	<0.02	<0.02
11-08-94	<0.02	<0.02	<0.02	<0.02	<0.02
11-16-94	<0.04	<0.04	<0.04	<0.04	<0.04
11-22-94	<0.02	<0.02	<0.02	<0.02	<0.02
11-28-94	<0.03	<0.04	<0.03	<0.04	<0.03
12-06-94	<0.02	<0.02	<0.01	<0.02	<0.02
12-13-94	<0.01	<0.01	<0.01	<0.01	<0.01(A)
12-21-94	<0.03	<0.03	<0.03	<0.03	<0.03
12-28-94	<0.02	<0.02	<0.02	<0.03	<0.02

(A) - We believe a power outage occurred during collection of this sample. The equipment is estimated to have run for 148 hours out of the 167 total hours for this sampling interval.

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

Collection Date	Sample Site T51	T57	T58	T64	T72
10-04-94	0.008 ± 0.002	0.006 ± 0.001	0.009 ± 0.002	0.010 ± 0.002	0.008 ± 0.002
10-12-94	0.009 ± 0.002	0.007 ± 0.002	0.007 ± 0.002	0.011 ± 0.002	0.010 ± 0.002
10-18-94	0.009 ± 0.002	0.014 ± 0.003	0.007 ± 0.002	0.009 ± 0.002	0.012 ± 0.002
10-25-94	0.017 ± 0.002	0.017 ± 0.002	0.022 ± 0.002	0.017 ± 0.002	0.019 ± 0.003
11-01-94	0.009 ± 0.002	0.006 ± 0.002	0.015 ± 0.002	0.013 ± 0.002	0.012 ± 0.002
11-08-94	0.014 ± 0.002	0.016 ± 0.002	*0.014 ± 0.002	0.015 ± 0.002	0.013 ± 0.002
11-16-94	<0.004	0.005 ± 0.001	*0.006 ± 0.001	0.007 ± 0.002	0.005 ± 0.001
11-22-94	0.008 ± 0.002	0.008 ± 0.002	*0.005 ± 0.002	0.008 ± 0.002	0.006 ± 0.002
11-28-94	0.014 ± 0.002	0.012 ± 0.002	*0.015 ± 0.002	0.011 ± 0.002	0.015 ± 0.002
12-06-94	0.006 ± 0.002	0.003 ± 0.001	0.004 ± 0.001	0.005 ± 0.001	0.005 ± 0.001
12-13-94	0.007 ± 0.002	0.008 ± 0.002	0.013 ± 0.002	0.011 ± 0.002	(A0.005 ± 0.002
12-21-94	0.010 ± 0.002	0.009 ± 0.002	0.012 ± 0.002	0.013 ± 0.002	0.010 ± 0.002
12-28-94	0.015 ± 0.002	0.013 ± 0.002	0.016 ± 0.002	0.015 ± 0.002	0.015 ± 0.002
Means:	0.011 ± 0.001	0.010 ± 0.001	0.011 ± 0.001	0.011 ± 0.001	0.010 ± 0.001

* - NRC split samples.

(A) - We believe a power outage occurred during collection of this sample. The equipment is estimated to have run for 148 hours out of the 167 total hours for this sampling interval.

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

Fourth Quarter, 1994

Sample Site	Be-7	K-40	Cs-134	Cs-137	Pb-210
T51	0.1140 ± 0.0119	<0.0172	<0.0011	<0.0010	0.0118 ± 0.0030
T57	0.0907 ± 0.0092	<0.0167	<0.0009	<0.0008	0.0118 ± 0.0028
T58	0.1294 ± 0.0107	<0.0180	<0.0005	<0.0007	0.0115 ± 0.0038
T64	0.1308 ± 0.0122	<0.0147	<0.0008	<0.0007	0.0092 ± 0.0030
T72	0.1087 ± 0.0099	<0.0196	<0.0006	<0.0008	0.0115 ± 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)
T42	10-17-94	<134	172 ± 27	<4	<4	<5	<4	<8	<6	<7	<4	<4	<4
	11-09-94	<137	177 ± 24	<4	<4	<8	<4	<6	<6	<10	<4	<4	<7
	12-14-94	<136	135 ± 26	<4	<4	<9	<4	<8	<7	<6	<4	<4	<5
T67	10-17-94	<134	141 ± 25	<4	<4	<6	<3	<7	<7	<7	<4	<4	<4
	11-09-94	<142	<63	<3	<3	<7	<4	<7	<7	<11	<5	<3	<5
	12-15-94	<136	192 ± 30	<4	<4	<8	<3	<7	<5	<6	<5	<4	<4
T81	10-17-94	101 ± 43	280 ± 17	<2	<2	<4	<2	<4	<3	<3	<2	<2	<3
	11-07-94	<137	258 ± 32	<3	<3	<8	<5	<6	<8	<13	<4	<4	<8
	12-15-94	<136	252 ± 35	<4	<4	<9	<5	<8	<7	<8	<4	<4	<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.a.1 CRUSTACEA - Blue Crab - (pCi/kg, wet weight)

Sample Site	Collection Date	K-40	Mn-54	Co-58	Fe-59	Co-60	Zn-65	Cs-134	Cs-137	Ra-226	Ra-228
T67	10-18-94	964 ± 226	<28	<28	<70	<19	<64	<29	<28	ND	ND
T81	10-07-94	981 ± 128	<17	<22	<53	<26	<46	<19	<28	ND	ND

4.a.2 FISH - Mixed Species - (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
T67	10-18-94	2371 ± 209	<21	<22	<46	<22	<42	<23	<23	ND	ND
T81	11-07-94	2876 ± 262	<23	<35	<51	<33	<66	<26	<28	ND	ND

4.b.1 BROADLEAF VEGETATION - Brazilian Pepper - (pCi/kg, wet weight)

Sample Site	Collection Date	Be-7	K-40	I-131	Cs-134	Cs-137	Pb-210
T40	10-19-94	2084 ± 83	2715 ± 119	<11	<9	14 ± 4	636 ± 228
	*11-09-94	1107 ± 80	2657 ± 129	<42	<10	81 ± 7	ND
	12-15-94	2976 ± 94	4909 ± 161	<17	<12	40 ± 6	ND
T41	10-19-94	974 ± 67	3936 ± 136	<11	<9	177 ± 9	ND
	11-09-94	1329 ± 81	3554 ± 131	<47	<10	112 ± 7	ND
	12-15-94	2769 ± 107	3336 ± 125	<16	<10	147 ± 8	ND
T67	10-19-94	1455 ± 34	3152 ± 58	<5	<4	<5	307 ± 126
	11-09-94	637 ± 64	4007 ± 139	<45	<9	<8	ND
	12-15-94	1501 ± 77	3597 ± 134	<15	<12	<10	ND

* - NRC split sample.

ND - Non-detectable.

1994
ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT
TURKEY POINT PLANT, UNITS 3 & 4

ATTACHMENT C

RESULTS FROM THE INTERLABORATORY COMPARISON PROGRAM 1994

FLORIDA DEPT. OF HRS - EPA INTERLABORATORY CROSS-CHECK PROGRAM DATA

January through June, 1994

Media	Nuclide	Collection Mon	Day	Yr	EPA Known	Units	Normal. Range	Mean of Analyses	N.D.K.	Action Level
WATER	Alpha	01	28	94	15	pCi/L	0.591	16.33	0.46	
WATER	Beta	01	28	94	62	pCi/L	0.354	65.00	0.52	
WATER	Co-60	06	10	94	50	pCi/L	0.354	50.33	0.12	
WATER	Zn-65	06	10	94	134	pCi/L	0.091	145.00	1.47	
WATER	Ru-106	06	10	94	252	pCi/L	0.213	196.00	-3.88	1
WATER	Ba-133	06	10	94	98	pCi/L	0.059	83.33	-2.54	
WATER	Cs-134	06	10	94	40	pCi/L	0.236	37.67	-0.81	
WATER	Cs-137	06	10	94	49	pCi/L	0.118	54.33	1.85	
WATER	H-3	03	04	94	4936	pCi/L	0.005	4957.67	0.08	
WATER	I-131	02	04	94	119	pCi/L	0.148	115.00	-0.58	
WATER	Sr-89	01	14	94	25	pCi/L	0.591	20.00	-1.73	
WATER	Sr-90	01	14	94	15	pCi/L	0.354	11.67	-1.15	

NOTES:

Normal.: Normalized range. As defined in "Environmental Range Radioactivity Laboratory Intercomparison Studies Program Fiscal Year 1981 - 1982", Environmental Monitoring Systems Laboratory, U. S. Environmental Protection Agency, P. O. Box 93478, Las Vegas, Nevada, 89193-3478. EPA-600/4-81-004, February, 1981.

N.D.K.: Normalized deviation of the mean from the known value, as defined in EPA-600/4-81-004.

NDP: No data provided. No data was provided to EPA for inclusion in their report.

NA: Not available. Report containing this data has not yet been received from EPA, Las Vegas.

ACTION LEVEL:

(1) Cause: Problem with Ruthenium-106 standard.
Corrective Action: See attached letter from Dr. George Dilbeck.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL MONITORING SYSTEMS LABORATORY-LAS VEGAS
P.O. BOX 93478
LAS VEGAS, NEVADA 89193-3478
(702/798-2100 - FTS 545-2100)

Dear Participant:

The Radiation Quality Assurance Program has been experiencing problems with the Ruthenium-106 currently used in the Performance Evaluation (PE) Studies and in the Standards Distribution Program. If these problems can be satisfactorily resolved, this analyte will once again be placed into this PE Study. If the problems cannot be resolved, the Ruthenium-106 will be replaced.

Formal written notice will be given to all participants that are enrolled in the Gamma in Water PE Study before the Ruthenium-106 is reintroduced or replaced. At that time, new calibration standards will be available to all participants in the Gamma in Water PE Study.

Sincerely,

George Dilbeck

George Dilbeck
Chemist
Performance Evaluation Program
Radioanalysis Branch (RSA-RADQA)

FLORIDA DEPT. OF HRS - EPA INTERLABORATORY CROSS-CHECK PROGRAM DATA

July through December, 1994

Media	Nuclide	Collection Mon	Day	Yr	EPA Known	Units	Normal. Range	Mean of Analyses	N.D.K.	Action Level
FILTER	Alpha	08	26	94	35	pCi/F	0.000	37.00	0.38	
FILTER	Beta	08	26	94	56	pCi/F	0.000	61.00	0.87	
FILTER	Cs-137	08	26	94	15	pCi/F	0.000	16.00	0.35	
FILTER	Sr-90	08	26	94	20	pCi/F	0.118	17.33	-0.92	
MILK	I-131	09	30	94	75	pCi/L	0.148	73.33	-0.36	
MILK	Cs-137	09	30	94	59	pCi/L	0.118	62.67	1.27	
MILK	K	09	30	94	1715	mg/L	0.220	1726.00	0.22	
MILK	Sr-89	09	30	94	25	pCi/L	0.000	22.00	-1.04	
MILK	Sr-90	09	30	94	15	pCi/L	0.000	15.00	0.00	
WATER	Alpha	07	22	94	32	pCi/L	0.517	45.00	2.81	
WATER	Alpha	10	28	94	57	pCi/L	0.253	61.67	0.58	
WATER	Beta	07	22	94	10	pCi/L	0.000	15.00	1.73	
WATER	Beta	10	28	94	23	pCi/L	0.000	30.00	2.42	
WATER	Co-60	11	04	94	59	pCi/L	0.118	60.67	0.58	
WATER	Zn-65	11	04	94	100	pCi/L	0.236	108.33	1.44	
WATER	Ba-133	11	04	94	73	pCi/L	0.338	66.00	-1.73	
WATER	Cs-134	11	04	94	24	pCi/L	0.236	23.00	-0.35	
WATER	Cs-137	11	04	94	49	pCi/L	0.118	53.67	1.62	
WATER	H-3	08	05	94	9951	pCi/L	0.149	9985.33	0.06	
WATER	I-131	10	07	94	79	pCi/L	0.222	77.33	-0.36	
WATER	Sr-89	07	15	94	30	pCi/L	0.591	30.67	0.23	
WATER	Sr-90	07	15	94	20	pCi/L	0.236	20.00	0.00	

NOTES:

Normal.: Normalized range. As defined in "Environmental Range Radioactivity Laboratory Intercomparison Studies Program Fiscal Year 1981 - 1982", Environmental Monitoring Systems Laboratory, U. S. Environmental Protection Agency, P. O. Box 93478, Las Vegas, Nevada, 89193-3478. EPA-600/4-81-004, February, 1981.

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