FPL.

POWERING TODAY.
EMPOWERING TOMORROW.®

MAY 14 2009

L-2009-096
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
2008 Annual Radiological
Environmental Operating Report

Enclosed is the 2008 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 Robert J. Tomonto at (305) 246-7327.

Sincerely,

William Jefferson, Jr.
Vice President
Turkey Point Nuclear Plant

SM

Enclosure

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

IE25
NRR

2008
ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT
TURKEY POINT PLANT – UNITS 3 & 4

TABLE OF CONTENTS

DESCRIPTION	PAGE
Introduction	1
Radiological Environmental Monitoring Program	1
Discussion and Interpretation of Results	4
Environmental Radiological Monitoring Program Annual Summary	TABLE 1
Deviations / Missing Data	TABLE 1A
Analyses with LLDs Above Required Detection Capabilities	TABLE 1B
Land Use Census	TABLE 2
Key to Sample Locations	ATTACHMENT A
Radiological Surveillance of Florida Power and Light Company's Turkey Point Site	ATTACHMENT B
First Quarter, 2008	
Second Quarter, 2008	
Third Quarter, 2008	
Fourth Quarter, 2008	
Results from the Interlaboratory Comparison Program, 2008	ATTACHMENT C
Ground Water Protection, Industry Initiative	ATTACHMENT D

2008
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, 2008 to December 31, 2008.

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

2008
ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT
TURKEY POINT PLANT – UNITS 3 & 4

I. INTRODUCTION

This report is submitted pursuant to Specification 6.9.1.3 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 Units 3 & 4 ODCM.

1. Sample Locations, Types and Frequencies:

   a. Direct radiation gamma exposure rate is monitored continuously at 22 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.

Note: Ground Water Protection, NEI Initiative: The program and results are described in Attachment D

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.

Note: The State of Florida is not involved in the (Industry Initiative) ground water monitoring program.

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.

E. Interlaboratory Comparison Program

The intercomparison program consists of participating in the DOE Mixed Analyte Performance Evaluation Program (MAPEP). This program provides similar testing (matrices, nuclides, and levels) as the former EPA Interlaboratory Comparison Program and is referred to as the Mixed Analyte Performance Evaluation Program (MAPEP). The samples are analyzed using the methods applicable to the REMP (gamma spectroscopy, Gross Beta, and Tritium for water).

From the MAPEP handbook:
Acceptance criteria were developed from a review of precision and accuracy data compiled by other performance evaluation programs (PEPs), the analytical methods literature, from several MAPEP pilot studies, and from what is considered reasonable, acceptable, and achievable for routine analyses among the more experienced laboratories.

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 note in the State's Third Quarter report inferring an increase in one TLD location is addressed in this report following "Conclusions".
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.

3. Waterborne, Surface Water:

The results of radioactivity measurements in surface water samples are consistent with past measurements. Tritium was reported as present in two 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 6% of the required detection level specified by ODCM Table 5.1-3.

4. Waterborne, Sediment:

The results are consistent with past measurements. Only 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 4% of the reporting level specified by ODCM Table 5.1-2. No other fission products were detected.

7. Land Use Census

There were no additions to the land use relative to last year's report; a garden that was in the NW sector did not appear in this year's 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.

8. Interlaboratory Comparison Program

The State laboratory participated MAPEP 18 and 19.

For MAPEP 18, the results for Water, Air Filter and Vegetation matrices for those nuclides associated with nuclear power plant operation and using analytical methods used in the REMP are Acceptable with a warning for Am-241 in vegetation.
The Soil matrix had a not acceptable for Co-60. This sample was to determine the analytical response for Co-60 in the presence of Cs-134; Cs-134 has a photon energy almost the same as one of the two Co-60 energies. This is why the Acceptance Range entry is "Sensitivity Eval.". An evaluation of the laboratory methods was performed; the conservative result was due to interference from the presence of Cs-134 in a sample that has very little Co-60. The assay algorithm has been corrected to account for this in the future. The history of soil sampling was reviewed; as expected, there has not been a case of positive Cs-134 in a sample.
These special evaluations are used by DOE to get a feel for the range of LLDs, afforded by the participants.

For MAPEP 19, all result were acceptable.

The results are listed in Attachment C.

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.

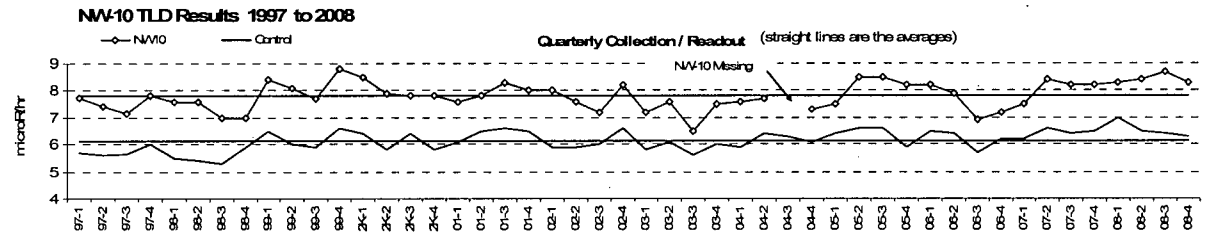
D. Review & Assessment of TLD "Trend"

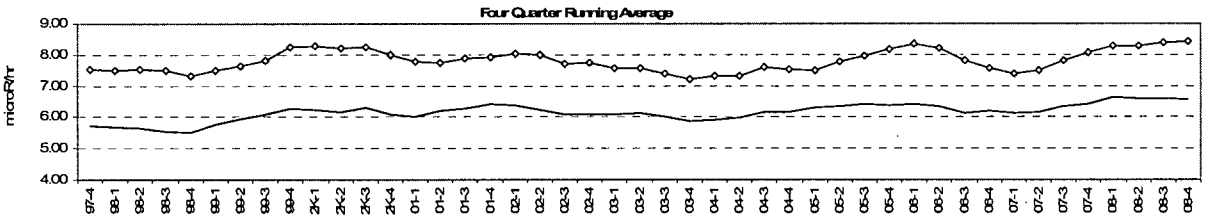
The Third Quarter 2008 Report TLD results contains a footnote regarding TLD location NW-10 (10 miles NW of plant). The footnote states "A new max value recorded. An increasing trend has been noted over the last four quarters for this site. An increase of 1.8 μR/hour over the last two years has been recorded."

The reported results, 1997 to present, were compiled and graphically reviewed; the graphics are shown below. TLD data exists from the preoperational timeframe; 1997 to current is readily available in an electronic database (Excel)

The graphical review suggests a 'process change' to the TLD program rather than a 'true' increase in exposure rates at that location. Whatever affected NW-10 also

affected the Control location. The State has been informed & are evaluating the TLD process.





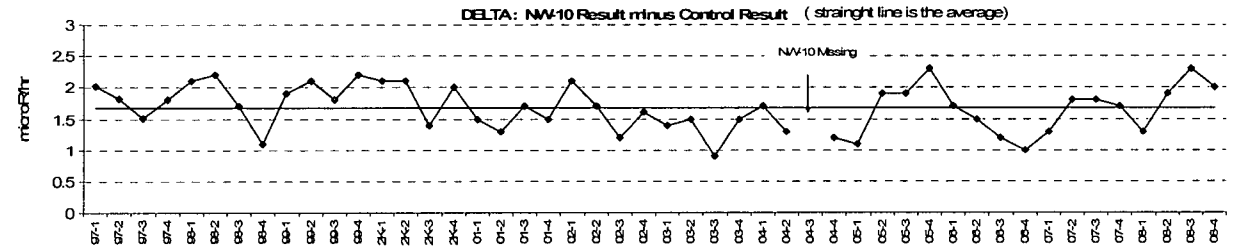


TABLE 1

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM ANNUAL SUMMARY
Name of Facility: Turkey Point Units 3 & 4, Docket No(s): 50-250 & 50-251
Location of Facility: Miami-Dade, Florida, Reporting Period: January 1 - December 31, 2008
(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)[b] 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, 87[d]	---	5.9 (83/83) 4.7 - 8.7	NW-10 10 mi., NW	8.4 (4/4) 8.3 - 8.7	6.6 (4/4) 6.3 - 7.0

Number of Non-routine 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: Miami-Dade, Florida, Reporting Period: January 1 - December 31, 2008
(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)[b] 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, 265	0.024	< MDA	---	---	< MDA
Gross Beta, 265	0.0025	0.014 (212/212) 0.004 - 0.029	T-72 < 1 mi., WSW	0.014 (53/53) 0.004 - 0.026	0.014 (53/53) 0.006 - 0.026
Composite Gamma Isotopic, 20					
^{7}Be	0.0052	0.1743 (20/20) 0.1243 - 0.2227	T-57 4 mi., NW	0.1833 (4/4) 0.1243 - 0.2227	0.1787 (4/4) 0.1448 - 0.2071
^{40}K	---	0.0152 (1/20)	T-58 4 mi. , NW	0.0152 (1/4)	< MDA
^{134}Cs	0.00069	< MDA	---	---	< MDA
^{137}Cs	0.00066	< MDA	---	---	< MDA
^{210}Pb	---	0.0186 (7/20) 0.0084 - 0.0288	T-58 4 mi. , NW	0.0219 (2/4) 0.0150 – 0.0288	0.0200 (3/4) 0.0118 – 0.0304

Number of Non-routine 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: Miami-Dade, Florida, Reporting Period: January 1 - December 31, 2008
(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)[b] 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	172	131 (2/24) 99 - 162	T-81 6 mi., S	162 (1/12)	<MDA
Gamma Isotopic, 36					
^{40}K	60	339 (23/24) 157 - 499	T-81 6 mi., S	357 (12/12) 207 - 440	249 (10/12) 104 - 328
^{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

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: Miami-Dade, Florida, Reporting Period: January 1 - December 31, 2008
(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)[b] 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, 6					
^{7}Be	100	<MDA	---	---	< MDA
^{40}K	140	314 (4/4) 241 - 405	T-42 < 1 mi., ENE	346 (2/2) 286 – 405	408 (2/2) 244 - 571
^{226}Ra	49	697 (4/4) 584 - 767	T-81 6 mi., S	760 (2/2) 752 - 767	617 (2/2) 180 - 1054
^{232}Th	---	79 (1/4)	T-42 < 1 mi., ENE	79 (1/2)---	140 (2/2) 85 - 194
^{235}U	---	61 (1/4)	T-42 < 1 mi., ENE	61 (1/2)	< MDA
^{238}U	---	1573 (4/4) 1292 - 1978	T-42 < 1 mi., ENE	1635 (2/2) 1292 - 1978	< 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
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, 2008
(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	1864 (2/2) 1687 - 2040	T-81 6 mi., S	1864 (2/2) 1687 - 2040	1623 (2/2) 1474 - 1772
^{226}Ra	20	466 (1/2)	T-81 6 mi., S	466 (1/2)	1540 (1/2)
^{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

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: Miami-Dade, Florida, Reporting Period: January 1 - December 31, 2008
(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					
^{7}Be	---	<MDA	---	---	<MDA
^{40}K	130	2660 (2/2) 2330- 2989	T-81 6 mi., S	2660 (2/2) 2330- 2989	2705 (2/2) 2648 - 2762
^{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
^{226}Ra	20	<MDA	---	---	<MDA
^{238}U	---	<MDA	---	---	756 (1/2)

Number of Non-routine 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: Miami-Dade, Florida, Reporting Period: January 1 - December 31, 2008
(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	1861 (24/24) 862 - 3922	T-41 2 mi., W/NW	1864 (12/12) 862 - 2381	1525 (12/12) 493 - 3370
^{40}K	100	4463 (24/24) 2747 - 6675	T-41 2 mi., W/NW	5576 (12/12) 4173 - 6675	4945 (12/12) 2541 - 6817
^{58}Co	9	<MDA	---	---	<MDA
^{60}Co	10	<MDA	---	---	<MDA
^{131}I	9	<MDA	---	---	<MDA
^{134}Cs	8	<MDA	---	---	<MDA
^{137}Cs	8	48 (23/24) 28 - 78	T-40 3 mi., W	49 (11/12) 29 - 78	60 (2/12) 46 - 74
^{210}Pb	---	711 (1/24)	T-41 2 mi., W/NW	711 (1/12)	<MDA
^{212}Pb	---	28 (1/24)	T-40 3 mi., W	28 (1/12)	<MDA

Number of Non routine 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: Miami-Dade, Florida, Reporting Period: January 1 - December 31, 2008
(County, State)

NOTES

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

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

b. Mean and range based upon detectable measurements only. Fraction of detectable measurements at specified locations is indicated in parentheses (f).

c. Specific identifying information for each sample location is provided in Attachment A.

d. Results were based upon the average net response of three elements in a TLD. (Thermoluminescent Dosimeter).

MDA refers to minimum detectable activity.

2008
ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT
TURKEY POINT PLANT – UNITS 3 & 4

TABLE 1A

DEVIATIONS / MISSING DATA

A)	Pathway:	Direct Exposure, TLD
	Location:	NNW-10 , 10 miles North-Northwest
	Dates:	10-Jun-08 to 17-Sep-08
	Deviation:	Failure to provide continuous monitoring.
	Description of Problem:	TLD missing.
	Corrective Action	Replaced TLD.

2008
ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT
TURKEY POINT PLANT – UNITS 3 & 4

TABLE 1B

ANALYSIS WITH LLDs ABOVE ODCM TABLE 5.1-3 DETECTION CAPABILITIES
1/1/2008 – 12/31/2008

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

TABLE 2

LAND USE CENSUS

Distance to Nearest (a, b)

Sector	8/08 Milk (c) Animal	8/08 Residence (g)	8/08 Garden (d)
N	L (e)	2.0 / 354	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	3.7 / 302	4.5 / 303
NW	L	3.7 / 311	L
NNW	L	4.4 / 333	4.6 / 327

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 2.0 miles bearing 354 degrees is recorded as 2.0 / 354.

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:

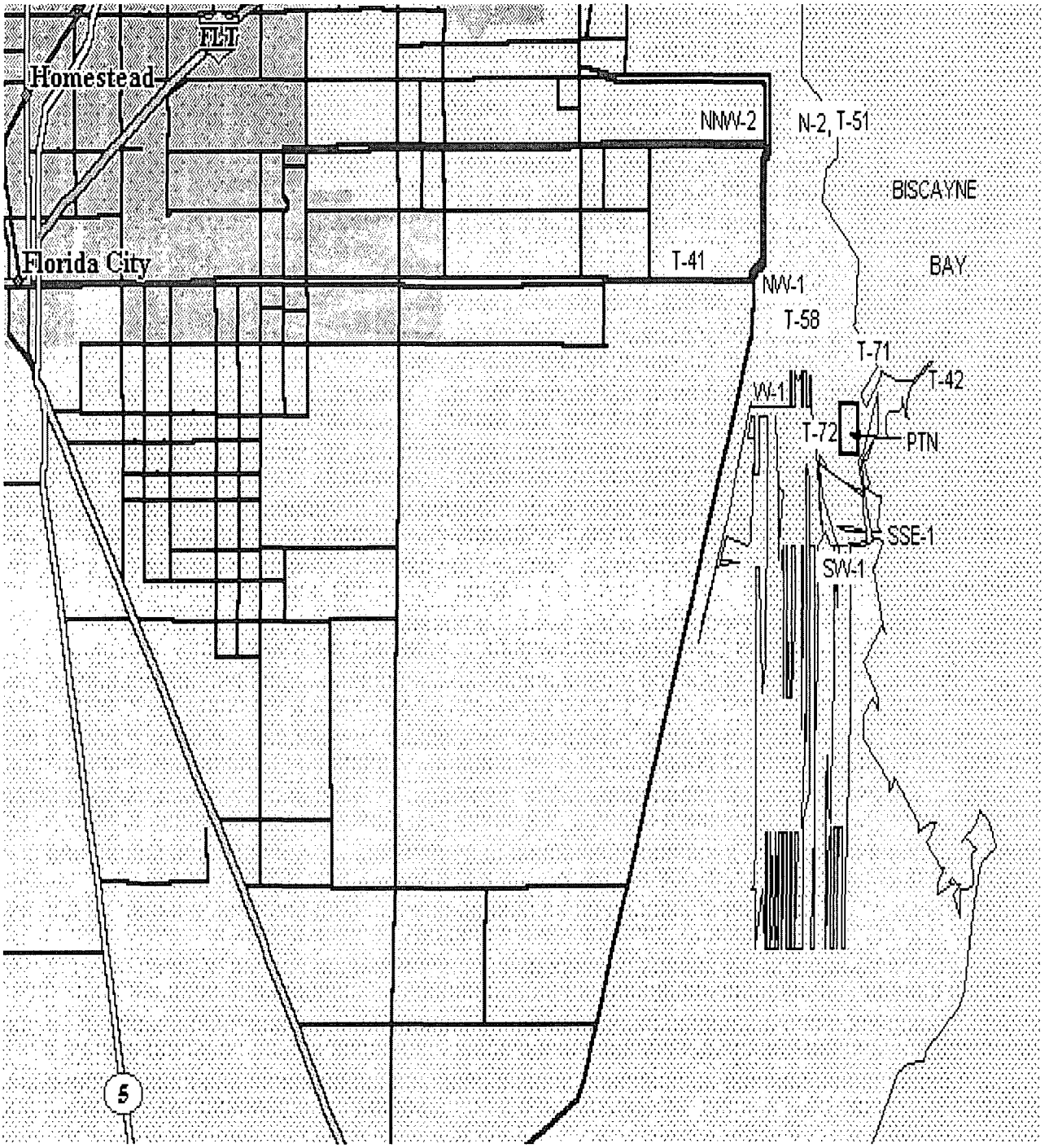
Sector	Distance	Description
N	1.9 / 349	24-hour Security Staff Building
NNW	1.9 / 349	Security booth at park entrance

ATTACHMENT A

KEY TO SAMPLE LOCATIONS

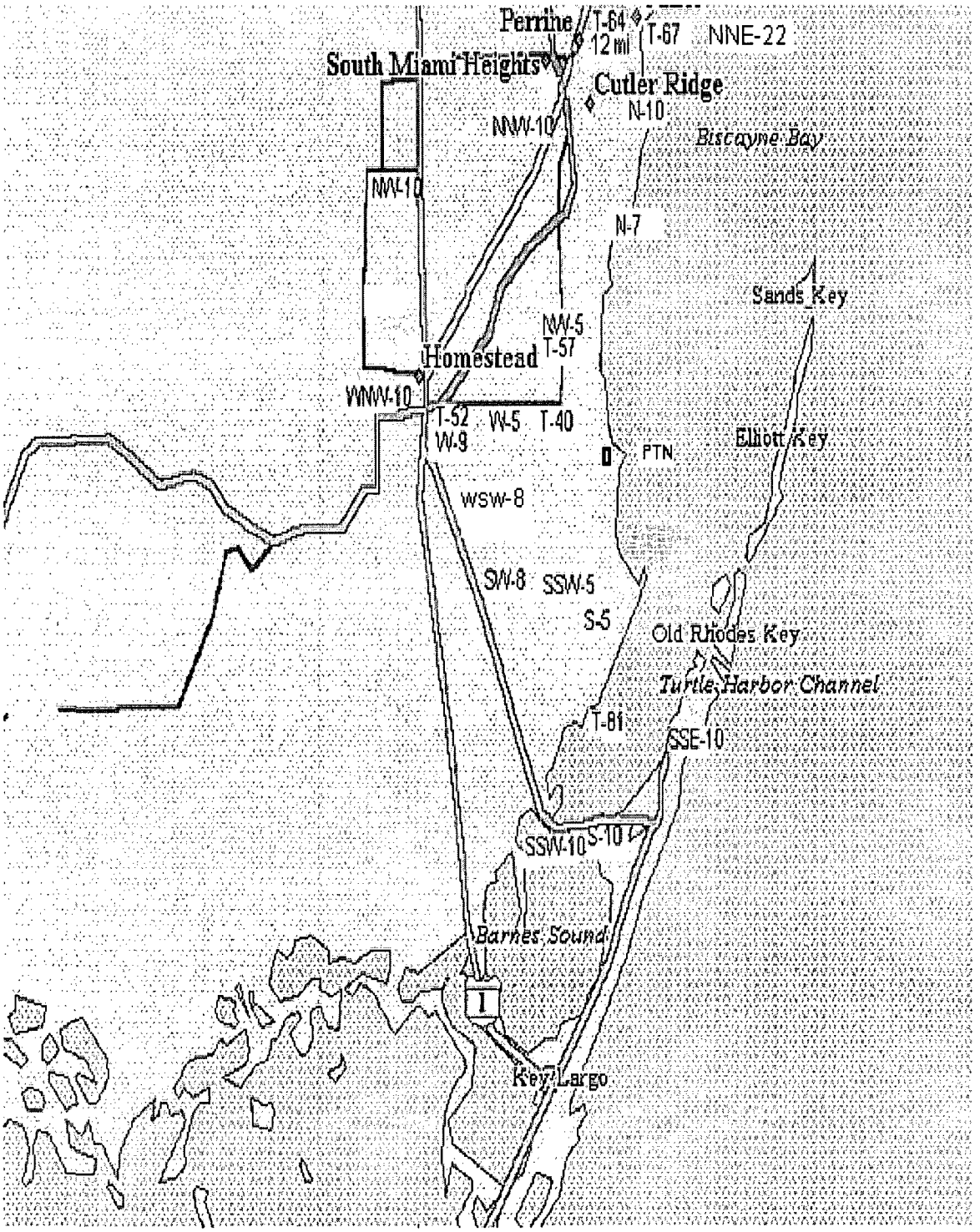
2008
ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT
TURKEY POINT PLANT – UNITS 3 & 4

NEAR SITE SAMPLING LOCATIONS



2008
ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT
TURKEY POINT PLANT – UNITS 3 & 4

DISTANT REMP SAMPLING LOCATIONS



ATTACHMENT A

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

Location [a] Name	Description
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
Control	
NNE-22	Natoma Substation , 2475 SW 16 Ct.

[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-57	NW	4	SW 107th Avenue at Mowry Canal
T-58	NW	1	Turkey Point Entrance Road
T-52	W	9	Supplemental location used to compensate, per ODCM, for temporary loss of T-57.
T-72	WSW	<1	Just before entrance to Land Utilization's access gate.
Control:			
T-64	NNE	22	Natoma Substation , 2475 SW 16 Ct.

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 Plant, 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 Plant, North to Matheson Hammock Park

2008
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

2008

First Quarter, 2008

Second Quarter, 2008

Third Quarter, 2008

Fourth Quarter, 2008

TURKEY POINT SITE

Offsite Dose Calculation Manual Sampling

First Quarter, 2008

Sample Type	Collection Frequency	Locations Sampled	Number of Samples
1. Direct Radiation	Quarterly	22	22
2. Airborne			
2.a. Air Iodines	Weekly	5	70
2.b. Air Particulates	Weekly	5	70
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	1
4.b. Broadleaf Vegetation	Monthly	3	9
			Total: 184

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

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

1. DIRECT RADIATION - TLDs - (μR/hour)

Sample Site	Deployment 06-Dec-07 Collection 27-Mar-08
N-2	5.8 ± 0.4
N-7	4.8 ± 0.4
N-10	5.9 ± 0.5
NNW-2	5.1 ± 0.4
NNW-10	6.0 ± 0.3
NW-1	6.6 ± 0.5
NW-5	5.0 ± 0.4
NW-10	8.3 ± 0.5
WNW-10	7.6 ± 0.7
W-1	7.1 ± 0.6
W-5	5.8 ± 0.4
W-9	5.4 ± 0.5

Sample Site	Deployment 06-Dec-07 Collection 27-Mar-08
WSW-8	6.9 ± 0.6
SW-1	5.8 ± 0.5
SW-8	6.4 ± 0.5
SSW-5	5.6 ± 0.3
SSW-10	5.6 ± 0.5
S-5	5.2 ± 0.6
S-10	6.6 ± 0.5
SSE-1	5.2 ± 0.5
SSE-10	6.5 ± 0.6
NNE-22	7.0 ± 0.8

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

Collection Date	T51	T57	T58	T64	T72
02-Jan-08	<0.01	<0.01	<0.01	<0.01	<0.01
09-Jan-08	<0.02	<0.02	<0.02	<0.02	<0.02
15-Jan-08	<0.01	<0.02	<0.02	<0.01	<0.02
23-Jan-08	<0.01	<0.01	<0.01	<0.01	<0.01
29-Jan-08	<0.02	<0.02	<0.02	<0.02	<0.02
04-Feb-08	<0.02	<0.02	<0.02	<0.02	<0.02
11-Feb-08	<0.02	<0.02	<0.02	<0.02	<0.02
21-Feb-08	<0.01	<0.01	<0.01	<0.01	<0.01
27-Feb-08	<0.02	<0.02	<0.03	<0.03	<0.03
03-Mar-08	<0.02	<0.03	<0.02	<0.02	<0.02
11-Mar-08	<0.01	<0.01	<0.02	<0.01	<0.02
19-Mar-08	<0.02	<0.02	<0.02	<0.02	<0.02
24-Mar-08	<0.02	<0.02	<0.02	<0.02	<0.02
31-Mar-08	<0.02	<0.02	<0.02	<0.02	<0.02

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

Collection Date	T51	T57	T58	T64	T72
02-Jan-08	0.010 ± 0.002	0.011 ± 0.002	0.007 ± 0.002	0.012 ± 0.002	0.009 ± 0.002
09-Jan-08	0.005 ± 0.002	0.011 ± 0.002	0.009 ± 0.002	0.009 ± 0.002	0.009 ± 0.002
15-Jan-08	0.006 ± 0.002	0.007 ± 0.002	0.012 ± 0.002	0.013 ± 0.002	0.011 ± 0.002
23-Jan-08	0.010 ± 0.002	0.008 ± 0.002	0.010 ± 0.002	0.008 ± 0.002	0.009 ± 0.002
29-Jan-08	0.022 ± 0.003	0.017 ± 0.002	0.015 ± 0.002	0.016 ± 0.003	0.018 ± 0.003
04-Feb-08	0.017 ± 0.002	0.010 ± 0.002	0.015 ± 0.002	0.018 ± 0.002	0.019 ± 0.002
11-Feb-08	0.013 ± 0.002	0.012 ± 0.002	0.009 ± 0.002	0.011 ± 0.002	0.011 ± 0.002
21-Feb-08	0.011 ± 0.001	0.013 ± 0.002	0.010 ± 0.001	0.012 ± 0.002	0.010 ± 0.001
27-Feb-08	0.010 ± 0.002	0.006 ± 0.002	0.008 ± 0.002	0.008 ± 0.002	0.012 ± 0.002
03-Mar-08	0.014 ± 0.002	0.008 ± 0.002	0.008 ± 0.002	0.008 ± 0.002	0.010 ± 0.002
11-Mar-08	0.010 ± 0.002	0.016 ± 0.002	0.013 ± 0.002	0.010 ± 0.002	0.015 ± 0.002
19-Mar-08	0.016 ± 0.002	0.015 ± 0.002	0.014 ± 0.002	0.017 ± 0.002	0.016 ± 0.002
24-Mar-08	0.009 ± 0.002	0.009 ± 0.002	0.012 ± 0.002	0.012 ± 0.002	0.019 ± 0.003
31-Mar-08	0.011 ± 0.002	0.009 ± 0.002	0.009 ± 0.002	0.009 ± 0.002	0.010 ± 0.002
Average:	0.012 ± 0.001	0.011 ± 0.001	0.011 ± 0.001	0.012 ± 0.001	0.013 ± 0.001

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

Sample Site	Be-7	K-40	Cs-134	Cs-137	Pb-210
T51	0.1885 ± 0.0155	<0.0229	<0.0013	<0.0013	<0.0545
T57	0.1840 ± 0.0152	<0.0206	<0.0008	<0.0010	0.0203 ± 0.0032
T58	0.2006 ± 0.0153	<0.0296	<0.0016	<0.0012	<0.0594
T64	0.1906 ± 0.0158	<0.0283	<0.0015	<0.0011	<0.0489
T72	0.1811 ± 0.0146	<0.0214	<0.0019	<0.0014	<0.0499

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	30-Jan-08	<140	328 ± 40	<5	<4	<8	<5	<9	<7	<7	<5	<4	<8
	27-Feb-08	99 ± 26	324 ± 34	<3	<3	<6	<3	<6	<4	<3	<3	<3	<4
	27-Mar-08	<143	258 ± 50	<5	<5	<10	<5	<9	<9	<6	<6	<5	<8
T67	30-Jan-08	<140	308 ± 46	<5	<5	<9	<6	<11	<9	<7	<7	<5	<9
	27-Feb-08	<144	328 ± 43	<4	<5	<11	<6	<12	<9	<7	<5	<5	<8
	26-Mar-08	<143	178 ± 50	<4	<5	<10	<5	<13	<9	<7	<6	<6	<7
T81	29-Jan-08	<140	364 ± 57	<7	<5	<14	<7	<11	<11	<10	<7	<6	<7
	27-Feb-08	<144	406 ± 49	<5	<5	<12	<7	<10	<10	<9	<7	<6	<7
	27-Mar-08	<143	393 ± 33	<4	<3	<7	<5	<8	<5	<5	<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. SHORELINE SEDIMENT (pCi/kg, dry weight)

Sample Site	Collection Date	Be-7	K-40	Co-58	Co-60	Cs-134	Cs-137	Pb-210	Ra-226	Th-232	U-235	U-238
T42	30-Jan-08	<174	405 ± 103	<11	<14	<14	<15	<1130	685 ± 153	79 ± 22	61 ± 10	1978 ± 463
T67	30-Jan-08	<204	244 ± 57	<16	<10	<10	<9	<623	180 ± 78	85 ± 12	<60	<501
T81	29-Jan-08	<162	322 ± 92	<16	<16	<13	<13	<1266	767 ± 169	<61	<121	1329 ± 410

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	This sample to be collected.										
T81	This sample to be collected.										

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	This sample to be collected.										
T81	31-Jan-08	2989 ± 195	<20	<17	<44	<23	<43	<26	<21	<323	<65

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

Sample Site	Collection Date	Be-7	K-40	I-131	Cs-134	Cs-137	Pb-210	Ra-226	Others:
T40	29-Jan-08	2163 ± 61	3844 ± 120	<14	<9	58 ± 5	<1241	<174	Pb212: 28 ± 6
	27-Feb-08	1944 ± 94	2747 ± 137	<18	<14	<16	<737	<277	
	26-Mar-08	3922 ± 157	4201 ± 225	<22	<20	65 ± 13	<2626	<372	
T41	29-Jan-08	2381 ± 47	5613 ± 86	<10	<6	47 ± 4	711 ± 175	<119	
	27-Feb-08	2074 ± 102	5644 ± 231	<20	<16	48 ± 8	<2206	<326	
	26-Mar-08	2272 ± 117	4173 ± 226	<20	<16	28 ± 6	<2203	<324	
T67	30-Jan-08	838 ± 79	3291 ± 195	<23	<16	<15	<2128	<314	
	27-Feb-08	2366 ± 122	3626 ± 225	<22	<18	74 ± 10	<2532	<375	
	26-Mar-08	3370 ± 114	4878 ± 170	<17	<13	<14	<794	<285	

TURKEY POINT SITE

Offsite Dose Calculation Manual Sampling

Second Quarter, 2008

Sample Type	Collection Frequency	Locations Sampled	Number of Samples
1. Direct Radiation	Quarterly	22	22
2. Airborne			
2.a. Air Iodines	Weekly	5	60
2.b. Air Particulates	Weekly	5	60
3. Waterborne			
3.a. Surface Water	Monthly	3	9
3.b. Shoreline Sediment	Semiannually	3	0
4. Ingestion			
4.a. Fish and Invertebrates			
4.a.1. Crustacea	Semiannually	2	2
4.a.2. Fish	Semiannually	2	1
4.b. Broadleaf Vegetation	Monthly	3	9
			Total: 163

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 and with greater than a 50% error term are reported as less than a Lower Limit of Detection (<LLD), which is an estimated upper limit (with at least 95% confidence) for the true activity in the sample.

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

1. DIRECT RADIATION - TLDs - (μR/hour)

Sample Site	Deployment 27-Mar-08 Collection 10-June-08
N-2	6.1 ± 0.6
N-7	5.0 ± 0.5
N-10	6.0 ± 0.6
NNW-2	4.8 ± 0.6
NNW-10	6.1 ± 0.6
NW-1	6.8 ± 0.8
NW-5	4.9 ± 0.5
NW-10	8.4 ± 0.7
WNW-10	6.8 ± 0.7
W-1	6.6 ± 0.7
W-5	5.3 ± 0.6
W-9	5.4 ± 0.6

Sample Site	Deployment 27-Mar-08 Collection 10-June-08
WSW-8	5.6 ± 0.5
SW-1	5.1 ± 0.7
SW-8	6.3 ± 0.7
SSW-5	5.0 ± 0.6
SSW-10	5.4 ± 0.6
S-5	5.1 ± 0.6
S-10	5.9 ± 0.6
SSE-1	5.1 ± 0.3
SSE-10	6.1 ± 0.5
NNE-22	6.5 ± 0.8

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

Collection Date	T51	T57	T58	T64	T72
07-Apr-08	<0.02	<0.02	<0.02	<0.02	<0.02
15-Apr-08	<0.01	<0.01	<0.01	<0.01	<0.01
24-Apr-08	<0.01	<0.01	<0.01	<0.01	<0.01
28-Apr-08	<0.02	<0.02	<0.01	<0.01	<0.01
05-May-08	<0.02	<0.02	<0.02	<0.02	<0.02
12-May-08	<0.01	<0.01	<0.01	<0.01	<0.01
19-May-08	<0.01	<0.02	<0.01	<0.01	<0.01
27-May-08	<0.01	<0.02	<0.02	<0.01	<0.01
03-Jun-08	<0.02	<0.02	<0.02	<0.02	<0.02
09-Jun-08	<0.02	<0.01	<0.02	<0.02	<0.01
16-Jun-08	<0.02	<0.02	<0.02	<0.02	<0.02
23-Jun-08	<0.02	<0.02	<0.02	<0.02	<0.02

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

Collection Date	T51	T57	T58	T64	T72
07-Apr-08	0.006 ± 0.002	0.004 ± 0.002	0.008 ± 0.002	0.008 ± 0.002	0.012 ± 0.002
15-Apr-08	0.013 ± 0.002	0.009 ± 0.002	0.012 ± 0.002	0.007 ± 0.002	0.014 ± 0.002
24-Apr-08	0.019 ± 0.002	0.020 ± 0.002	0.013 ± 0.002	0.013 ± 0.002	0.021 ± 0.003
28-Apr-08	0.020 ± 0.003	0.017 ± 0.003	0.018 ± 0.002	0.013 ± 0.002	0.023 ± 0.002
05-May-08	0.020 ± 0.002	0.019 ± 0.002	0.021 ± 0.002	0.024 ± 0.002	0.026 ± 0.002
12-May-08	0.021 ± 0.002	0.022 ± 0.002	0.022 ± 0.002	0.022 ± 0.002	0.024 ± 0.002
19-May-08	0.021 ± 0.002	0.019 ± 0.002	0.021 ± 0.002	0.020 ± 0.002	0.021 ± 0.002
27-May-08	0.009 ± 0.002	0.013 ± 0.002	0.014 ± 0.002	0.013 ± 0.002	0.011 ± 0.002
03-Jun-08	0.013 ± 0.002	0.007 ± 0.002	0.008 ± 0.002	0.013 ± 0.002	0.013 ± 0.002
09-Jun-08	0.009 ± 0.002	0.010 ± 0.002	0.010 ± 0.002	0.008 ± 0.002	0.009 ± 0.002
16-Jun-08	0.016 ± 0.002	0.021 ± 0.002	0.016 ± 0.002	0.017 ± 0.002	0.017 ± 0.002
23-Jun-08	0.011 ± 0.002	0.015 ± 0.002	0.014 ± 0.002	0.013 ± 0.002	0.013 ± 0.002
Average:	0.015 ± 0.001	0.015 ± 0.001	0.015 ± 0.001	0.014 ± 0.001	0.017 ± 0.001

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

Sample Site	Be-7	K-40	Cs-134	Cs-137	Pb-210
T51	0.1844 ± 0.0144	<0.0213	<0.0015	<0.0011	<0.0496
T57	0.2227 ± 0.0131	<0.0170	<0.0011	<0.0010	<0.0126
T58	0.1805 ± 0.0139	<0.0197	<0.0012	<0.0009	0.0288 ± 0.0048
T64	0.2071 ± 0.0124	<0.0230	<0.0013	<0.0009	0.0304 ± 0.0041
T72	0.1847 ± 0.0130	<0.0188	<0.0010	<0.0010	0.0263 ± 0.0045

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	15-Apr-08	<134	337 ± 61	<7	<7	<18	<7	<13	<10	<10	<6	<6	<10
	22-May-08	<142	443 ± 54	<5	<6	<11	<5	<12	<9	<8	<8	<5	<9
	10-Jun-08	<141	403 ± 53	<3	<4	<8	<5	<12	<10	<5	<5	<5	<11
T67	16-Apr-08	<139	321 ± 63	<3	<5	<11	<7	<13	<11	<9	<6	<6	<8
	22-May-08	<142	294 ± 34	<2	<2	<5	<3	<5	<4	<4	<3	<3	<4
	10-Jun-08	<141	201 ± 22	<4	<4	<7	<4	<8	<6	<4	<4	<4	<6
T81	15-Apr-08	<141	349 ± 29	<2	<2	<4	<2	<4	<3	<3	<2	<2	<4
	22-May-08	<141	386 ± 35	<2	<2	<5	<3	<4	<4	<4	<3	<2	<3
	10-Jun-08	<141	440 ± 38	<3	<3	<7	<4	<6	<6	<5	<5	<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. SHORELINE SEDIMENT - (pCi/kg, dry weight)

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

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	25-Jun-08	1474 ± 224	<25	<33	<54	<37	<76	<38	<34	1540 ± 314	<154
T81	18-Apr-08	2040 ± 202	<27	<30	<67	<29	<71	<30	<25	<564	<109

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	16-Apr-08	2762 ± 224	<18	<15	<45	<15	<37	<24	<19	<332	<59
T81	This sample was previously collected.										

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

Sample Site	Collection Date	Be-7	K-40	I-131	Cs-134	Cs-137	Pb-210	Pb-212	Ra-226	Ra-228
T40	15-Apr-08	2186 ± 86	3314 ± 163	<16	<11	38 ± 6	<1691	<57	<237	<43
	22-May-08	973 ± 80	3382 ± 199	<22	<16	29 ± 8	<1866	<65	<304	<49
	09-Jun-08	1663 ± 75	3652 ± 140	<12	<10	61 ± 8	<731	<74	<230	<35
T41	15-Apr-08	1896 ± 100	6248 ± 231	<21	<18	46 ± 8	<1829	<67	<264	<48
	22-May-08	862 ± 65	6675 ± 187	<19	<11	36 ± 6	<616	<72	<214	<35
	09-Jun-08	1658 ± 93	6211 ± 244	<15	<17	62 ± 8	<2092	<58	<299	<56
T67	16-Apr-08	2375 ± 84	2541 ± 110	<15	<10	46 ± 6	<712	<81	<221	<30
	22-May-08	1217 ± 83	3733 ± 205	<20	<17	<20	<1961	<66	<296	<64
	10-Jun-08	493 ± 69	6817 ± 283	<15	<19	<14	<2190	<67	<312	<62

TURKEY POINT SITE

Offsite Dose Calculation Manual Sampling

Third Quarter, 2008

Sample Type	Collection Frequency	Locations Sampled	Number of Samples
1. Direct Radiation	Quarterly	22	21
2. Airborne			
2.a. Air Iodines	Weekly	5	70
2.b. Air Particulates	Weekly	5	70
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. Broadleaf Vegetation	Monthly	3	9
			Total: 183

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

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

1. DIRECT RADIATION - TLDs - (μR/hour)

Sample Site	Deployment 10-Jun-08 Collection 17-Sep-08	Sample Site	Deployment 10-Jun-08 Collection 17-Sep-08
N-2	6.2 ± 0.5	WSW-8	5.6 ± 0.4
N-7	5.1 ± 0.3		
N-10	5.6 ± 0.5	SW-1	5.4 ± 0.5
		SW-8	5.9 ± 0.5
NNW-2	5.2 ± 0.4		
NNW-10	(A)	SSW-5	5.0 ± 0.3
		SSW-10	5.1 ± 0.4
NW-1	6.7 ± 0.6		
NW-5	5.0 ± 0.3	S-5	4.7 ± 0.5
NW-10	8.7 ± 0.5(B)	S-10	5.7 ± 0.6
WNW-10	6.8 ± 0.5	SSE-1	4.9 ± 0.4
		SSE-10	5.9 ± 0.5
W-1	6.5 ± 0.5		
W-5	5.6 ± 0.3	NNE-22	6.4 ± 0.5
W-9	5.4 ± 0.3		

(A) TLD missing upon collection.
(B) A new max value recorded. An increasing trend has been noted over the last four quarters for this site. An increase of 1.8 μR/hour over the last two years has been recorded.

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

Collection Date	T51	T57	T58	T64	T72
01-Jul-08	<0.01	<0.01	<0.01	<0.01	<0.01
07-Jul-08	<0.03	<0.03	<0.03	<0.03	<0.03
14-Jul-08	<0.02	<0.02	<0.02	<0.02	<0.02
22-Jul-08	<0.02	<0.02	<0.02	<0.02	<0.02
28-Jul-08	<0.02	<0.02	<0.02	<0.02	<0.02
05-Aug-08	<0.02	<0.02	<0.02	<0.03	<0.02
11-Aug-08	<0.02	<0.02	<0.02	<0.02	<0.02
20-Aug-08	<0.02	<0.02	<0.02	<0.02	<0.02
26-Aug-08	<0.03	<0.03	<0.02	<0.03	<0.03
02-Sep-08	<0.02	<0.02	<0.02	<0.02	<0.02
08-Sep-08	<0.03	<0.03	<0.03	<0.03	<0.03
15-Sep-08	<0.03	<0.03	<0.03	<0.03	<0.03
22-Sep-08	<0.02	<0.02	<0.02	<0.02	<0.02
29-Sep-08	<0.03	<0.03	<0.03	<0.02	<0.03

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

Collection Date	T51	T57	T58	T64	T72
01-Jul-08	0.019 ± 0.002	0.020 ± 0.002	0.017 ± 0.002	0.020 ± 0.002	0.021 ± 0.002
07-Jul-08	0.014 ± 0.002	0.011 ± 0.002	0.011 ± 0.002	0.011 ± 0.002	0.009 ± 0.002
14-Jul-08	0.019 ± 0.002	0.016 ± 0.002	0.017 ± 0.002	0.016 ± 0.002	0.019 ± 0.002
22-Jul-08	0.015 ± 0.002	0.017 ± 0.002	0.016 ± 0.002	0.015 ± 0.002	0.014 ± 0.002
28-Jul-08	0.010 ± 0.002	0.008 ± 0.002	0.009 ± 0.002	0.007 ± 0.002	0.011 ± 0.002
05-Aug-08	0.013 ± 0.002	0.012 ± 0.002	0.017 ± 0.002	0.016 ± 0.002	0.016 ± 0.002
11-Aug-08	0.012 ± 0.002	0.016 ± 0.002	0.015 ± 0.002	0.018 ± 0.002	0.012 ± 0.002
20-Aug-08	0.011 ± 0.002	0.013 ± 0.002	0.012 ± 0.002	0.014 ± 0.002	0.012 ± 0.002
26-Aug-08	0.012 ± 0.002	0.015 ± 0.002	0.013 ± 0.002	0.013 ± 0.002	0.012 ± 0.002
02-Sep-08	0.016 ± 0.002	0.012 ± 0.002	0.015 ± 0.002	0.014 ± 0.002	0.013 ± 0.002
08-Sep-08	0.018 ± 0.002	0.025 ± 0.003	0.017 ± 0.002	0.022 ± 0.003	0.020 ± 0.003
15-Sep-08	0.014 ± 0.002	0.010 ± 0.002	0.010 ± 0.002	0.010 ± 0.002	0.014 ± 0.002
22-Sep-08	0.007 ± 0.002	0.005 ± 0.001	0.008 ± 0.002	0.006 ± 0.002	0.004 ± 0.001
29-Sep-08	0.009 ± 0.002	0.009 ± 0.002	0.010 ± 0.002	0.008 ± 0.001	0.008 ± 0.002
Average:	0.013 ± 0.001	0.013 ± 0.001	0.013 ± 0.001	0.014 ± 0.001	0.013 ± 0.001

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

Sample Site	Be-7	K-40	Cs-134	Cs-137	Pb-210
T51	0.1305 ± 0.0139	<0.0196	<0.0019	<0.0012	<0.0448
T57	0.1243 ± 0.0134	<0.0211	<0.0015	<0.0009	<0.0531
T58	0.1256 ± 0.0045	0.0152 ± 0.0023	<0.0005	<0.0004	<0.0154
T64	0.1448 ± 0.0106	<0.0173	<0.0014	<0.0009	0.0177 ± 0.0037
T72	0.1453 ± 0.0129	<0.0219	<0.0014	<0.0012	<0.0466

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	14-Jul-08	<140	275 ± 51	<5	<5	<10	<7	<12	<11	<6	<4	<6	<11
	05-Aug-08	<146	499 ± 39	<3	<3	<6	<4	<8	<7	<5	<4	<4	<6
	15-Sep-08	<136	325 ± 32	<3	<3	<7	<4	<8	<6	<4	<4	<4	<5
T67	15-Jul-08	<140	<103	<6	<3	<12	<6	<11	<8	<5	<5	<5	<13
	04-Aug-08	<146	250 ± 46	<5	<5	<11	<5	<12	<10	<7	<7	<6	<8
	15-Sep-08	<136	200 ± 47	<7	<6	<13	<7	<12	<12	<7	<6	<6	<10
T81	14-Jul-08	162 ± 46	416 ± 33	<3	<3	<7	<4	<7	<6	<4	<4	<4	<5
	05-Aug-08	<146	369 ± 48	<5	<5	<11	<5	<11	<9	<6	<7	<5	<12
	15-Sep-08	<136	352 ± 33	<3	<4	<6	<4	<7	<7	<5	<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. SHORELINE SEDIMENT - (pCi/kg, dry weight)

Sample Site	Collection Date	Be-7	K-40	Co-58	Co-60	Cs-134	Cs-137	Pb-210	Ra-226	Th-232	U-238
T42	08-Jul-08	<126	286 ± 70	<13	<13	<13	<13	<1095	584 ± 137	<66	1292 ± 417
T67	08-Jul-08	<158	571 ± 121	<15	<16	<18	<16	<1433	1054 ± 170	194 ± 30	<1095
T81	08-Jul-08	<133	241 ± 97	<13	<14	<15	<14	<1173	752 ± 153	<64	1691 ± 465

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	This sample not yet collected.										
T81	04-Sep-08	1687 ± 228	<28	<37	<85	<23	<76	<35	<32	466 ± 203	<120

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	This sample not yet collected.										
T81	This sample not yet collected.										

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

Sample Site	Collection Date	Be-7	K-40	I-131	Cs-134	Cs-137	Pb-210	Pb-212	Ra-226	Ra-228
T40	02-Jul-08	1624 ± 74	3372 ± 155	<18	<11	40 ± 6	<1522	<50	<226	<43
	06-Aug-08	1329 ± 80	3319 ± 160	<13	<12	78 ± 7	<1686	<51	<255	<46
	16-Sep-08	1043 ± 70	3063 ± 159	<10	<12	32 ± 8	<1686	<49	<242	<45
T41	07-Jul-08	1981 ± 88	5196 ± 195	<13	<14	55 ± 8	<1673	<56	<233	<45
	06-Aug-08	1406 ± 74	5218 ± 164	<15	<12	49 ± 5	<664	<78	<215	<34
	16-Sep-08	1625 ± 92	5574 ± 242	<15	<15	54 ± 9	<2162	<63	<296	<55
T67	02-Jul-08	991 ± 67	6278 ± 167	<17	<13	<9	<524	<73	<207	<32
	04-Aug-08	959 ± 64	5562 ± 192	<17	<13	<10	<1491	<53	<233	<41
	15-Sep-08	1195 ± 67	6049 ± 171	<11	<12	<8	<738	<70	<216	<34

TURKEY POINT SITE

Offsite Dose Calculation Manual Sampling

Fourth Quarter, 2008

Sample Type	Collection Frequency	Locations Sampled	Number of Samples
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	0
4. Ingestion			
4.a. Fish and Invertebrates			
4.a.1. Crustacea	Semiannually	2	1
4.a.2. Fish	Semiannually	2	2
4.b. Broadleaf Vegetation	Monthly	3	9
			Total: 173

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

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

1. DIRECT RADIATION - TLDs - (μR/hour)

Sample Site	Deployment 17-Sep-08 Collection 16-Dec-08
N-2	6.1 ± 0.7
N-7	5.1 ± 0.4
N-10	5.7 ± 0.5
NNW-2	4.7 ± 0.4
NNW-10	6.1 ± 0.6
NW-1	7.0 ± 0.8
NW-5	5.1 ± 0.6
NW-10	8.3 ± 0.6
WNW-10	6.8 ± 0.7
W-1	7.2 ± 0.8
W-5	5.9 ± 0.7
W-9	5.6 ± 0.6

Sample Site	Deployment 17-Sep-08 Collection 16-Dec-08
WSW-8	6.0 ± 0.6
SW-1	5.4 ± 0.6
SW-8	6.0 ± 0.6
SSW-5	5.2 ± 0.5
SSW-10	5.4 ± 0.6
S-5	5.2 ± 0.6
S-10	6.2 ± 0.6
SSE-1	5.0 ± 0.3
SSE-10	5.7 ± 0.4
NNE-22	6.3 ± 0.5

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

Collection Date	T51	T57	T58	T64	T72
06-Oct-08	<0.03	<0.03	<0.03	<0.03	<0.03
14-Oct-08	<0.02	<0.02	<0.02	<0.02	<0.02
20-Oct-08	<0.02	<0.02	<0.02	<0.02	<0.02
27-Oct-08	<0.02	<0.02	<0.02	<0.02	<0.02
03-Nov-08	<0.02	<0.02	<0.02	<0.02	<0.02
10-Nov-08	<0.02	<0.02	<0.02	<0.02	<0.02
17-Nov-08	<0.02	<0.02	<0.02	<0.02	<0.02
24-Nov-08	<0.03	<0.03	<0.03	<0.03	<0.03
01-Dec-08	<0.03	<0.03	<0.03	<0.03	<0.03
09-Dec-08	<0.02	<0.02	<0.02	<0.03	<0.02
15-Dec-08	<0.03	<0.02	<0.02	<0.02	<0.02
22-Dec-08	<0.02	<0.02	<0.02	<0.02	<0.02
29-Dec-08	<0.02	<0.02	<0.02	<0.02	<0.02

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

Collection Date	T51	T57	T58	T64	T72
06-Oct-08	0.013 ± 0.002	0.017 ± 0.002	0.014 ± 0.002	0.017 ± 0.002	0.015 ± 0.002
14-Oct-08	0.009 ± 0.001	0.009 ± 0.001	0.009 ± 0.001	0.009 ± 0.001	0.006 ± 0.001
20-Oct-08	0.021 ± 0.003	0.015 ± 0.002	0.014 ± 0.002	0.019 ± 0.002	0.015 ± 0.002
27-Oct-08	0.013 ± 0.002	0.015 ± 0.002	0.012 ± 0.002	0.009 ± 0.002	0.009 ± 0.002
03-Nov-08	0.016 ± 0.002	0.013 ± 0.002	0.020 ± 0.002	0.018 ± 0.002	0.016 ± 0.002
10-Nov-08	0.016 ± 0.002	0.016 ± 0.002	0.012 ± 0.002	0.015 ± 0.002	0.012 ± 0.002
17-Nov-08	0.007 ± 0.002	0.012 ± 0.002	0.008 ± 0.002	0.008 ± 0.002	0.011 ± 0.002
24-Nov-08	0.029 ± 0.003	0.020 ± 0.002	0.024 ± 0.003	0.026 ± 0.003	0.022 ± 0.002
01-Dec-08	0.019 ± 0.002	0.016 ± 0.002	0.017 ± 0.002	0.011 ± 0.002	0.018 ± 0.002
09-Dec-08	0.019 ± 0.002	0.018 ± 0.002	0.014 ± 0.002	0.022 ± 0.002	0.019 ± 0.002
15-Dec-08	0.015 ± 0.002	0.016 ± 0.002	0.011 ± 0.002	0.012 ± 0.002	0.011 ± 0.002
22-Dec-08	0.012 ± 0.002	0.008 ± 0.002	0.013 ± 0.002	0.014 ± 0.002	0.011 ± 0.002
29-Dec-08	0.016 ± 0.002	0.012 ± 0.002	0.012 ± 0.002	0.012 ± 0.002	0.012 ± 0.002
Average:	0.016 ± 0.001	0.014 ± 0.001	0.014 ± 0.001	0.015 ± 0.001	0.014 ± 0.001

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

Sample Site	Be-7	K-40	Cs-134	Cs-137	Pb-210
T51	0.1724 ± 0.0104	<0.0173	<0.0018	<0.0014	0.0084 ± 0.0017
T57	0.2031 ± 0.0135	<0.0185	<0.0012	<0.0006	0.0188 ± 0.0039
T58	0.1893 ± 0.0138	<0.0231	<0.0011	<0.0008	0.0150 ± 0.0034
T64	0.1722 ± 0.0103	<0.0200	<0.0020	<0.0015	0.0118 ± 0.0020
T72	0.1719 ± 0.0243	<0.0156	<0.0019	<0.0015	0.0129 ± 0.0019

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	14-Oct-08	<139	<128	<6	<5	<9	<6	<12	<10	<5	<5	<6	<11
	10-Nov-08	<147	170 ± 52	<5	<6	<13	<5	<10	<11	<7	<6	<5	<9
	15-Dec-08	<146	157 ± 49	<5	<5	<12	<6	<12	<8	<6	<7	<5	<7
T67	14-Oct-08	<139	<63	<5	<6	<13	<5	<11	<9	<7	<6	<5	<9
	10-Nov-08	<147	303 ± 29	<4	<3	<8	<3	<9	<5	<4	<3	<3	<6
	17-Dec-08	<146	104 ± 47	<4	<4	<10	<5	<10	<8	<5	<5	<5	<10
T81	14-Oct-08	<139	207 ± 51	<5	<5	<11	<5	<12	<10	<7	<6	<5	<9
	10-Nov-08	<147	220 ± 48	<6	<4	<8	<5	<11	<10	<7	<6	<5	<9
	16-Dec-08	<146	377 ± 29	<3	<3	<7	<2	<7	<6	<4	<4	<3	<5

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

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

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

Sample Site	Collection Date	Be-7	K-40	Co-58	Co-60	Cs-134	Cs-137	Pb-210	Ra-226	Th-232	Others:
T42	This sample was previously collected.										
T67	This sample was previously collected.										
T81	This sample was previously collected.										

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	01-Oct-08	1772 ± 184	<20	<25	<47	<28	<53	<31	<27	<465	<100
T81	This sample was previously collected.										

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	04-Nov-08	2648 ± 207	<21	<20	<48	<20	<38	<22	<17	<318	<67
T81	08-Nov-08	2330 ± 172	<18	<20	<41	<24	<40	<22	<22	<369	<85

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

Sample Site	Collection Date	Be-7	K-40	I-131	Cs-134	Cs-137	Pb-210	Pb-212	Ra-226	Ra-228
T40	14-Oct-08	2276 ± 96	2766 ± 192	<12	<14	54 ± 7	<1870	<64	<291	<49
	10-Nov-08	1962 ± 91	2913 ± 176	<14	<14	32 ± 8	<2085	<64	<303	<56
	17-Dec-08	1214 ± 95	3654 ± 204	<13	<21	47 ± 8	<2088	<65	<316	<68
T41	14-Oct-08	2340 ± 110	6099 ± 274	<16	<18	71 ± 12	<2362	<76	<329	<62
	10-Nov-08	2202 ± 107	4658 ± 224	<18	<14	51 ± 9	<2106	<65	<289	<64
	17-Dec-08	1672 ± 102	5601 ± 265	<16	<21	29 ± 8	<2294	<80	<329	<64
T67	14-Oct-08	1376 ± 70	4619 ± 154	<10	<10	<8	<702	<72	<227	<29
	10-Nov-08	1998 ± 84	6467 ± 205	<15	<13	<12	<875	<85	<244	<43
	17-Dec-08	1124 ± 60	5480 ± 165	<10	<11	<9	<736	<82	<217	<37

ATTACHMENT C

RESULTS FROM THE 2008

INTERLABORATORY COMPARISON PROGRAM

CONDUCTED BY

DEPARTMENT OF ENERGY

2008
ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT
TURKEY POINT PLANT – UNITS 3 & 4

DOE-MAPEP 18 RESULTS

Radionuclide	Result	Ref. Value	Flag (Evaluation)	Acceptance Range
Matrix: RdF Air Filter Bq/filter				
MN54	0.004		A	Sensitivity Eval.
CO57	3.58	3.55	A	2.49 – 4.62
CO60	1.28	1.31	A	0.92 – 1.70
ZN65	2.32	2.04	A	1.43 – 2.65
CS134	2.34	2.52	A	1.76 – 3.28
CS137	2.59	2.70	A	1.89 – 3.51
AM241	0.16	0.158	A	0.111 – 0.205
U238	0.20	0.225	A	0.158 – 0.293
Matrix: GrF Air Filter Bq/filter				
Gross Beta	0.33	0.286	A	0.143 – 0.429
Matrix: MaS Soil Bq/kg				
K40	632.57	571	A	400 - 742
MN54	617.70	570	A	399 - 741
CO57	461.2	421	A	295 - 547
CO60	8.41	2.9	N	Sensitivity Eval.
ZN65	- 6.71		A	Blank (no activity)
CS134	881.67	854	A	598 - 1110
CS137	580	545	A	382 - 709
Am241	140.67	127.2	A	89.0 – 165.4
U238	158.37	148	A	104 - 192
Matrix: MaW Water Bq/L				
H3	506.83	472	A	330 - 614
MN54	12.78	12.1	A	8.5 – 15.7
CO57	22.23	22.8	A	16.0 – 29.6
CO60	8.48	8.40	A	5.88 – 10.92
NI63	26.05	30.7	A	21.5 – 39.9
ZN65	17.69	16.3	A	11.4 – 21.2
SR90	12.5	11.40	A	7.98 – 14.82
CS134	-0.01		A	Blank (no activity)
CS137	-0.08		A	Blank (no activity)
Am241	1.2	1.23	A	0.86 – 1.60
Matrix: RdV Vegetation, Bq/sample :				
MN54	4.22	4.74	A	3.32 – 6.16
CO57	6.34	6.89	A	4.82 – 8.96
CO60	2.36	2.77	A	1.94 – 3.60
ZN65	-0.10		A	Blank (no activity)
CS134	5.51	6.28	A	4.40 – 8.16
CS137	2.99	3.41	A	2.39 – 4.43
AM241	0.29	0.240	W	0.198 – 0.312

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

2008
ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT
TURKEY POINT PLANT – UNITS 3 & 4

DOE-MAPEP 19 RESULTS

Radionuclide	Result	Ref. Value	Flag (Evaluation)	Acceptance Range
Matrix: RdF Air Filter Bq/filter				
MN54	2.91	2.64	A	1.85 – 3.43
CO57	1.64	1.50	A	1.05 – 1.95
CO60	0.02	n/a	A	Cross Lab LLD Comp
ZN65	1.08	0.94	A	0.66 – 1.22
CS134	2.72	2.63	A	1.84 – 3.42
CS137	- 0.002	n/a	A	Blank (no activity)
AM241	0.004	n/a	A	Blank (no activity)
U238	0.32	0.272	A	0.190 – 0.354
Matrix: GrF Air Filter Bq/filter				
Gross Beta	0.551	0.525	A	0.263 – 0.788
Matrix: MaS Soil Bq/kg				
K40	639.56	570	A	399 - 741
MN54	440.04	415	A	291 - 540
CO57	348.64	333	A	233 - 433
CO60	152.46	145	A	102 - 189
ZN65	- 7.84	n/a	A	Blank (no activity)
CS134	589.18	581	A	407 - 755
CS137	3.21	2.8	A	Range not specified
Am241	69.49	69.1	A	48.4 – 89.8
U238	296.14	303	A	212 - 394
SB125	26.78	22.8	A	16.0 – 29.6
Matrix: MaW Water Bq/L				
H3	358.97	341	A	239 - 443
MN54	14.18	13.7	A	9.6 – 17.8
CO57	0.01	n/a	A	Blank (no activity)
CO60	11.81	11.6	A	8.1 – 15.1
ZN65	18.37	17.1	A	12.0 – 22.2
SR90	7.2	6.45	A	4.52 – 8.39
CS134	19.37	19.5	A	13.7 – 25.4
CS137	24.06	23.6	A	16.5 – 30.7
Am241	0.06	n/a	A	Blank (no activity)
U238	3.32	3.55	A	2.49 – 4.62
Matrix: RdV Vegetation, Bq/sample :				
MN54	5.45	5.8	A	4.1 – 7.5
CO57	6.98	7.1	A	5.0 – 9.2
CO60	4.35	4.7	A	3.3 – 6.1
ZN65	6.54	6.9	A	4.8 – 9.0
CS134	5.11	5.5	A	3.9 – 7.2
CS137	0.003	n/a	A	Blank (no activity)
AM241	0.31	0.286	A	0.022 – 0.372

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

ATTACHMENT D

Industry Initiative

Ground Water Protection Program

Tritium in Ground Water Monitoring

2008

A. Description of Program:

The Ground Water Protection Program, Industry Initiative, is described in the ODCM Section 5B.

Of the wells listed in 5B, the following are west of the site proper, west of the cooling canal system:

Well	Location
L-3	West of Interceptor Canal, on Land-U property. Sample from top and bottom (1)
L-5	West of Interceptor Canal, on Land-U property. Sample from top and bottom (1)
G-21	Tallahassee Road extension, west of FPL property. Sample from top and bottom (1)
G-28	Tallahassee Road extension, west of FPL property. Sample from top and bottom (1)

(1) These wells have two sampling depths, samples are drawn from both depths.

Of the wells listed in 5B, the following are on the site proper:

Well	Location
STP-1	Northeast of PTN Sewage Plant.
CD-1	Northeast Corner of Neutralization Basin.
PTPED-1	South side of Neutralization Basin.
P-94-2	North of Solids Settling Basin, east of PTN intake.
P-94-4	East of Dress-out Building, in the RCA.

The sampling frequency is quarterly; more often if conditions warrant.

Sample assay is performed by a private contractor. This contractor provides other radiological assay for the effluents & rad-waste program; this affords QA for the Industry Initiative monitoring program.

B. Results

Turkey Point 2008 Tritium Results Summary, pCi/L

Well number	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
L-3 Top	< MDA	< MDA	< MDA	< MDA
L-3 Bottom	4340	4030	3650	4380
L-5 Top	< MDA	< MDA	< MDA	< MDA
L-5 Bottom	3730	3580	3240	3430
G-21 Top	< MDA	< MDA	< MDA	< MDA
G-21 Bottom	< MDA	< MDA	< MDA	< MDA
G-28 Top	< MDA	< MDA	< MDA	< MDA
G-28 Bottom	< MDA	440	< MDA	< MDA
STP-1	< MDA	< MDA	< MDA	< MDA
CD-1	720	580	< MDA	390
PTPED – 1	410	410	< MDA	< MDA
P-94-2	650	1390	640	1230
P-94-4	< MDA	< MDA	< MDA	1060

MDA is 350 to 450 pCi/L

B. Results (continued)

Turkey Point 2008 Well Sampling Results, pCi/L

Well	Nuclide	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
L-3 T	H3	< MDA	< MDA	< MDA	< MDA
	K-40	< MDA	< MDA	< MDA	< MDA
L-3 B	H3	4340	4030	3650	4380
	K-40	560	584	469	546
L-5 T	H3	< MDA	< MDA	< MDA	< MDA
	K-40	< MDA	< MDA	< MDA	< MDA
L-5 B	H3	3730	3580	3240	3430
	K-40	495	497	419	585
G-21 T	H3	< MDA	< MDA	< MDA	< MDA
	K-40	< MDA	< MDA	< MDA	< MDA
G-21 B	H3	< MDA	< MDA	< MDA	< MDA
	K-40	< MDA	< MDA	< MDA	< MDA
G-28 T	H3	< MDA	< MDA	< MDA	< MDA
	K-40	< MDA	< MDA	175	< MDA
G-28B	H3	< MDA	440	< MDA	< MDA
	K-40	124	128	< MDA	145
STP-1	H3	< MDA	< MDA	< MDA	< MDA
	K-40	< MDA	< MDA	175	< MDA
CD-1	H3	720	580	< MDA	390
	K-40	98	109	< MDA	< MDA
PTPED-1	H3	410	410	< MDA	< MDA
	K-40	< MDA	< MDA	< MDA	< MDA
	Cs-137	11.1	13.2	11.7	13.7
P-94-2	H3	650	1390	640	1230
	K-40	168	214	< MDA	271
P-94-4	H3	< MDA	< MDA	< MDA	1060
	K-40	< MDA	< MDA	175	< MDA
	Cs-137	8.8	7.1	< MDA	< MDA

Typical measured MDA ranges: H3 - 350 to 450 pCi/L K40 - 80 to 90 pCi/L Cs-137 - 6 to 7 pCi/L

C. Discussion

The Turkey Point Nuclear site is surrounded on three sides by the closed cooling canal system. This canal system, in addition to being the source of tertiary cooling, is the body of water receiving permitted liquid radiological waste; the canal system tritium level averages about 4,000 pCi/L. This supports the expectation to see tritium in subsurface water collected either on-site or off-site close to the cooling canal system.

"Off-site" Wells

Wells L-3 and L-5 are adjacent to the west border of the cooling canal system; the tritium levels seen in the 'bottom' samples is consistent with the known & understood interface between the canal system and underlying salt to brackish-water aquifer. As expected, tritium is not seen in the 'top' sample.

Wells G-21 and G-28 are west, hydraulically upgrade, from the canal system.

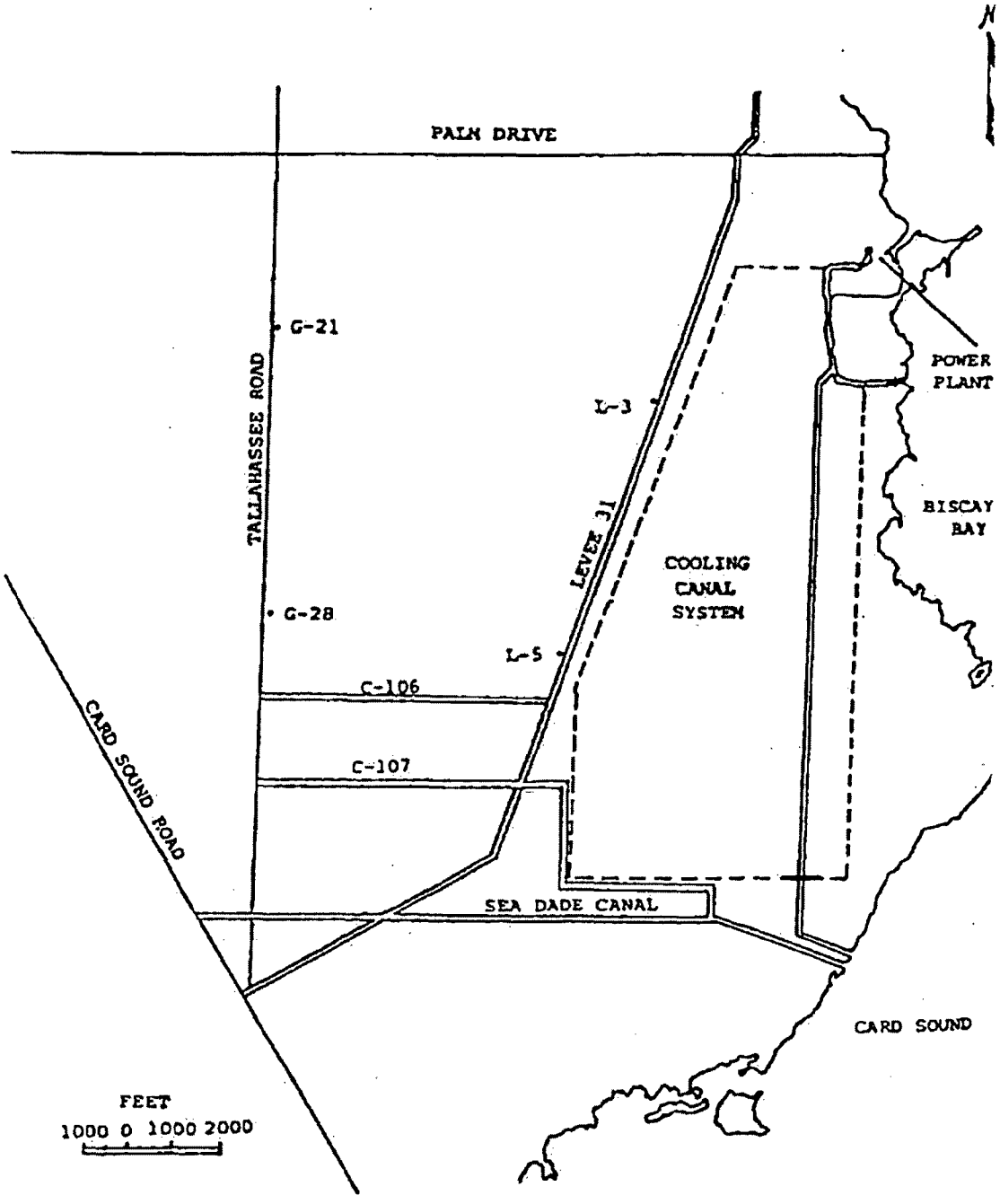
"On-Site" Wells

Those detectable results are less than the cooling canal system average level. This is most likely the result of rainwater diluting the underlying cooling canal influence.

Maps depicting the well locations follow.

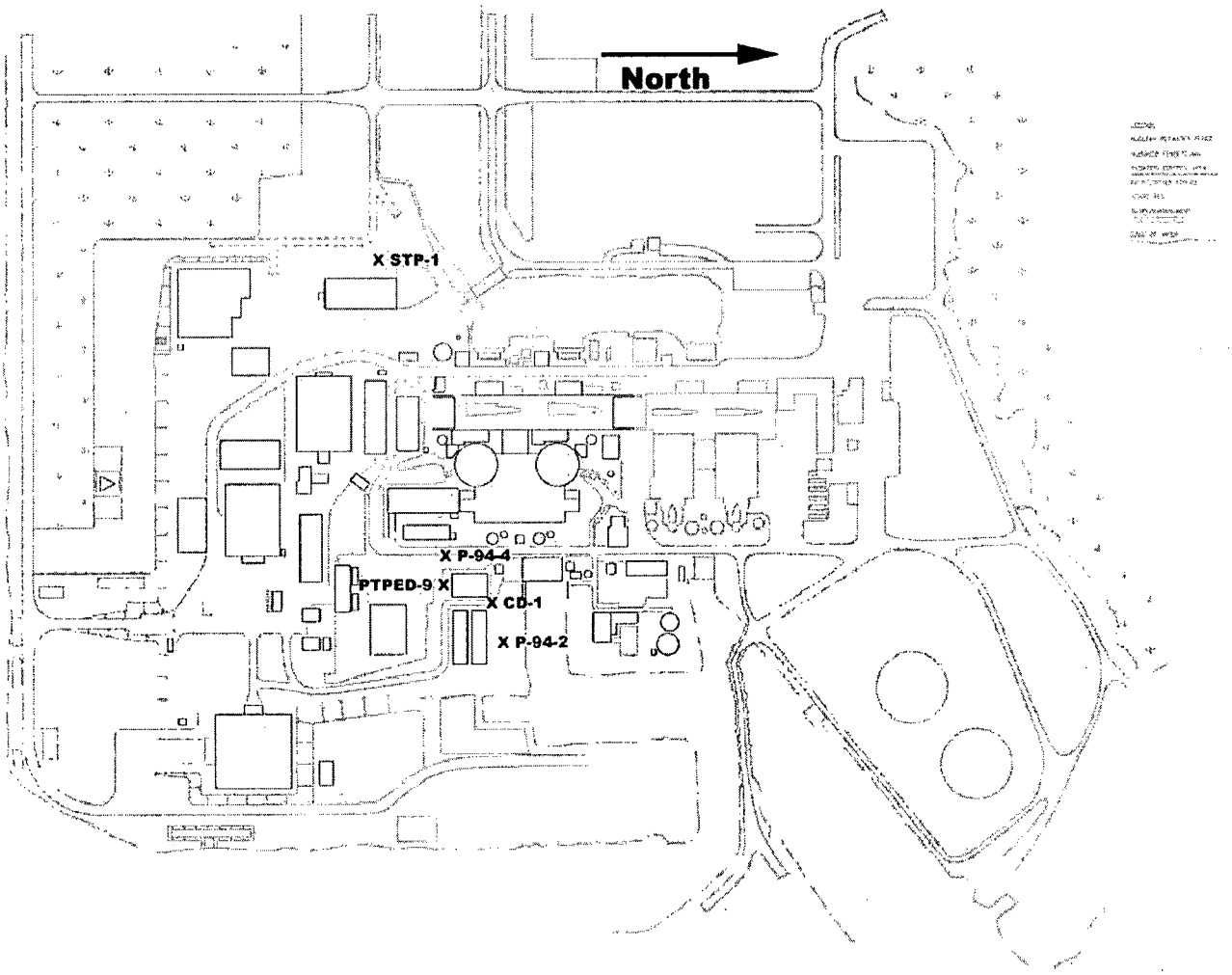
2008
ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT
TURKEY POINT PLANT – UNITS 3 & 4

Offsite H3 Monitoring Wells



2008
ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT
TURKEY POINT PLANT – UNITS 3 & 4

Onsite H3 Monitoring Wells



(note : Well PTPED-1 is inadvertently labeled PTPED-9)