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MAY 08 2001

L-2001-084
10 CFR 50.36b

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D.C. 20555-00001

Re: Turkey Point Units 3 and 4
Docket Nos. 50-250 and 50-251
2000 Annual Radiological
Environmental Operating Report

Enclosed is the 2000 Annual Radiological Environmental 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 Steve Franzone at (305) 246-6228.

Very truly yours,

R. J. Hovey
Vice President
Turkey Point Plant

SM

Enclosure

cc: Regional Administrator, Region II, USNRC
Senior Resident Inspector, USNRC, Turkey Point Plant

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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 DOH

Prepared by: *Peter G. B...*

Reviewed by: *J. Jank*

**2000
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, 2000 to December 31, 2000.

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

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TURKEY POINT PLANT – UNITS 3 & 4**

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**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 described in the Offsite Dose Calculation Manual (ODCM) 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 Control 5.1 of Turkey Point Unit 3 & 4 ODCM.

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.

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- 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 (DOH). Samples are collected and analyzed by DOH personnel.

Samples are analyzed at the DOH 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.

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E. Interlaboratory Comparison Program

The intercomparison program consists of participating in the Department of Energy's EML New York Quality Assessment Program (DOE-QAP). The DOE-QAP consists of two rounds of Air Filter, Water, Soil, and Vegetation matrices. The samples are analyzed using the methods applicable to the REMP (gamma spectroscopy, Gross Beta, and Tritium for water). The results for nuclides associated with the REMP are listed in ATTACHMENT C, RESULTS FROM THE INTERLABORATORY COMPARISON PROGRAM.

III. DISCUSSION AND INTERPRETATION OF RESULTS

A. Reporting of Results

The Annual Radiological Environmental Operating Report contains the summaries, interpretations and information required by Control 1.4 of ODCM. Table 1 provides a summary of the measurements made for the nuclides required by ODCM Table 5.1-2, for all samples specified by Table 5.1-1. In addition, summaries are provided for other nuclides identified in the specified samples, including those not related to station operation. These include nuclides such as K-40, Th-232, Ra-226, and Be-7 which are common in the Florida environment.

B. Interpretation of Results

1. Direct Radiation:

The results of direct radiation monitoring are consistent with past measurements for the specified locations.

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

2. Air Particulates/Radioiodine:

The results for radioactive air particulate and radioiodine monitoring are consistent with past measurements and indicate no trends attributed to plant effluents. All samples for radioiodine yielded no detectable I-131. Gamma isotopic measurements yielded no indication of any nuclides attributed to station operation. The results for air particulate/radioiodine samples are consistent with measurements that were made during the pre-operational surveillance program. Air particulate and radioiodine monitoring results are summarized in Table 1.

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3. Waterborne, Surface Water:

The results of radioactivity measurements in surface water samples are consistent with past measurements. Tritium was reported as present in 3 of the 36 surface water samples collected. 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 7% of the required detection level specified by ODCM Table 5.1-3.

4. Waterborne, Sediment:

The results are consistent with past measurements. Only cosmic-ray produced Be-7 and naturally occurring isotopes were identified.

5. Waterborne, 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 the indicator and control locations. The maximum concentration reported was less than 15% of the reporting level specified by ODCM Table 5.1-2. No other fission products were detected.

7. Land Use Census

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

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

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8. Interlaboratory Comparison Program

For those nuclides associated with nuclear power plant operation and using analytical methods used in the REMP, all but two results were acceptable. They were both warning-level high. One was a 33% over-response for tritium in water. The other was a 14% over-response for Co-57 on an air filter. The 'naturally occurring nuclide' results reported are inferred results from gamma spectroscopy. Chemical separation and alpha analysis is the preferred analytical method, but is outside the scope of the routine REMP.

Data for Am-241, Bi-212, Bi-214, Pb-212 and Pb-214 are not included because these radionuclides are not required under the Radiological Environmental Monitoring Program.

C. Conclusions

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

Additionally, supplemental to the ODCM program, sampling of the direct exposure, inhalation, and ingestion pathways, performed by DOH, 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.

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM ANNUAL SUMMARY
 Name of Facility Turkey Point Units 3 & 4 , Docket No(s). 50-250 & 50-251
 Location of Facility Miami-Dade, Florida, Reporting Period January 1 - December 31, 2000
 (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		Control Locations Mean (f) ^b Range
			Name ^c Distance & Direction	Mean (f) ^b Range	
Exposure Rate, 87 ^d	—	5.4 (82/83) 4.1 – 8.5	NW-10 10 mi., NW	8.0 (4/4) 7.8 - 8.5	6.1 (4/4) 5.8 – 6.4

Number of Non-routine Reported Measurements = 0

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 Name of Facility Turkey Point Units 3 & 4, Docket No(s). 50-250 & 50-251
 Location of Facility Miami-Dade, Florida, Reporting Period January 1 - December 31, 2000
 (County, State)

PATHWAY: AIRBORNE

SAMPLES COLLECTED: RADIOIODINE AND PARTICULATES

UNITS: pCi/m³

Type and Total Number of Analyses Performed	Lower Limit of Detection ^a (LLD)	All Indicator Locations Mean (f) Range	Location with Highest Annual Mean		Control Locations Mean (f) ^b Range
			Name ^c	Mean (f) ^b	
			Distance & Direction	Range	
¹³¹ I, 259	0.024	<MDA	---	---	<MDA
Gross Beta, 259	0.0025	0.015 (207/207) 0.003 - 0.037	T-72 <1 mi., WSW	0.015 (51/51) 0.004 - 0.037	0.016 (52/52) 0.003 - 0.036
Composite Gamma Isotopic, 20					
⁷ Be	0.0052	0.1254 (16/16) 0.0061 - 0.1748	T-72 <1 mi., WSW	0.1393 (4/4) 0.1011 - 0.1642	0.1433 (4/4) 0.0989 - 0.1650
¹³⁴ Cs	0.00069	<MDA	---	---	<MDA
¹³⁷ Cs	0.00066	<MDA	---	---	<MDA
²¹⁰ Pb	---	0.0175 (15/16) 0.0108 - 0.0263	T-58 1 mi., NW	0.0183 (4/4) 0.0142 - 0.0245	0.0151 (3/4) 0.0159 - 0.0256

Number of Non-routine Reported Measurements = 0

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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		Control Locations Mean (f) ^b Range
			Name ^c Distance & Direction	Mean (f) ^b Range	
Tritium, 36	230	190 (3/24) 181 - 205	T-81 6 mi., S	190 (3/12) 181 - 205	<MDA
Gamma Isotopic, 36					
⁴⁰ K	60	313 (24/24) 181 - 405	T-81 6 mi., S	338 (12/12) 230 - 405	243 (12/12) 65 - 397
⁵⁴ Mn	4	<MDA	---	---	<MDA
⁵⁹ Fe	8	<MDA	---	---	<MDA
⁵⁸ Co	4	<MDA	---	---	<MDA
⁶⁰ Co	4	<MDA	---	---	<MDA
⁶⁵ Zn	8	<MDA	---	---	<MDA
⁹⁵ Zr-Nb	7	<MDA	---	---	<MDA
¹³¹ I	5	<MDA	---	---	<MDA
¹³⁴ Cs	5	<MDA	---	---	<MDA
¹³⁷ Cs	5	<MDA	---	---	<MDA
¹⁴⁰ Ba-La	11	<MDA	---	---	<MDA

Number of Non-routine Reported Measurements = 0

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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		Control Locations Mean (f) ^b Range
			Name ^c Distance & Direction	Mean (f) ^b Range	
Gamma Isotopic, 6					
⁷ Be	100	190 (1/4)	T-42 <1 mi., ENE	190 (1/2)	<MDA
⁴⁰ K	140	312 (4/4) 205 - 411	T-81 6 mi., S	371 (2/2) 331 - 411	228 (2/2) 174 - 283
²¹⁰ Pb	---	1106 (1/4)	T-42 <1 mi., ENE	1106 (1/2)	<MDA
²²⁶ Ra	49	734 (4/4) 671 - 796	T-81 6 mi., S	772 (2/2) 749 - 796	118 (2/2) 101 - 135
²³² Th	---	< MDA	---	---	33 (1/2)
²³⁸ U	---	574 (3/4) 516 - 667	T-42 <1 mi., ENE	603 (2/2) 539 - 667	<MDA
⁵⁸ Co	9	<MDA	---	---	<MDA
⁶⁰ Co	12	<MDA	---	---	<MDA
¹³⁴ Cs	14	<MDA	---	---	<MDA
¹³⁷ Cs	12	<MDA	---	---	<MDA

Number of Non-routine Reported Measurements = 0

TABLE 1

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM ANNUAL SUMMARY
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 (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		Control Locations Mean (f) ^b Range
			Name ^c Distance & Direction	Mean (f) ^b Range	
Gamma Isotopic, 4					
⁴⁰ K	130	1252 (2/2) 1195 - 1309	T-81 6 mi., S	1252 (2/2) 1195 - 1309	1665 (2/2) 1556 - 1774
²²⁶ Ra	20	1425 (1/2)	T-81 6 mi., S	1425 (1/2)	<MDA
²²⁸ Ra	---	<MDA	---	---	<MDA
⁵⁴ Mn	9	<MDA	---	---	<MDA
⁵⁹ Fe	16	<MDA	---	---	<MDA
⁵⁸ Co	9	<MDA	---	---	<MDA
⁶⁰ Co	19	<MDA	---	---	<MDA
⁶⁵ Zn	17	<MDA	---	---	<MDA
¹³⁴ Cs	9	<MDA	---	---	<MDA
¹³⁷ Cs	9	<MDA	---	---	<MDA

Number of Non-routine Reported Measurements = 0

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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		Control Locations Mean (f) ^b Range
			Name ^c Distance & Direction	Mean (f) ^b Range	
Gamma Isotopic, 4					
⁷ Be	---	<MDA	---	---	<MDA
⁴⁰ K	130	2812 (2/2) 2441 - 3182	T-81 6 mi., S	2812 (2/2) 2441 - 3182	2384 (2/2) 2300 - 2647
⁵⁴ Mn	9	<MDA	---	---	<MDA
⁵⁹ Fe	16	<MDA	---	---	<MDA
⁵⁸ Co	9	<MDA	---	---	<MDA
⁶⁰ Co	10	<MDA	---	---	<MDA
⁶⁵ Zn	17	<MDA	---	---	<MDA
¹³⁴ Cs	9	<MDA	---	---	<MDA
¹³⁷ Cs	9	<MDA	---	---	<MDA

Number of Non-routine Reported Measurements = 0

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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		Control Locations Mean (f) ^b Range
			Name ^c Distance & Direction	Mean (f) ^b Range	
Gamma Isotopic, 36					
⁷ Be	71	1114 (24/24) 612 - 2005	T-40 3 mi., W	1249 (12/12) 688 - 2005	1093 (12/12) 369 - 1751
⁴⁰ K	100	3327 (24/24) 1854 - 5222	T-41 2 mi., W/NW	3692 (12/12) 1854 - 5222	3473 (12/12) 2340 - 6146
⁵⁸ Co	9	<MDA	---	---	<MDA
⁶⁰ Co	10	<MDA	---	---	<MDA
¹³¹ I	9	<MDA	---	---	<MDA
¹³⁴ Cs	8	<MDA	---	---	<MDA
¹³⁷ Cs	8	81 (24/24) 26 - 299	T-41 2 mi., W/NW	104 (12/12) 26 - 299	47 (5/12) 32 - 72
²¹⁰ Pb	---	1000 (4/24) 404 - 1486	T-40 3 mi., W	1198 (3/12) 800 - 1486	1107 (3/12) 739 - 1620

Number of Non routine Reported Measurements = 0

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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.

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TABLE 1A

DEVIATIONS / MISSING DATA

A)	Pathway:	Direct Exposure
	Location:	SSW-10, 10 miles SSW
	Dates:	First calendar quarter
	Deviation:	Failure to provide continuous monitoring.
	Description of Problem:	TLDs missing when collection was attempted.
	Corrective Action:	Replaced missing TLD.
B)	Pathway:	Airborne, Radioiodines and particulates
	Location:	T-72, < 1 mile Westsouthwest
	Dates:	06/05/00 to 06/30/00
	Deviation:	Failure to provide continuous monitoring during this three week interval.
	Description of Problem:	Power outage 6/8 to 6/23 due to distribution line upgrade. Samples were collected from the first 80 hours and last 165 hours of the 600 hour monitoring period.
		This is a remote area, alternate power is not available.
	Corrective Action:	Upon power restoration, ensured sampling station equipment is functioning properly..

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TABLE 1B

ANALYSIS WITH LLDs ABOVE TABLE 4.12-1 DETECTION CAPABILITIES
1/1/2000 – 12/31/2000

The values specified in ODCM Table 5.1-3, Detection Capabilities, were achieved for all samples.

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TABLE 2

LAND USE CENSUS

Distance to Nearest (a, b)

Sector	7/00 Milk (c) Animal	7/00 Residence	7/00 Garden (d)
N	L (e)	2.0/357	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	L
SSW	L	L	L
SW	L	L	L
WSW	L	L	L
W	L	L	L
WNW	L	L	L
NW	L	3.6/306	4.4/306
NNW	L	4.4/337 (g)	4.5/332

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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:

<u>Sector</u>	<u>Distance</u>	<u>Description</u>
N	1.9/351	24-hour Security Staff Building
NNW	2.0/349	Security booth at park entrance

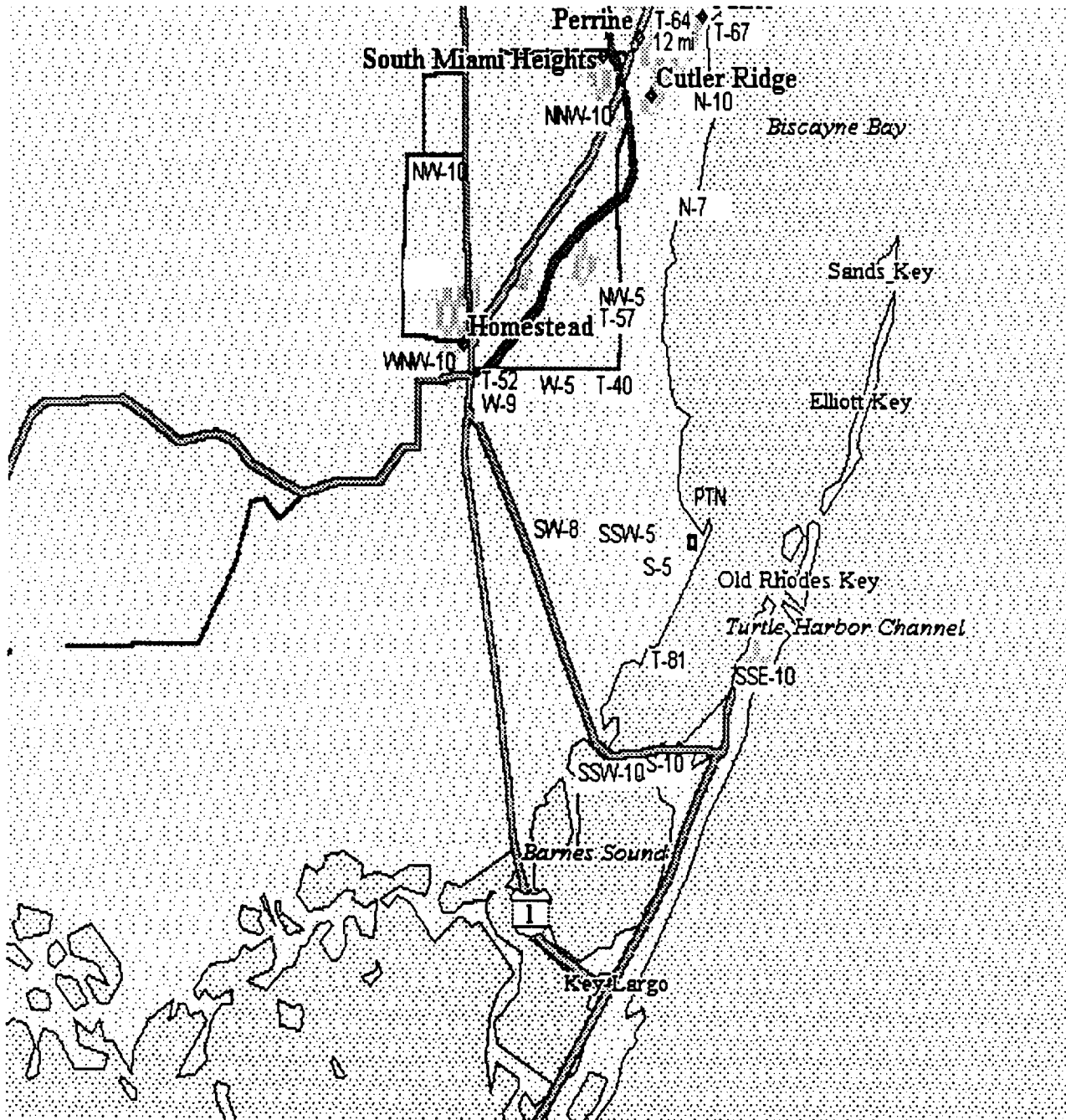
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ATTACHMENT A

KEY TO SAMPLE LOCATIONS

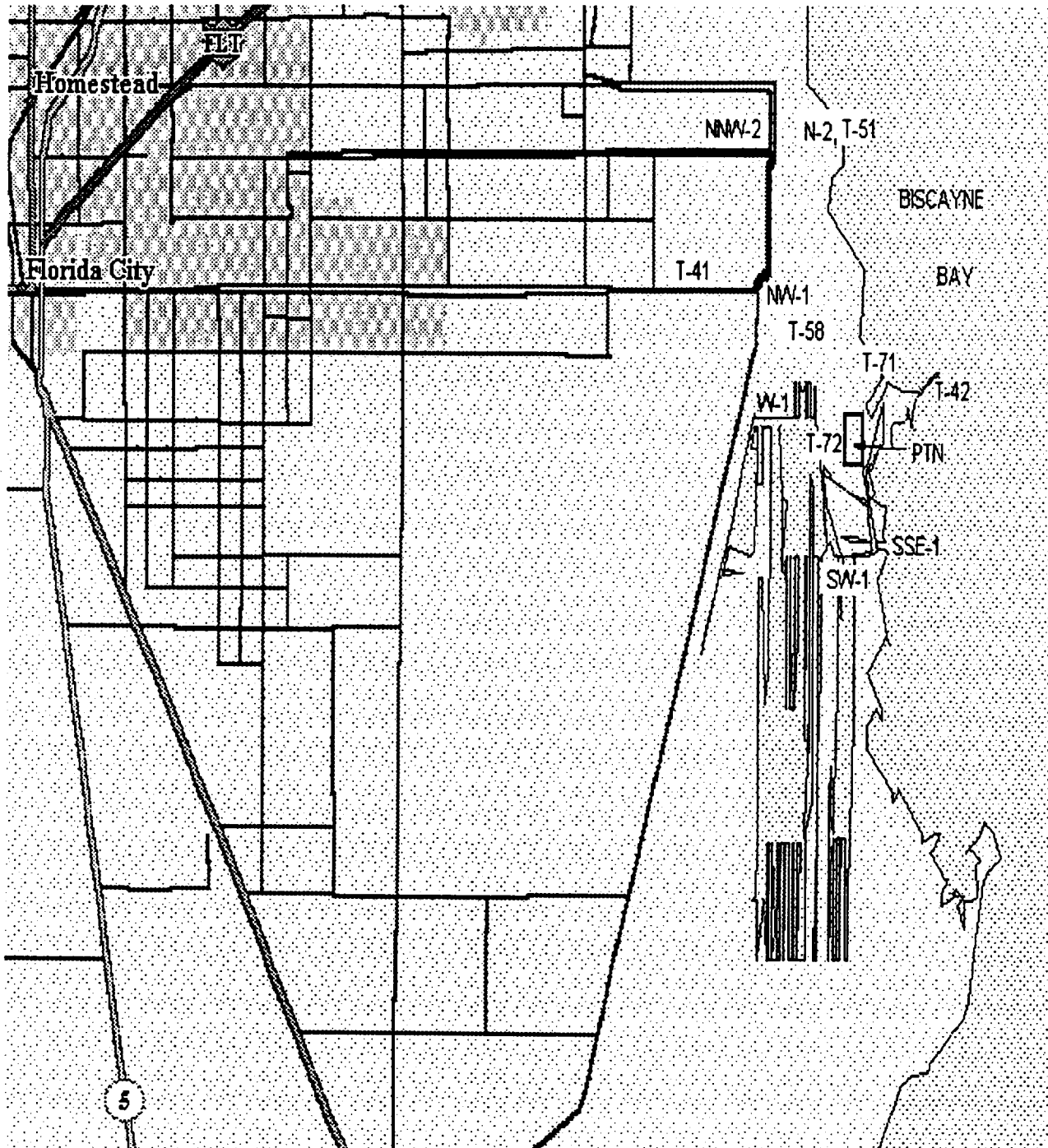
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DISTANT REMP SAMPLING LOCATIONS



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NEAR SITE SAMPLING LOCATIONS



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ATTACHMENT A

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

Location ^(a)

<u>Name</u>	<u>Description</u>
N-2	Convey 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
<u>Control</u>	
NNE-22	Natoma Substation

^aThe location name is the direction sector - approximate distance (miles)

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ATTACHMENT A

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

<u>Location Name</u>	<u>Direction Sector</u>	<u>Approximate Distance (miles)</u>	<u>Description</u>
T-51	NNW	2	Entrance Area to Biscayne National Park
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.
<u>Control:</u>			
T-64	NNE	22	Natoma Substation

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

ATTACHMENT A

Page 3 of 4

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

<u>Location Name</u>	<u>Direction Sector</u>	<u>Approximate Distance (miles)</u>	<u>Description</u>
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
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SAMPLES COLLECTED: SHORELINE SEDIMENT
SAMPLE COLLECTION FREQUENCY: SEMI-ANNUALLY

<u>Location Name</u>	<u>Direction Sector</u>	<u>Approximate Distance (miles)</u>	<u>Description</u>
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
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TURKEY POINT PLANT – UNITS 3 & 4

ATTACHMENT A

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

<u>Location Name</u>	<u>Direction Sector</u>	<u>Approximate Distance (miles)</u>	<u>Description</u>
T-81	S	6	Card Sound Vicinity of Turkey Point Facility

Control:

T-67	N, NNE	13-18	Near Biscayne Bay, Vicinity of Cutler Plant, North to Matheson Hammock Park
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SAMPLES COLLECTED: BROAD LEAF VEGETATION
SAMPLE COLLECTION FREQUENCY: MONTHLY

<u>Location Name</u>	<u>Direction Sector</u>	<u>Approximate Distance (miles)</u>	<u>Description</u>
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 Plant, North to Matheson Hammock Park
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**2000
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

2000

First Quarter, 2000

Second Quarter, 2000

Third Quarter, 2000

Fourth Quarter, 2000

TURKEY POINT SITE

Technical Specifications Sampling

First Quarter, 2000

<u>Sample Type</u>	<u>Collection Frequency</u>	<u>Locations Sampled</u>	<u>Number of Samples</u>
1. Direct Radiation	Quarterly	22	21
2. Airborne			
2.a. Air Iodines	Weekly	5	65
2.b. Air Particulates	Weekly	5	65
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	2
4.a.2. Fish	Semiannually	2	2
4.b. Food Products			
Broadleaf Vegetation	Monthly	3	9
			Total: 176

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.

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

<u>Sample Site</u>	<u>Deployment 14-Dec-99 Collection 22-Mar-00</u>	<u>Sample Site</u>	<u>Deployment 14-Dec-99 Collection 22-Mar-00</u>
N-2	6.0 \pm 0.2	WSW-8	5.4 \pm 0.2
N-7	5.1 \pm 0.2		
N-10	5.2 \pm 0.2	SW-1	5.1 \pm 0.2
		SW-8	4.8 \pm 0.2
NNW-2	4.9 \pm 0.2		
NNW-10	6.0 \pm 0.2	SSW-5	5.1 \pm 0.2
		SSW-10	*
NW-1	6.8 \pm 0.3		
NW-5	4.7 \pm 0.2	S-5	5.1 \pm 0.2
NW-10	8.5 \pm 0.3	S-10	6.0 \pm 0.2
WNW-10	6.8 \pm 0.3	SSE-1	5.0 \pm 0.2
		SSE-10	6.1 \pm 0.2
W-1	7.0 \pm 0.3		
W-5	5.4 \pm 0.2	NNE-22	6.4 \pm 0.2
W-9	5.4 \pm 0.2		

* - The dosimeter for site SSW-10 was missing when collection was attempted. A new dosimeter was deployed.

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

<u>Collection Date</u>	<u>T51</u>	<u>T57</u>	<u>T58</u>	<u>T64</u>	<u>T72</u>
03-Jan-00	<0.02	<0.02	<0.02	<0.02	<0.02
12-Jan-00	<0.03	<0.03	<0.03	<0.03	<0.03
19-Jan-00	<0.03	<0.03	<0.03	<0.04	<0.04
25-Jan-00	<0.05	<0.05	<0.05	<0.05	<0.04
31-Jan-00	<0.02	<0.02	<0.02	<0.02	<0.02
09-Feb-00	<0.02	<0.02	<0.02	<0.02	<0.02
14-Feb-00	<0.04	<0.04	<0.04	<0.04	<0.04
21-Feb-00	<0.02	<0.02	<0.02	<0.02	<0.02
28-Feb-00	<0.02	<0.02	<0.02	<0.02	<0.02
06-Mar-00	<0.02	<0.02	<0.02	<0.02	<0.02
13-Mar-00	<0.03	<0.03	<0.03	<0.03	<0.03
23-Mar-00	<0.01	<0.01	<0.01	<0.01	<0.01
28-Mar-00	<0.03	<0.03	<0.03	<0.03	<0.03

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

Collection Date	Sample Site				
	T51	T57	T58	T64	T72
03-Jan-00	0.022 ± 0.002	0.018 ± 0.002	0.018 ± 0.002	0.019 ± 0.002	0.020 ± 0.002
12-Jan-00	0.007 ± 0.001	0.008 ± 0.001	0.005 ± 0.001	0.008 ± 0.001	0.008 ± 0.001
19-Jan-00	0.016 ± 0.002	0.018 ± 0.002	0.013 ± 0.002	0.016 ± 0.002	0.010 ± 0.002
25-Jan-00	0.020 ± 0.003	0.022 ± 0.003	0.019 ± 0.003	0.021 ± 0.003	0.020 ± 0.003
31-Jan-00	0.019 ± 0.003	0.018 ± 0.003	0.023 ± 0.003	0.020 ± 0.003	0.019 ± 0.003
09-Feb-00	0.020 ± 0.002	0.018 ± 0.002	0.019 ± 0.002	0.023 ± 0.002	0.021 ± 0.002
14-Feb-00	0.033 ± 0.003	0.037 ± 0.004	0.032 ± 0.003	0.034 ± 0.003	0.037 ± 0.004
21-Feb-00	0.012 ± 0.002	0.013 ± 0.002	0.012 ± 0.002	0.015 ± 0.002	0.011 ± 0.002
28-Feb-00	0.007 ± 0.002	0.011 ± 0.002	0.011 ± 0.002	0.007 ± 0.002	0.007 ± 0.002
06-Mar-00	0.014 ± 0.002	0.016 ± 0.002	0.014 ± 0.002	0.014 ± 0.002	0.017 ± 0.002
13-Mar-00	0.013 ± 0.002	0.015 ± 0.002	0.018 ± 0.002	0.017 ± 0.002	0.015 ± 0.002
23-Mar-00	0.010 ± 0.001	0.013 ± 0.002	0.015 ± 0.002	0.011 ± 0.002	0.013 ± 0.002
28-Mar-00	0.017 ± 0.003	0.015 ± 0.003	0.016 ± 0.003	0.013 ± 0.003	0.016 ± 0.003
Mean:	0.016 ± 0.001	0.016 ± 0.001	0.017 ± 0.001	0.017 ± 0.001	0.017 ± 0.001

2.b.2. AIR PARTICULATES GAMMA ANALYSIS OF QUARTERLY COMPOSITES (pCi/m³)First Quarter, 2000

Sample Site	Be-7	K-40	Cs-134	Cs-137	Pb-210
T51	0.1377 ± 0.0102	<0.0129	<0.0008	<0.0008	0.0146 ± 0.0028
T57	0.1511 ± 0.0095	<0.0151	<0.0008	<0.0007	0.0187 ± 0.0027
T58	0.1412 ± 0.0094	<0.0185	<0.0010	<0.0007	0.0160 ± 0.0031
T64	0.1485 ± 0.0091	<0.0187	<0.0008	<0.0007	0.0187 ± 0.0029
T72	0.1437 ± 0.0109	<0.0155	<0.0010	<0.0006	0.0147 ± 0.0030

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

<u>Sample Site</u>	<u>Collection Date</u>	<u>H-3</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>Zr-95 Nb-95 (A)</u>	<u>I-131</u>	<u>Cs-134</u>	<u>Cs-137</u>	<u>Ba-140 La-140 (B)</u>
T42	20-Jan-00	<123	272 ± 28	<4	<4	<9	<4	<7	<6	<10	<4	<4	<7
	16-Feb-00	<119	276 ± 15	<2	<2	<3	<2	<3	<3	<4	<2	<2	<2
	15-Mar-00	<129	328 ± 32	<4	<3	<7	<3	<8	<7	<8	<4	<4	<5
T67	05-Jan-00	<123	236 ± 14	<1	<2	<3	<2	<4	<3	<3	<2	<2	<2
	16-Feb-00	<119	65 ± 18	<3	<4	<9	<4	<6	<7	<7	<4	<3	<6
	16-Mar-00	<129	306 ± 29	<3	<4	<8	<5	<8	<6	<8	<4	<3	<5
T81	05-Jan-00	<123	281 ± 28	<3	<4	<9	<5	<9	<7	<1<1	<4	<3	<8
	15-Feb-00	181 ± 40	292 ± 37	<3	<4	<8	<4	<9	<7	<8	<4	<3	<6
	15-Mar-00	<129	333 ± 16	<2	<2	<4	<2	<4	<3	<4	<2	<2	<2

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

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

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

Sample Site	Collection Date	<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-238</u>
T42	05-Jan-00	<140	205 ± 33	<11	<11	<11	<10	<770	720 ± 24	<42	539 ± 189
T67	07-Jan-00	<35	174 ± 17	<3	<3	<3	<3	<188	101 ± 3	33 ± 4	<118
T81	05-Jan-00	<160	331 ± 53	<12	<10	<12	<12	<873	796 ± 17	<53	<565

4.a.1. CRUSTACEA - Blue Crab, (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>
T67	28-Jan-00	1556 ± 180	<18	<17	<50	<23	<41	<17	<19	<345
T81	11-Jan-00	1309 ± 173	<22	<24	<49	<22	<49	<24	<22	1425 ± 219

4.a.2. FISH - Red Snapper, Mangrove Snapper, Seabass, Crevall Jack - (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>
T67	01-Feb-00	2300 ± 187	<20	<23	<57	<24	<45	<20	<19	<325	<73
T81	02-Feb-00	2441 ± 188	<19	<23	<53	<21	<54	<19	<22	<438	<102

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>Ra-226</u>
T40	20-Jan-00	946 ± 67	3537 ± 146	<20	<10	33 ± 4	<630	<226
	16-Feb-00	1460 ± 89	2766 ± 149	<21	<12	41 ± 6	<843	<289
	15-Mar-00	1060 ± 89	3189 ± 140	<20	<13	59 ± 7	<682	<254
T41	20-Jan-00	1432 ± 93	3980 ± 169	<24	<13	85 ± 10	<805	<286
	16-Feb-00	879 ± 76	3564 ± 150	<18	<11	99 ± 8	<752	<255
	15-Mar-00	1061 ± 70	1854 ± 106	<18	<9	132 ± 8	<589	<210
T67	20-Jan-00	1238 ± 73	4286 ± 162	<18	<15	<10	<708	<252
	16-Feb-00	1718 ± 99	2583 ± 140	<20	<12	72 ± 9	<881	<292
	16-Mar-00	505 ± 48	2987 ± 137	<16	<9	<9	<638	<197

TURKEY POINT SITE

Technical Specifications Sampling

Second Quarter, 2000

<u>Sample Type</u>	<u>Collection Frequency</u>	<u>Locations Sampled</u>	<u>Number of Samples</u>
1. Direct Radiation	Quarterly	22	22
2. Airborne			
2.a. Air Iodines	Weekly	5	64
2.b. Air Particulates	Weekly	5	64
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	0	0
4.a.2. Fish	Semiannually	0	0
4.b. Broadleaf Vegetation	Monthly	3	9
			Total: 168

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.

1. DIRECT RADIATION - TLDs - ($\mu\text{R}/\text{hour}$)

Sample Site	Deployment 22-Mar-00 Collection 14-Jun-00	Sample Site	Deployment 22-Mar-00 Collection 14-Jun-00
N-2	5.5 ± 0.2	W-9	4.7 ± 0.2
N-7	4.9 ± 0.2	WSW-8	5.6 ± 0.2
N-10	5.0 ± 0.2	SW-1	4.8 ± 0.2
NNW-2	4.1 ± 0.2	SW-8	4.7 ± 0.2
NNW-10	5.6 ± 0.2	SSW-5	4.7 ± 0.2
NW-1	6.5 ± 0.2	SSW-10	4.8 ± 0.2
NW-5	4.3 ± 0.2	S-5	4.4 ± 0.2
NW-10	7.9 ± 0.2	S-10	5.7 ± 0.2
WNW-10	5.6 ± 0.2	SSE-1	4.5 ± 0.2
W-1	6.5 ± 0.2	SSE-10	5.7 ± 0.2
W-5	4.8 ± 0.2	NNE-22	5.8 ± 0.2

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

Collection Date	<u>T51</u>	<u>T57</u>	<u>T58</u>	<u>T64</u>	<u>T72</u>
03-Apr-00	<0.03	<0.03	<0.03	<0.03	<0.03
10-Apr-00	<0.03	<0.03	<0.03	<0.03	<0.03
17-Apr-00	<0.03	<0.03	<0.03	<0.03	<0.03
24-Apr-00	<0.02	<0.02	<0.02	<0.02	<0.02
01-May-00	<0.03	<0.03	<0.03	<0.03	<0.03
08-May-00	<0.02	<0.02	<0.02	<0.02	<0.02
18-May-00	<0.01	<0.01	<0.03	<0.01	<0.01
25-May-00	<0.04	<0.04	<0.04	<0.04	<0.04
30-May-00	<0.04	<0.04	<0.04	<0.04	<0.04
05-Jun-00	<0.02	<0.02	<0.02	<0.02	<0.02
15-Jun-00	<0.02	<0.02	<0.02	<0.02	(A) <0.02
22-Jun-00	<0.02	<0.02	<0.02	<0.02	(B)
30-Jun-00	<0.02	<0.02	<0.02	<0.02	(C) <0.02

Site T-72 had a power outage from 08-Jun-00 at ~16:40 until 23-Jun-00 at ~14:35. This power outage was caused by a secondary transmission and distribution line from the nuclear power plant being installed/upgraded.

- (A) This sample had a run time of 80 hours out of 241 hours. The outage was at the end of the sampling period
- (B) There was no sample collected.
- (C) This sample had a run time of 165 hours out of 192. The outage was at the beginning of the sampling period.

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

Collection Date	Sample Site				
	T51	T57	T58	T64	T72
03-Apr-00	0.014 ± 0.002	0.014 ± 0.002	0.014 ± 0.002	0.016 ± 0.002	0.016 ± 0.002
10-Apr-00	0.016 ± 0.002	0.017 ± 0.002	0.014 ± 0.002	0.017 ± 0.002	0.016 ± 0.002
17-Apr-00	0.011 ± 0.002	0.008 ± 0.002	0.009 ± 0.002	0.006 ± 0.002	0.012 ± 0.002
24-Apr-00	0.019 ± 0.002	0.022 ± 0.002	0.016 ± 0.002	0.022 ± 0.002	0.017 ± 0.002
01-May-00	0.024 ± 0.003	0.021 ± 0.003	0.020 ± 0.003	0.020 ± 0.003	0.022 ± 0.003
08-May-00	0.018 ± 0.003	0.016 ± 0.002	0.011 ± 0.002	0.016 ± 0.002	0.016 ± 0.002
18-May-00	0.015 ± 0.002	0.015 ± 0.002	0.037 ± 0.005	0.012 ± 0.002	0.016 ± 0.002
25-May-00	0.020 ± 0.003	0.017 ± 0.002	0.016 ± 0.002	0.021 ± 0.003	0.020 ± 0.003
30-May-00	0.012 ± 0.003	0.016 ± 0.003	0.013 ± 0.003	0.015 ± 0.003	0.013 ± 0.003
05-Jun-00	0.008 ± 0.002	0.008 ± 0.002	0.006 ± 0.002	0.009 ± 0.002	0.014 ± 0.003
15-Jun-00	0.008 ± 0.002	0.011 ± 0.002	0.010 ± 0.002	0.012 ± 0.002	(A) 0.012 ± 0.004
22-Jun-00	0.010 ± 0.002	0.012 ± 0.002	0.010 ± 0.002	0.010 ± 0.002	(B)
30-Jun-00	0.013 ± 0.002	0.013 ± 0.002	0.017 ± 0.002	0.015 ± 0.002	(C) 0.015 ± 0.002
Mean:	0.014 ± 0.001	0.015 ± 0.001	0.015 ± 0.001	0.015 ± 0.001	0.016 ± 0.001

Site T-72 had a power outage from 08-Jun-00 at ~16:40 until 23-Jun-00 at ~14:35. This power outage was caused by a secondary transmission and distribution line from the nuclear power plant being installed/upgraded.

- (A) This sample had a run time of 80 hours out of 241 hours. The outage was at the end of the sampling period
- (B) There was no sample collected.
- (C) This sample had a run time of 165 hours out of 192. The outage was at the beginning of the sampling period.

2.b.2. AIR PARTICULATES GAMMA ANALYSIS OF QUARTERLY COMPOSITES (pCi/m³)Second Quarter, 2000

<u>Sample Site</u>	<u>Be-7</u>	<u>K-40</u>	<u>Cs-134</u>	<u>Cs-137</u>	<u>Pb-210</u>
T51	0.1161 ± 0.0103	<0.0173	<0.0008	<0.0006	0.0114 ± 0.0032
T57	0.1351 ± 0.0100	<0.0164	<0.0008	<0.0007	0.0144 ± 0.0030
T58	0.1499 ± 0.0116	<0.0183	<0.0014	<0.0010	0.0245 ± 0.0041
T64	0.1650 ± 0.0109	<0.0198	<0.0007	<0.0007	0.0159 ± 0.0028
T72	0.1491 ± 0.0113	<0.0177	<0.0008	<0.0008	0.0128 ± 0.0031

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	I-131	Cs-134	Cs-137	Ba-140 La-140
									(A)				(B)
T42	10-Apr-00	<134	362 ± 32	<3	<4	<8	<4	<10	<8	<9	<4	<3	<6
	02-May-00	<124	348 ± 33	<4	<4	<9	<4	<6	<6	<8	<4	<4	<6
	06-Jun-00	<123	332 ± 31	<4	<4	<9	<4	<7	<6	<12	<3	<4	<8
T67	14-Apr-00	<134	208 ± 27	<3	<4	<8	<4	<7	<7	<11	<3	<4	<6
	03-May-00	<124	283 ± 31	<4	<4	<8	<4	<9	<8	<9	<4	<4	<7
	07-Jun-00	<123	397 ± 34	<4	<3	<8	<4	<6	<8	<13	<4	<4	<8
T81	12-Apr-00	<134	396 ± 33	<3	<4	<7	<4	<11	<7	<8	<4	<5	<7
	02-May-00	<124	352 ± 34	<4	<4	<9	<4	<8	<5	<10	<4	<3	<6
	06-Jun-00	<123	402 ± 33	<4	<4	<9	<4	<8	<6	<13	<4	<4	<7

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

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

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

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

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>
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These samples were previously collected.

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>
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These samples were previously collected.

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>Ra-226</u>
T40	13-Apr-00	1255 ± 87	3065 ± 137	<17	<11	53 ± 5	<620	<253
	03-May-00	1219 ± 86	3025 ± 158	<24	<16	57 ± 7	>796	<312
	06-Jun-00	889 ± 76	3262 ± 148	<37	<11	56 ± 6	<881	<298
T41	13-Apr-00	963 ± 89	3067 ± 145	<19	<11	299 ± 12	<754	<271
	03-May-00	634 ± 57	4230 ± 165	<23	<14	62 ± 6	<730	<252
	06-Jun-00	612 ± 51	5222 ± 149	<28	<10	77 ± 7	<684	<216
T67	14-Apr-00	803 ± 45	4446 ± 140	<13	<9	<9	<547	<200
	03-May-00	1153 ± 70	2340 ± 125	<21	<12	32 ± 5	<656	<250
	07-Jun-00	1025 ± 69	6146 ± 202	<32	<12	<12	<878	<300

TURKEY POINT SITE

Offsite Dose Calculation Manual Specifications Sampling

Third Quarter, 2000

<u>Sample Type</u>	<u>Collection Frequency</u>	<u>Locations Sampled</u>	<u>Number of Samples</u>
1. Direct Radiation	Quarterly	22	22
2. Airborne			
2.a. Air Iodines	Weekly	5	65
2.b. Air Particulates	Weekly	5	65
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	2
4.a.2. Fish	Semiannually	2	2
4.b. Food Products			
Broadleaf Vegetation	Monthly	3	9
			Total: 177

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.

1. DIRECT RADIATION - TLDs - ($\mu\text{R}/\text{hour}$)

Sample Site	Deployment 14-Jun-00 Collection 14-Sep-00	Sample Site	Deployment 14-Jun-00 Collection 14-Sep-00
N-2	5.6 ± 0.2	WSW-8	5.1 ± 0.2
N-7	5.0 ± 0.2		
N-10	5.1 ± 0.2	SW-1	5.1 ± 0.2
		SW-8	5.5 ± 0.2
NNW-2	4.5 ± 0.2		
NNW-10	5.8 ± 0.2	SSW-5	5.2 ± 0.2
		SSW-10	5.2 ± 0.2
NW-1	6.8 ± 0.3		
NW-5	4.6 ± 0.2	S-5	4.8 ± 0.2
NW-10	7.8 ± 0.3	S-10	5.8 ± 0.2
WNW-10	6.5 ± 0.2	SSE-1	4.7 ± 0.2
		SSE-10	6.1 ± 0.2
W-1	7.2 ± 0.3		
W-5	5.5 ± 0.2	NNE-22	6.4 ± 0.2
W-9	4.8 ± 0.2		

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

Collection Date	Sample Site				
	T51	T57	T58	T64	T72
05-Jul-00	<0.04	<0.04	<0.04	<0.04	<0.03
13-Jul-00	<0.02	<0.02	<0.02	<0.01	<0.01
18-Jul-00	<0.01	<0.01	<0.01	<0.02	<0.02
24-Jul-00	<0.02	<0.02	<0.02	<0.02	<0.02
02-Aug-00	<0.01	<0.01	<0.01	<0.01	<0.01
07-Aug-00	<0.03	<0.03	<0.03	<0.03	<0.03
14-Aug-00	<0.02	<0.02	<0.02	<0.02	<0.02
21-Aug-00	<0.02	<0.02	<0.02	<0.02	<0.02
29-Aug-00	<0.01	<0.01	<0.01	<0.01	<0.01
05-Sep-00	<0.03	<0.03	<0.03	<0.03	<0.03
14-Sep-00	<0.03	<0.03	<0.03	<0.02	<0.02
18-Sep-00	<0.04	<0.04	<0.04	<0.04	<0.04
26-Sep-00	<0.02	<0.02	<0.02	<0.02	<0.02

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

Collection Date	Sample Site				
	T51	T57	T58	T64	T72
05-Jul-00	0.011 ± 0.003	0.014 ± 0.003	0.014 ± 0.003	0.010 ± 0.003	0.012 ± 0.002
13-Jul-00	0.014 ± 0.002	0.014 ± 0.002	0.018 ± 0.002	0.014 ± 0.002	0.018 ± 0.002
18-Jul-00	0.016 ± 0.003	0.016 ± 0.003	0.025 ± 0.003	0.020 ± 0.004	0.018 ± 0.004
24-Jul-00	0.017 ± 0.003	0.016 ± 0.003	0.011 ± 0.002	0.011 ± 0.002	0.011 ± 0.002
02-Aug-00	0.008 ± 0.001	0.009 ± 0.001	0.013 ± 0.002	0.010 ± 0.002	0.009 ± 0.002
07-Aug-00	0.012 ± 0.003	0.007 ± 0.002	0.009 ± 0.003	0.019 ± 0.003	0.012 ± 0.003
14-Aug-00	0.015 ± 0.002	0.013 ± 0.002	0.016 ± 0.002	0.014 ± 0.002	0.015 ± 0.002
21-Aug-00	0.011 ± 0.002	0.010 ± 0.002	0.009 ± 0.002	0.012 ± 0.002	0.012 ± 0.002
29-Aug-00	0.014 ± 0.002	0.010 ± 0.002	0.008 ± 0.002	0.011 ± 0.002	0.011 ± 0.002
05-Sep-00	0.008 ± 0.002	0.009 ± 0.002	0.008 ± 0.002	0.008 ± 0.002	0.011 ± 0.002
14-Sep-00	0.004 ± 0.001	0.005 ± 0.001	0.004 ± 0.001	0.003 ± 0.001	0.004 ± 0.001
18-Sep-00	0.011 ± 0.003	0.012 ± 0.003	0.014 ± 0.003	0.010 ± 0.003	0.015 ± 0.003
26-Sep-00	0.015 ± 0.002	0.015 ± 0.002	0.018 ± 0.002	0.014 ± 0.002	0.017 ± 0.002
Mean:	0.012 ± 0.001	0.012 ± 0.001	0.013 ± 0.001	0.012 ± 0.001	0.013 ± 0.001

2.b.2. AIR PARTICULATES - GAMMA ANALYSIS OF QUARTERLY COMPOSITES (pCi/m³)Third Quarter, 2000

Sample Site	Be-7	K-40	Cs-134	Cs-137	Pb-210
T51	0.0901 ± 0.0084	<0.0192	<0.0011	<0.0009	0.0204 ± 0.0031
T57	0.0712 ± 0.0079	<0.0156	<0.0008	<0.0007	0.0108 ± 0.0037
T58	0.0817 ± 0.0081	<0.0196	<0.0012	<0.0008	0.0142 ± 0.0035
T64	0.0989 ± 0.0081	<0.0194	<0.0007	<0.0005	<0.0086
T72	0.1011 ± 0.0092	<0.0174	<0.0008	<0.0007	0.0218 ± 0.0028

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

<u>Sample Site</u>	<u>Collection Date</u>	<u>H-3</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>Zr-95 Nb-95 (A)</u>	<u>I-131</u>	<u>Cs-134</u>	<u>Cs-137</u>	<u>Ba-140 La-140 (B)</u>
T42	07-Jul-00	<122	292 ± 35	<4	<3	<8	<4	<9	<8	<6	<4	<3	<5
	23-Aug-00	<124	287 ± 31	<3	<4	<8	<3	<8	<6	<6	<4	<4	<5
	08-Sep-00	<121	303 ± 36	<4	<3	<7	<4	<8	<7	<8	<4	<4	<6
T67	20-Jul-00	<120	292 ± 28	<4	<4	<9	<4	<8	<7	<14	<5	<4	<8
	23-Aug-00	<124	306 ± 30	<4	<3	<6	<4	<7	<7	<7	<5	<4	<5
	12-Sep-00	<121	302 ± 31	<3	<4	<8	<4	<8	<7	<8	<5	<4	<5
T81	07-Jul-00	<122	405 ± 34	<3	<4	<8	<4	<6	<7	<6	<4	<4	<5
	23-Aug-00	<124	344 ± 35	<4	<3	<10	<5	<9	<6	<7	<4	<3	<5
	08-Sep-00	183 ± 24	350 ± 36	<3	<3	<7	<4	<8	<6	<10	<4	<4	<4

(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	<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>U-238</u>
T42	18-Jul-00	190 ± 26	300 ± 30	<4	<4	<4	5 ± 2	1106 ± 173	671 ± 14	667 ± 65
T67	20-Jul-00	<76	283 ± 37	<6	<6	<7	<8	<524	135 ± 18	<391
T81	17-Jul-00	<144	411 ± 64	<11	<10	<12	<10	<365	749 ± 34	516 ± 83

4.a.1. CRUSTACEA – Blue Crab - (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>
T67	08-Aug-00	1774 ± 190	<20	<25	<58	<20	<42	<21	<22	<599 ± 177	<77
T81	04-Aug-00	1195 ± 172	<19	<24	<56	<29	<46	<21	<22	<493	<85

4.a.2. FISH – Mixed Species - (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>
T67	11-Aug-00	2467 ± 207	<18	<22	<51	<19	<51	<20	<18	<363	<86
T81	10-Aug-00	3182 ± 221	<20	<23	<58	<15	<45	<23	<21	<325	<72

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>Ra-226</u>
T40	25-Jul-00	1302 ± 95	3020 ± 138	<23	<13	66 ± 8	<898	<264
	23-Aug-00	1292 ± 68	2122 ± 121	<19	<10	64 ± 6	<808	<254
	12-Sep-00	2005 ± 98	2929 ± 124	<19	<8	46 ± 5	800 ± 339	<229
T41	25-Jul-00	1347 ± 80	2683 ± 122	<21	<11	261 ± 11	<874	<275
	23-Aug-00	1126 ± 66	4425 ± 158	<16	<11	83 ± 6	<900	<263
	12-Sep-00	876 ± 71	2868 ± 124	<18	<11	40 ± 5	<719	<223
T67	20-Jul-00	1289 ± 40	2541 ± 63	<16	<5	35 ± 3	<395	<127
	23-Aug-00	991 ± 41	3786 ± 74	<9	<6	<7	961 ± 163	<129
	12-Sep-00	1751 ± 118	4556 ± 162	<20	<12	<12	1620 ± 360	<263

TURKEY POINT SITE

Technical Specifications Sampling

Fourth Quarter, 2000

<u>Sample Type</u>	<u>Collection Frequency</u>	<u>Locations Sampled</u>	<u>Number of Samples</u>
1. Direct Radiation	Quarterly	22	22
2. Airborne			
2.a. Air Iodines	Weekly	5	65
2.b. Air Particulates	Weekly	5	65
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	0	0
4.a.2. Fish	Semiannually	0	0
4.b. Food Products			
Broadleaf Vegetation	Monthly	3	9
			Total: 170

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.

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

<u>Sample Site</u>	<u>Deployment 14-Sep-00 Collection 05-Dec-00</u>	<u>Sample Site</u>	<u>Deployment 14-Sep-00 Collection 05-Dec-00</u>
N-2	5.7 \pm 0.2	WSW-8	4.8 \pm 0.2
N-7	4.8 \pm 0.2		
N-10	5.0 \pm 0.2	SW-1	4.8 \pm 0.2
		SW-8	4.9 \pm 0.2
NNW-2	4.6 \pm 0.2		
NNW-10	5.3 \pm 0.2	SSW-5	4.8 \pm 0.2
		SSW-10	5.1 \pm 0.2
NW-1	6.6 \pm 0.1		
NW-5	4.5 \pm 0.2	S-5	4.5 \pm 0.3
NW-10	7.8 \pm 0.2	S-10	5.6 \pm 0.2
WNW-10	5.9 \pm 0.2	SSE-1	4.6 \pm 0.2
		SSE-10	5.5 \pm 0.2
W-1	6.2 \pm 0.2		
W-5	4.8 \pm 0.2	NNE-22	5.8 \pm 0.2
W-9	5.0 \pm 0.2		

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

Collection Date	Sample Site				
	T51	T57	T58	T64	T72
02-Oct-00	<0.03	<0.03	<0.03	<0.03	<0.03
12-Oct-00	<0.02	<0.02	<0.02	<0.02	<0.02
17-Oct-00	<0.04	<0.04	<0.04	<0.04	<0.04
27-Oct-00	<0.02	<0.02	<0.02	<0.02	<0.02
01-Nov-00	<0.03	<0.03	<0.03	<0.03	<0.03
06-Nov-00	<0.03	<0.03	<0.03	<0.03	<0.03
16-Nov-00	<0.01	<0.01	<0.01	<0.01	<0.01
21-Nov-00	<0.02	<0.02	<0.02	<0.02	<0.02
30-Nov-00	<0.01	<0.01	<0.01	<0.01	<0.01
04-Dec-00	<0.04	<0.04	<0.04	<0.04	<0.04
12-Dec-00	<0.02	<0.02	<0.02	<0.02	<0.02
19-Dec-00	<0.02	<0.02	<0.02	<0.02	<0.02
26-Dec-00	<0.02	<0.02	<0.02	<0.02	<0.02

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

<u>Collection Date</u>	<u>Sample Site</u>				
	<u>T51</u>	<u>T57</u>	<u>T58</u>	<u>T64</u>	<u>T72</u>
02-Oct-00	0.004 ± 0.002	0.005 ± 0.002	0.006 ± 0.002	0.004 ± 0.002	0.006 ± 0.002
12-Oct-00	0.010 ± 0.001	0.010 ± 0.001	0.007 ± 0.001	0.011 ± 0.001	0.010 ± 0.001
17-Oct-00	0.025 ± 0.003	0.024 ± 0.003	0.028 ± 0.003	0.036 ± 0.004	0.017 ± 0.002
27-Oct-00	0.020 ± 0.002	0.022 ± 0.002	0.019 ± 0.002	0.019 ± 0.002	0.020 ± 0.002
01-Nov-00	0.030 ± 0.003	0.025 ± 0.003	0.027 ± 0.003	0.031 ± 0.003	0.031 ± 0.003
06-Nov-00	0.019 ± 0.003	0.014 ± 0.003	0.016 ± 0.003	0.022 ± 0.003	0.017 ± 0.003
16-Nov-00	0.018 ± 0.002	0.017 ± 0.002	0.017 ± 0.002	0.018 ± 0.002	0.016 ± 0.002
21-Nov-00	0.012 ± 0.003	0.011 ± 0.003	0.014 ± 0.003	0.018 ± 0.003	0.017 ± 0.003
30-Nov-00	0.017 ± 0.002	0.019 ± 0.002	0.019 ± 0.002	0.015 ± 0.002	0.016 ± 0.002
04-Dec-00	0.025 ± 0.004	0.024 ± 0.004	0.023 ± 0.004	0.030 ± 0.004	0.021 ± 0.004
12-Dec-00	0.007 ± 0.002	0.007 ± 0.002	0.006 ± 0.002	0.007 ± 0.002	0.008 ± 0.002
19-Dec-00	0.010 ± 0.002	0.010 ± 0.002	0.011 ± 0.002	0.010 ± 0.002	0.008 ± 0.002
26-Dec-00	0.022 ± 0.003	0.019 ± 0.002	0.020 ± 0.002	0.020 ± 0.002	0.016 ± 0.002
Mean:	0.017 ± 0.001	0.016 ± 0.001	0.016 ± 0.001	0.019 ± 0.001	0.015 ± 0.001

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

<u>Sample Site</u>	<u>Fourth Quarter, 2000</u>				
	<u>Be-7</u>	<u>K-40</u>	<u>Cs-134</u>	<u>Cs-137</u>	<u>Pb-210</u>
T51	0.1685 ± 0.0130	<0.0133	<0.0010	<0.0004	<0.0090
T57	0.1410 ± 0.0122	<0.0141	<0.0007	<0.0009	0.0263 ± 0.0047
T58	0.1748 ± 0.0114	<0.0126	<0.0007	<0.0008	0.0185 ± 0.0041
T64	0.1606 ± 0.0136	<0.0132	<0.0009	<0.0007	0.0256 ± 0.0042
T72	0.1642 ± 0.0109	<0.0124	<0.0011	<0.0007	0.0234 ± 0.0052

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	18-Oct-00	<120	181 ± 28	<3	<4	<8	<3	<7	<8	<7	<4	<4	<5
	30-Nov-00	<116	210 ± 27	<4	<4	<7	<4	<5	<8	<8	<3	<3	<6
	20-Dec-00	<132	261 ± 29	<3	<3	<5	<3	<6	<5	<6	<2	<2	<4
T67	19-Oct-00	<120	144 ± 23	<4	<4	<6	<5	<7	<6	<10	<4	<4	<6
	28-Nov-00	<116	190 ± 29	<3	<4	<7	<4	<7	<7	<5	<4	<4	<7
	21-Dec-00	<132	187 ± 28	<3	<3	<7	<3	<5	<5	<6	<3	<3	<4
T81	18-Oct-00	<117	230 ± 26	<3	<4	<7	<4	<8	<8	<8	<4	<3	<4
	30-Nov-00	<116	278 ± 31	<3	<4	<10	<4	<8	<7	<10	<4	<4	<4
	20-Dec-00	205 ± 25	394 ± 36	<4	<4	<7	<4	<7	<6	<7	<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	<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>U-238</u>
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These samples were previously collected.

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>
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T67 This sample was previously collected.

T81 This sample was previously collected

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>
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T67 This sample was previously collected

T81 This sample was previously collected

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>Ra-226</u>
T40	19-Oct-00	1273 ± 95	2721 ± 138	<22	<17	49 ± 8	1486 ± 329	<296
	27-Nov-00	688 ± 58	3339 ± 139	<13	<11	69 ± 7	<805	<261
	21-Dec-00	1597 ± 91	2578 ± 136	<18	<7	95 ± 8	1308 ± 335	<218
T41	19-Oct-00	980 ± 81	3980 ± 176	<24	<13	48 ± 7	<889	<303
	27-Nov-00	732 ± 66	3278 ± 133	<13	<10	26 ± 6	<756	<233
	21-Dec-00	1097 ± 40	5147 ± 92	<8	<5	39 ± 3	404 ± 167	<110
T67	19-Oct-00	980 ± 82	2418 ± 128	<22	<12	49 ± 7	<790	<285
	28-Nov-00	369 ± 42	2452 ± 103	<9	<9	48 ± 5	<588	<182
	21-Dec-00	1294 ± 43	3131 ± 76	<8	<5	<5	739 ± 139	<105

2000
ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT
TURKEY POINT PLANT – UNITS 3 & 4

ATTACHMENT C

RESULTS FROM THE INTERLABORATORY

COMPARISON PROGRAM 2000

DEPARTMENT OF ENERGY

QAP 52, June 2000

AND

QAP 53, December 2000

DOE-QAP 52 RESULTS

Radionuclide	Reported Value	Reported Error	EML Value	EML Error	Reported EML	Evaluation
Matrix: AI Air Filter Bq/filter						
CO57	6.060	0.060	5.310	0.220	1.141	W
CO60	5.740	0.070	5.320	0.260	1.079	A
CS137	6.800	0.100	6.100	0.300	1.115	A
GROSS ALPHA	2.240	0.080	3.020	0.300	0.742	W
GROSS BETA	2.830	0.080	2.420	0.200	1.169	A
MN54	30.260	0.040	27.200	0.800	1.112	A
RU106	2.100	0.700	2.010	1.940	1.045	A
Matrix: SO Soil Bq/kg						
AC228	89.000	4.000	97.600	4.200	0.912	A
Bq U	256.000	8.000	229.000	23.000	1.118	A
CS137	333.000	5.000	339.000	9.300	0.982	A
K40	790.000	20.000	811.000	29.000	0.974	A
TH234	128.000	4.000	130.000	5.000	0.985	A
Matrix: VE Vegetation Bq/kg						
CO60	53.900	0.700	52.800	1.000	1.021	A
CS137	1515.000	2.000	1380.000	20.000	1.098	A
K40	580.000	10.000	521.000	20.000	1.113	A
Matrix: WA Water Bq/L						
CO60	51.500	0.300	48.900	1.800	1.053	A
CS137	109.500	0.900	103.000	4.000	1.063	A
GROSS ALPHA	1780.000	30.000	1700.000	170.000	1.047	A
GROSS BETA	980.000	20.000	690.000	70.000	1.420	W
H3	84.000	3.000	79.400	2.500	1.058	A
NI63	95.000	1.000	112.000	11.000	0.848	A
SR90	2.780	0.020	3.390	0.120	0.820	W

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

DOE-QAP 53 RESULTS

Radionuclide	Reported Value	Reported Error	EML Value	EML Error	Reported EML	Evaluation
Matrix: AI Air Filter Bq/filter						
CO57	16.490	0.040	14.550	0.460	1.133	A
CO60	8.900	0.100	8.430	0.480	1.056	A
CS137	8.130	0.060	7.410	0.360	1.097	A
GROSS ALPHA	2.260	0.050	2.350	0.150	0.962	A
GROSS BETA	1.800	0.040	1.520	0.150	1.184	A
MN54	46.900	0.300	43.200	1.300	1.086	A
Matrix: SO Soil Bq/kg						
AC228	71.420	1.740	80.200	3.600	0.891	A
CS137	999.980	2.180	1020.000	51.000	0.980	A
K40	663.800	3.40	713.000	38.000	0.931	A
TH234	108.650	5.370	148.000	10.000	0.734	W
U238	108.650	5.370	163.000	10.000	0.667	W
Matrix: VE Vegetation Bq/kg						
CO60	31.420	0.280	32.800	1.300	0.958	A
CS137	871.480	2.490	867.000	44.000	1.005	A
K40	626.520	8.550	639.000	34.000	0.980	A
Matrix: WA Water Bq/L						
CO60	72.690	0.180	73.700	2.900	0.986	A
CS137	67.980	0.460	67.000	3.500	1.015	A
GROSS ALPHA	1202.950	16.750	1070.000	100.000	1.124	W
GROSS BETA	1051.180	10.110	950.000	90.000	1.107	A
H3	121.120	3.380	91.300	.0300	1.327	W

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