ACCELERATED DOCUMENT DISTRIBUTION SYSTEM

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:9303310247 DOC.DATE: 92/12/31 NOTARIZED: NO DOCKET #
FACIL:50-250 Turkey Point Plant, Unit 3, Florida Power and Light C 05000250
50-251 Turkey Point Plant, Unit 4, Florida Power and Light C 05000251
AUTH.NAME AUTHOR AFFILIATION
PLUNKETT,T.F. Florida Power & Light Co.
RECIP.NAME RECIPIENT AFFILIATION

SUBJECT: "1992 Annual Radiological Environ Operating Rept for Turkey Point Plant,units 3 & 4." W/930326 ltr.

DISTRIBUTION CODE: IE25D COPIES RECEIVED:LTR 1 ENCL 1 SIZE: 70
TITLE: Environmental Monitoring Rept (per Tech Specs)

NOTES: See Environ Rpts

	RECIPIENT ID CODE/NAME	COPIES LTTR	COPIES ENCL	RECIPIENT ID CODE/NAME	COPIES LTTR	COPIES ENCL
	PD2-2 LA	3	3	PD2-2 PD	1	1
	RAGHAVAN,L	1	1			
INTERNAL:	NRR/DRSS/PRPB11	2	2	REG FILE 01	1	1
	RGN2 DRSS/RPB	1	1	RGN2 FILE 02	1	1
EXTERNAL:	EG&G SIMPSON,F	2	2	NRC PDR	1	1

R I D S / A D D S

R I D S / A D D S

GR-1

NOTE TO ALL "RIDS" RECIPIENTS:

PLEASE HELP US TO REDUCE WASTE! CONTACT THE DOCUMENT CONTROL DESK, ROOM P1-37 (EXT. 504-2065) TO ELIMINATE YOUR NAME FROM DISTRIBUTION LISTS FOR DOCUMENTS YOU DON'T NEED!

TOTAL NUMBER OF COPIES REQUIRED: LTTR 13 ENCL 13

FPL

P.O. Box 029100, Miami, FL, 33102-9100

MAR 2 6 1993

L-93-071
10 CFR 50.36

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

Gentlemen:

Re: Turkey Point Units 3 and 4
Docket Nos. 50-250 and 50-251
1992 Annual Radiological
Environmental Operating Report

Attached is the 1992 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 regarding this information, please contact us.

Very truly yours,

T. F. Plunkett
Vice President
Turkey Point Nuclear

TFP/JEK/jk

Attachment

cc: Stewart D. Ebneter, Regional Administrator, Region II, USNRC
Ross C. Butcher, Senior Resident Inspector, USNRC, Turkey Point Plant

310141

IE25 1/1

1992

ANNUAL
RADIOLOGICAL ENVIRONMENTAL
OPERATING REPORT

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

DATA SUBMITTED BY: FLORIDA DHRS

PREPARED BY: Peter G Boaty 2 MAR 93

REVIEWED BY: J L Daniels 3/5/93

1992
ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT
TURKEY POINT PLANT - UNITS 3 & 4

TABLE OF CONTENTS

EXECUTIVE SUMMARY

The data obtained through the Turkey Point Radiological Environmental Monitoring Program verifies the levels of radiation and concentrations of radioactive materials in environmental samples is 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.

Although certain aspects of the program were affected by the passage of Hurricane Andrew, the program was fully restored to the technical specification requirements prior to the restart of Unit 4.

1992
ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT
TURKEY POINT PLANT - UNITS 3 & 4

I. INTRODUCTION

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

II. RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

A. Purpose

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

B. Program Description

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

1. Sample Locations, Types and Frequencies:

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

Hurricane Andrew destroyed more than two-thirds of the TLD locations, 13 of the 21 TLD pairs were recovered by September 2nd. As of September 14th, the TLD portion of the REMP was fully restored.

The restoration involved relocation; for the most part, the new location is within a hundred yards of the pre-storm location.

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.

Hurricane Andrew destroyed 4 of the 5 air sampling stations; however, 2 of the 5 particulate filters were recovered and 3 of the 5 iodine sampling cartridges were recovered. By September 9th, 3 of the 5 air sampling stations were operational. The air sampling program was fully restored by September 19th.

Note: The remaining four portions of the program, listed below, were not affected by the storm.

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

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

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

2. **Analytical Responsibility:**

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

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

C. Analytical Results

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

D. Land Use Census

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

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

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

E. Interlaboratory Comparison Program

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

III. DISCUSSION AND INTERPRETATION OF RESULTS

A. Reporting of Results

The Annual Radiological Environmental Operating Report contains the summaries, interpretations and information required by the Turkey Point Units 3 & 4 Technical

Specifications. Table 1 provides a summary of the measurements made for the nuclides required by Technical Specifications, Table 3.12-2, for all samples specified by Table 3.12-1. In addition, summaries are provided for other nuclides identified in the specified samples, including those not related to station operation. These include nuclides such as K-40, Th-232, Ra-226, and Be-7 which are common in the Florida environment.

B. Interpretation of Results

1. **Direct Radiation:**

The results for 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 preoperational surveillance program. Direct radiation monitoring results are summarized in Table 1.

2. **Air Particulates/Radioiodine:**

Results of gross beta measurement are consistent with past measurements. No radioiodine was detected. The only identified isotope is cosmic-ray produced Be-7 at levels consistent with past measurements.

3. **Waterborne; Surface Water:**

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

4. **Waterborne; Sediment, and Food Products:**

4.1 Sediment: The results are consistent with past measurements; other than one indication of Cs-137 at the conrol location at less than 4% of the Table 4.12-1 LLD, only naturally occurring radionuclides were detected.

4.2 Food Products: The results are consistent with past measurements; other than one indication of Cs-137 at location T-81 at less than 1% of the Table 3.12-2 reporting level, only naturally occurring radionuclides were detected.

5. **Broad Leaf Vegetation:**

The results for radioactivity measurements are consistent with past measurements. Cs-137 was detected, as in the past, in samples collected from all locations. The maximum value, occurring at the control location, is about 22% of the Table 3.12-2 reporting level. No other fission products were detected.

C. Conclusions

The data obtained through the Turkey Point Plant Radiological Environmental Monitoring Program 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. 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 Dade, Florida, Reporting Period January 1 - December 31, 1992
(County, State)

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

Type and Total Number of Analyses Performed	Lower Limit of Detection[a] (LLD)	All Indicator Locations Mean (f) Range	Location with Highest Annual Mean Name[c] Distance & Direction	Mean (f)[b] Range	Control Locations Mean (f)[b] Range
Exposure Rate, 84[d]	---	5.9 (72/84) 4.9 - 8.2	NW-10 10 mi., NW	8.0 (4/4) 7.9 - 8.2	7.0 (4/4) 6.9 - 7.3

Number of Nonroutine Reported Measurements = 0

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM ANNUAL SUMMARY
Name of Facility Turkey Point Units 3 & 4, Docket No(s). 50-250 & 50-251
Location of Facility Dade, Florida, Reporting Period January 1 - December 31, 1992
(County, State)

PATHWAY: AIRBORNE
SAMPLES COLLECTED: RADIOIODINE AND PARTICULATES
UNITS: PICO - Ci/M^3

Type and Total Number of Analyses Performed	Lower Limit of Detection[a] (LLD)	All Indicator Locations Mean (f) Range	Location with Highest Annual Mean Name[c] Distance & Direction	Mean (f)[b] Range	Control Locations Mean (f)[b] Range
^{131}I, 243	0.024	<MDA	---	---	<MDA
Gross Beta, 246	0.0025	0.013 (242/246) 0.003 - 0.045	T-71 0.5 mi., NNE	0.014 (47/47) 0.003 - 0.045	0.012 (51/51) 0.004 - 0.022
Composite Gamma Isotopic, 20					
^{7}Be	0.0052	0.1118 (20/20) 0.0731 - 0.1425	T-58 1 mi., NW	0.1195 (4/4) 0.1027 - 0.1413	0.1122 (4/4) 0.0995 - 0.1322
^{134}Cs	0.00069	<MDA	---	---	<MDA
^{137}Cs	0.00066	<MDA	---	---	<MDA

Number of Nonroutine Reported Measurements = 0

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM ANNUAL SUMMARY
Name of Facility Turkey Point Units 3 & 4, Docket No(s). 50-250 & 50-251
Location of Facility Dade, Florida, Reporting Period January 1 - December 31, 1992
(County, State)

PATHWAY: WATERBORNE
SAMPLES COLLECTED: SURFACE WATER
UNITS: PICO - Ci/LITER

Type and Total Number of Analyses Performed	Lower Limit of Detection[a] (LLD)	All Indicator Locations Mean (f) Range	Location with Highest Annual Mean Name[c] Distance & Direction	Mean (f)[b] Range	Control Locations Mean (f)[b] Range
Tritium, 36	230	183 (7/36) 115 - 288	T-81 6 mi., S	183 (7/12) 115 - 288	<MDA
Gamma Isotopic, 36					
^{40}K	60	263 (36/36) 91 - 379	T-81 6 mi., S	286 (12/12) 203 - 351	237 (12/12) 148 - 345
^{54}Mn	4	<MDA	---	---	<MDA
^{59}Fe	8	<MDA	---	---	<MDA
^{58}Co	4	<MDA	---	---	<MDA
^{60}Co	4	<MDA	---	---	<MDA
^{65}Zn	8	<MDA	---	---	<MDA
^{95}Zr-Nb	7	<MDA	---	---	<MDA
^{131}I	5	<MDA	---	---	<MDA
^{134}Cs	5	<MDA	---	---	<MDA
^{137}Cs	5	<MDA	---	---	<MDA
^{140}Ba-La	11	<MDA	---	---	<MDA

Number of Nonroutine Reported Measurements = 0

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM ANNUAL SUMMARY
Name of Facility Turkey Point Units 3 & 4, Docket No(s). 50-250 & 50-251
Location of Facility Dade, Florida, Reporting Period January 1 - December 31, 1992
(County, State)

PATHWAY: WATERBORNE
SAMPLES COLLECTED: SHORELINE SEDIMENT
UNITS: PICO - Ci/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[c] Name Distance & Direction	Mean (f)[b] Range	Control Locations Mean (f)[b] Range
Gamma Isotopic, 6					
^{7}Be	100	276 (3/6) 113 - 379	T-42 <1 mi., ENE	379 (1/2)	113 (1/2)
^{40}K	140	286 (6/6) 213 - 445	T-42 <1 mi., ENE	390 (2/2) 334 - 445	238 (2/2) 213 - 262
^{232}Th	52	50 (6/6) 40 - 69	T-81 6 mi., S	56 (2/2) 44 - 69	49 (2/2) 44 - 54
^{226}Ra	49	407 (6/6) 111 - 761	T-42 <1 mi., ENE	726 (2/2) 692-761	179 (2/2) 111-247
^{58}Co	9	<MDA	---	---	<MDA
^{60}Co	12	<MDA	---	---	<MDA
^{134}Cs	14	<MDA	---	---	<MDA
^{137}Cs	12	7 (1/6)	---	---	7 (1/2)

Number of Nonroutine Reported Measurements = 0

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM ANNUAL SUMMARY
Name of Facility Turkey Point Units 3 & 4, Docket No(s). 50-250 & 50-251
Location of Facility Dade, Florida, Reporting Period January 1 - December 31, 1992
(County, State)

PATHWAY: INGESTION
SAMPLES COLLECTED: CRUSTACEA
UNITS: PICO - Ci/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	Mean (f)[b] Range	Control Locations Mean (f)[b] Range
Gamma Isotopic, 4					
^{40}K	130	1852 (4/4) 1640 - 2182	T-81 6 mi., S	1711 (2/2) 1640 - 1782	1994 (2/2) 1806 - 2182
^{226}Ra	20	337 (3/4) 94 - 701	T-81 6 mi., S	458 (2/2) 215 - 701	94 (1/2)
^{228}Ra	---	66 (2/4) 58 - 73	T-81 6 mi., S	73 (1/2)	58 (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 Nonroutine Reported Measurements = 0

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM ANNUAL SUMMARY
Name of Facility Turkey Point Units 3 & 4, Docket No(s). 50-250 & 50-251
Location of Facility Dade, Florida, Reporting Period January 1 - December 31, 1992
(County, State)

PATHWAY: INGESTION
SAMPLES COLLECTED: FISH
UNITS: PICO - Ci/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	Mean (f)[b] Range	Control Locations Mean (f)[b] Range
Gamma Isotopic, 4					
^{40}K	130	2562 (4/4) 2255 - 2975	T-81 6 mi., S	2458 (2/2) 2255 - 2662	2666 (2/2) 2357 - 2975
^{137}Cs	9	17 (1/4)	T-81 6 mi. S	17 (1/2)	<MDA
^{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

Number of Nonroutine Reported Measurements = 0

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM ANNUAL SUMMARY
Name of Facility Turkey Point Units 3 & 4, Docket No(s). 50-250 & 50-251
Location of Facility Dade, Florida, Reporting Period January 1 - December 31, 1992
(County, State)

PATHWAY: INGESTION
SAMPLES COLLECTED: BROAD LEAF VEGETATION
UNITS: PICO - Ci/Kg, WET

Type and Total Number of Analyses Performed	Lower Limit of Detection[a] (LLD)	All Indicator Locations Mean (f) Range	Location with Highest Annual Mean Name[c] Distance & Direction	Mean (f)[b] Range	Control Locations Mean (f)[b] Range
Gamma Isotopic, 36					
^{7}Be	71	1090 (36/36) 384 - 4125	T-41 2 mi., W/NW	1398 (12/12) 634 - 4125	1036 (12/12) 422 - 1899
^{40}K	100	3742 (36/36) 2058 - 6618	T-40 3 mi., W	4020 (12/12) 2702 - 6618	3737 (12/12) 2058 - 5248
^{137}Cs	8	108 (30/36) 13 - 442	T-41 2 mi., W/NW	137 (11/12) 37 - 407	141 (8/12) 13 - 442
^{131}I	9	<MDA	---	---	<MDA
^{134}Cs	8	<MDA	---	---	<MDA

Number of Nonroutine Reported Measurements = 0

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM ANNUAL SUMMARY
Name of Facility Turkey Point Units 3 & 4
Docket No.(s) 50-250 and 50-251
Location of Facility Dade, Florida
(County, State)
Reporting Period January 1 - December 31, 1992

NOTES

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

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

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

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

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

MDA refers to minimum detectable activity.

1992
ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT
TURKEY POINT PLANT, UNITS 3 & 4

TABLE 1

DEVIATIONS/MISSING DATA

A) **Pathway:** Direct Radiation

Location: SSE-SE-1 (1 mi. Southeasterly)

Date: 3/24/92 to 6/16/92

Deviation: Failure to continuously monitor direct exposure at this location.

Description of Problem: TLDs for this location were missing; empty holder was found.

Corrective Action: Replaced TLDs at time of discovery.

B) **Pathway:** Airborne

Location: T-72 (<1 mile, WSW)

Date: 3/30/92 to 4/7/92

Deviation: Failure to continuously provide air sampling at this location.

Description of Problem: Electrical failure, power outage at sampling site. Estimated to have run for 147 hours out of the 214 hours of this period.

Corrective Action: Contacted utility to restore service.

TABLE 1

DEVIATIONS/MISSING DATA

C) **Pathway:** Direct Radiation

Location: NNW-2 (2 miles, NNW)

Date: 9/16/92 to 12/16/92

Deviation: Failure to provide continuous monitoring of direct radiation.

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

Corrective Action: Replaced TLDs at time of discovery.

D) **Pathway:** Direct Radiation

Location: SW-8 (8 miles, SW)

Date: 9/16/92 to 12/16/92

Deviation: Failure to provide continuous monitoring of direct radiation.

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

Corrective Action: Replaced TLDs at time of discovery.

TABLE 1

DEVIATIONS/MISSING DATA
(Note: The Remaining are Hurricane Related)

E) **Pathway:** Direct Radiation

Location: S-5

Date: Third Quarter

Deviation: Failure to meet "Once per Calendar Quarter" sampling criteria at this location.

Description of Problem: Hurricane damage to dirt road impeded access to this remote location.

Corrective Action: Periodic checking on accessibility; once roadway was opened, collected TLD/deployed replacement.

F) **Pathway:** Direct Radiation

Location: N-10, NNW-1, NNW-10, W/WNW-5, W-10, SW/SSW-1, SSW-10 (Sector and distance (miles) is the location name.)

Date: 6/16/92 to 9/16/92

Deviation: Failure to continuously monitoring direct radiation at these locations.

Description of Problem: Hurricane Andrew destroyed sampline equipment; TLDs either not found or found damaged.

Corrective Action: Replaced TLDs.

TABLE 1

DEVIATIONS/MISSING DATA
(Note: The Remaining are Hurricane Related)

G) **Pathway:** Airborne

Deviation: Failure to provide continuous air sampling.

Description of Problem: Hurricane damage destroyed the sampling equipment

Location:
Date:
Corrective Action:

1) T-57 (4 miles, NW), 8/24/92 to 9/9/92 Established alternate sampling location T-52 (7 miles, W).

2) T-58 (1 mile, NW), 8/24/92 to 9/9/92 established temporary power source until permanent power was available.

3) T-72 (<1 mile, WSW), 8/24/92 to 9/14/92, established temporary power source until permanent power was available.

4) T-51 (2 miles, NNW), 8/24/92 to 9/18/92, ran power lines to existing spare sampling hut to establish this as an alternate location.

1992
ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT
TURKEY POINT PLANT, UNITS 3 & 4

TABLE 1B

ANALYSES WITH LLDs ABOVE TABLE 4.12-1 DETECTION CAPABILITIES
1/1/92 - 12/31/92

The values specified in Table 4.12-1, Detection Capabilities, were achieved for all samples.

TABLE 2

LAND USE CENSUS

Distance to Nearest (a, b)

Sector	6/92 Milk (c) Animal	6/92 Residence	6/92 Garden (d)
N	L (e)	2.1/350 (g)	L
NNE	O (f)	O	O
NE	O	O	O
ENE	O	O	O
E	O	O	O
ESE	O	O	O
SE	O	O	O
SSE	O	O	O
S	L	L	O
SSW	L	L	L
SW	L	L	L
WSW	L	L	L
W	L	L	L
WNW	L	3.6/302 (h)	L
NW	L	L	3.8/305
NNW	L	L (g)	4.0/328

TABLE 2

LAND USE CENSUS

NOTES

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

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

distance (miles)/bearing (degrees)

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

c. Potential milk animal locations.

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

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

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

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

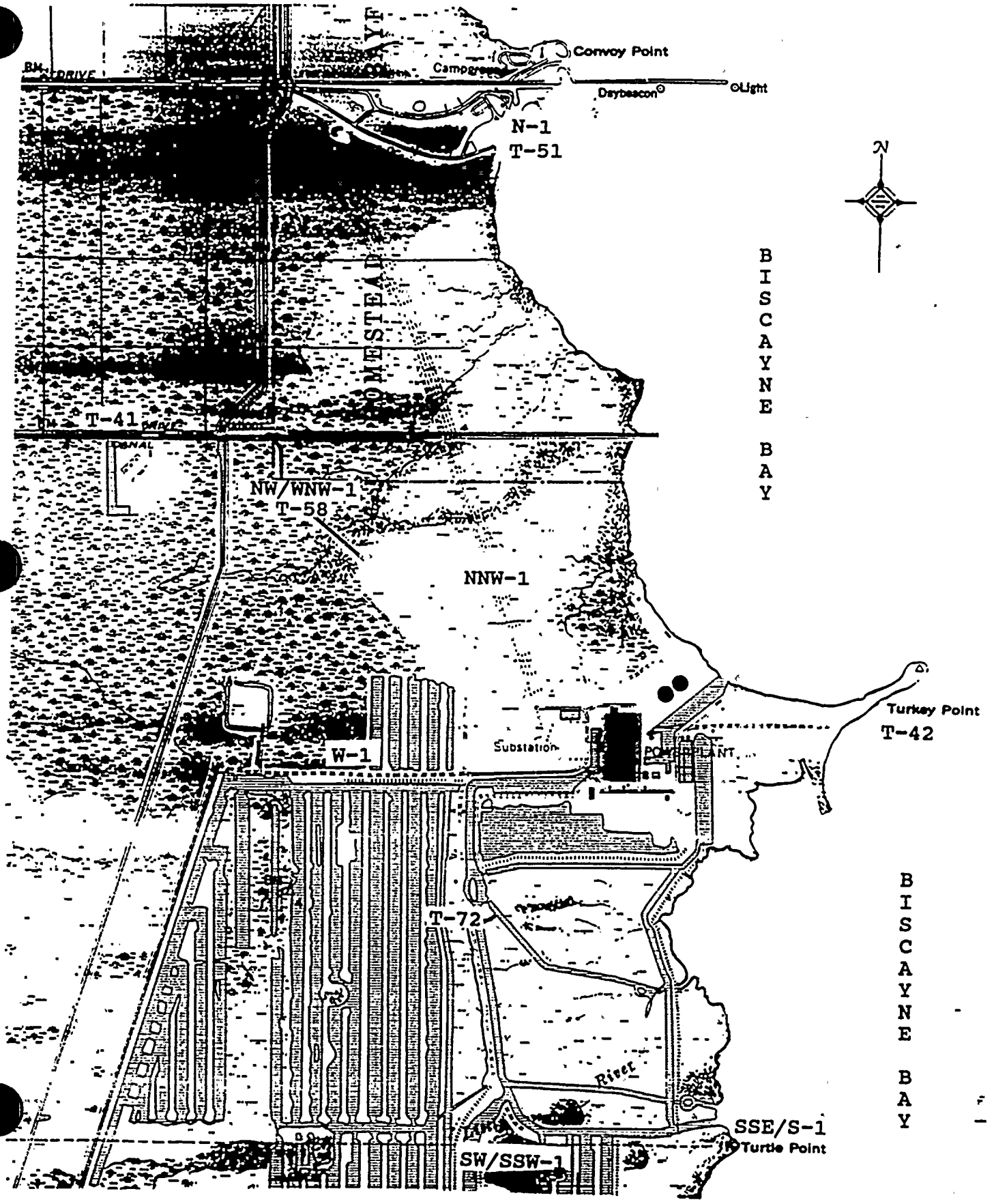
Sector	Distance	Description
N	1.8/349	24-hour Security Staffing Building
NNW	4.5/327	Mobile homes used for field offices
NNW	1.8/345	Security booth at park entrance

h. This house, vacant since construction years ago, became occupied in May; Hurricane Andrew destroyed the home.

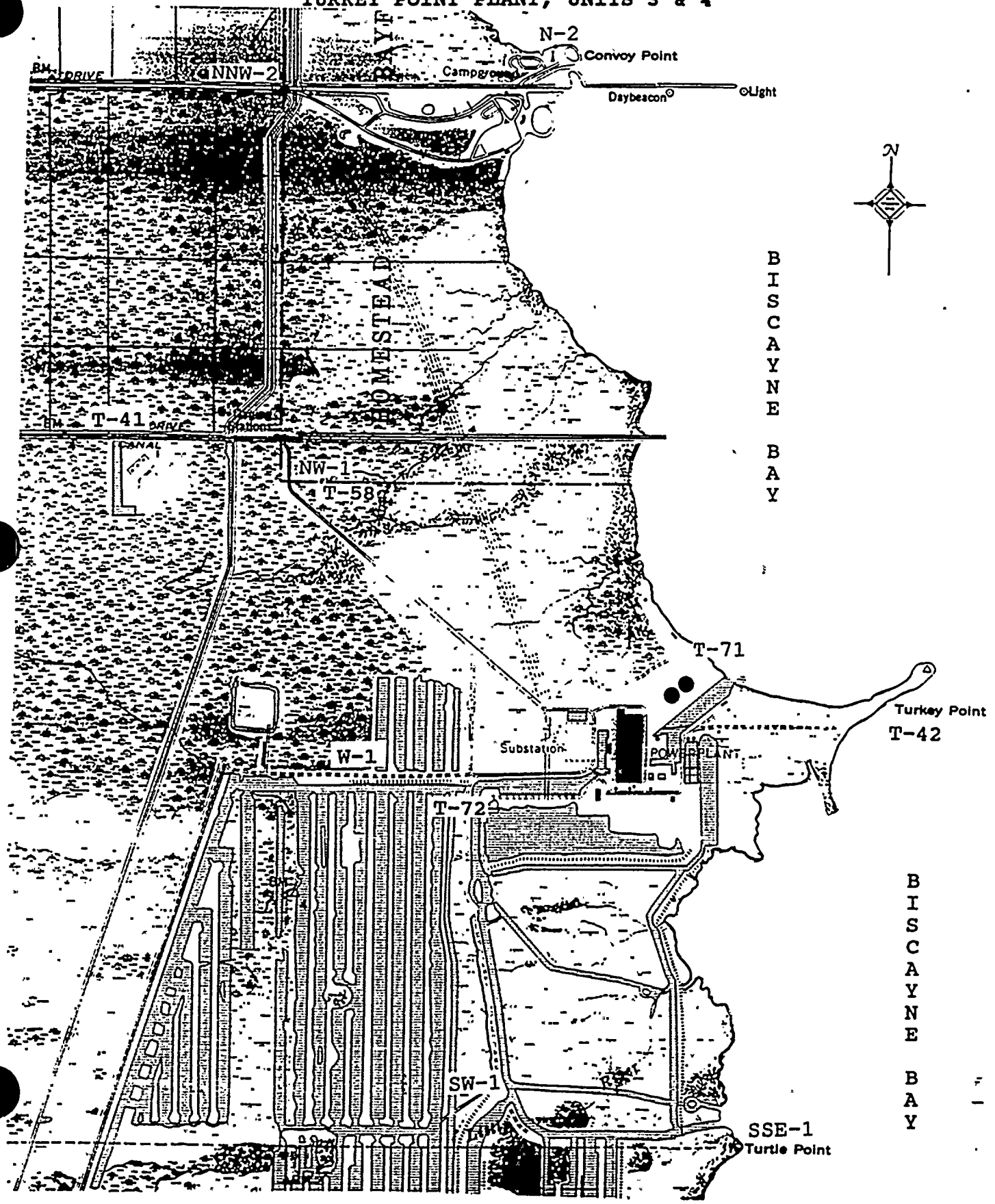
1992
ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT
TURKEY POINT PLANT, UNITS 3 & 4

ATTACHMENT A

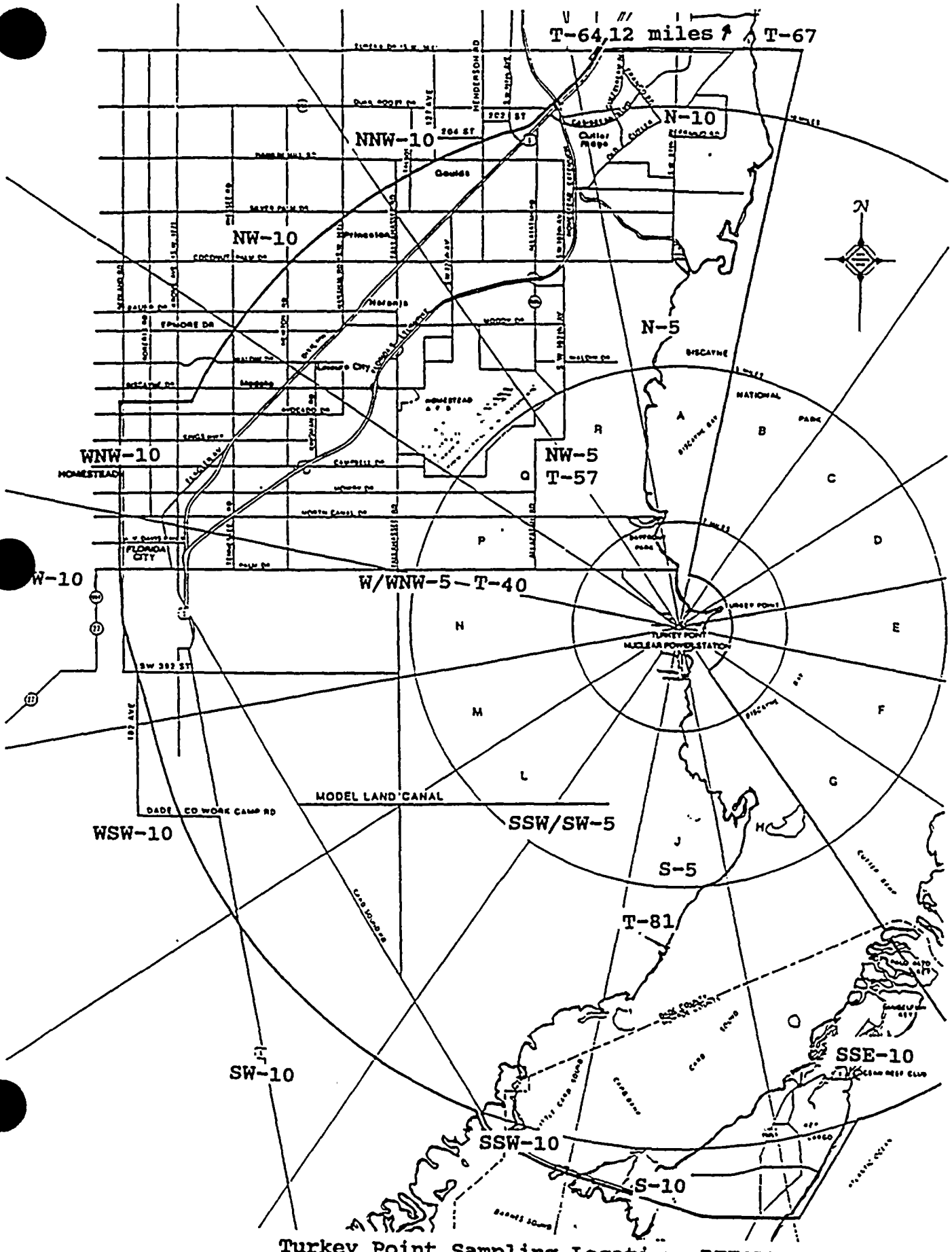
KEY TO SAMPLE LOCATIONS



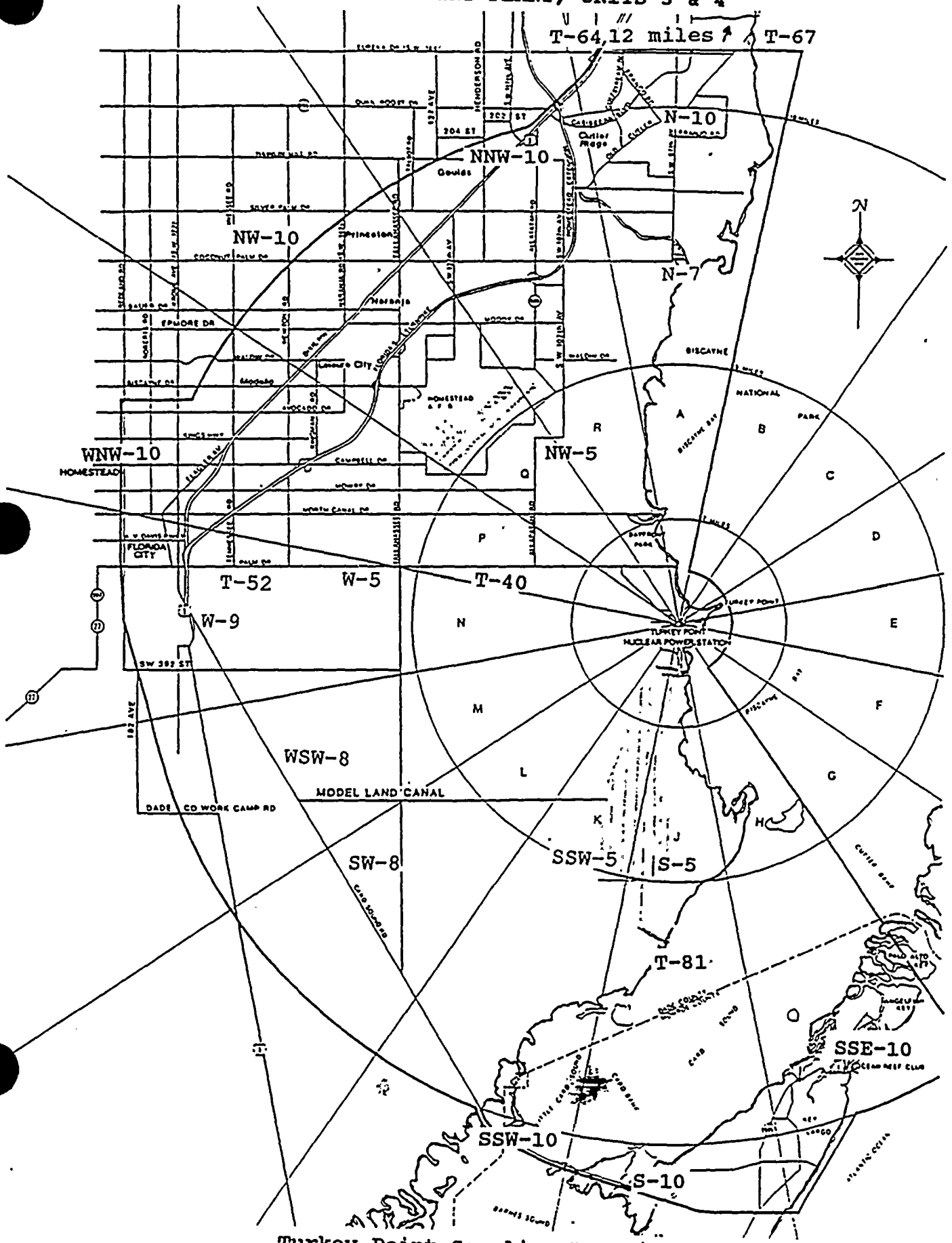
Turkey Point Sampling Locations BEFORE HURRICANE ANDREW
Plant Site Area



Turkey Point Sampling Locations AFTER HURRICANE ANDREW
Plant Site Area



Turkey Point Sampling Locations BEFORE HURRICANE ANDREW



Turkey Point Sampling Locations AFTER HURRICANE ANDREW

ATTACHMENT A

PATHWAY: DIRECT RADIATION, TLD LOCATIONS BEFORE HURRICANE ANDREW
SAMPLES COLLECTED: TLD
SAMPLE COLLECTION FREQUENCY: QUARTERLY

Location Name	Direction Sector	Approximate Distance (miles)	Description
N-1	N	1	Convoy Point
N-5	N	6	North of Moody Drive
N-10	N	12	Old Cutler Rd. at S.W. 87 Avenue
NNW-1	NNW	<1	Turkey Point Entrance Rd.
NNW-10	NNW	9	Burr Rd. at Hainlin Mill Dr.
NW/WNW-1	WNW	1	Turkey Point Entrance Rd.
[illegible]W-5	NNW	4	Dolan's Farm on Kings Hwy.
[illegible]-10	NW	10	Intersec Farm Lite & Coconut Palm
[illegible]/WNW-5	W	5	Palm Dr. at Tallahassee Rd.
WNW-10	WNW	9	Homestead near Vehicle Inspect. Station
W-1	W	1	On-Site near Cooling Tower
W-10	W	10	Florida City near Fire Tower
WSW-10	WSW	12	Old Hawk Missile Site, South of Florida City
SW/SSW-1	SSW	1	On-Site near Land Utilization Offices
SW-10	SW	10	U.S. 1 South of Florida City
SSW/SW-5	SSW	5	On-Site, Southeast Corner of Cooling Canals
SSW-10	SSW	10	At Card Sound Bridge
S-5	S	5	On-Site, South End of Cooling Canals
S-10	S	10	Card Sound Road at Steamboat Creek
SSE/S-1	SSE	1	Turtle Point
SSE-10	SSE	8	Ocean Reef

ATTACHMENT A

PATHWAY: DIRECT RADIATION, TLD LOCATIONS AFTER HURRICANE ANDREW
SAMPLES COLLECTED: TLD
SAMPLE COLLECTION FREQUENCY: QUARTERLY

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

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

ATTACHMENT A

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

Before Hurricane

Location Name	Direction Sector	Approximate Distance (miles)	Description
T-51	NNW	2	Homestead Bayfront Park
T-57	NW	4	Tree Nursery on 316th Street
T-58	NW	1	Turkey Point Entrance Road
T-72	WSW	<1	Turkey Point Boy Scout Camp
Control:			
T-64	NNE	22	Natoma Substation

After Hurricane

Location Name	Direction Sector	Approximate Distance (miles)	Description
T-52	W	7	Florida City Substation Interim - Alternate to T-51
T-58	NW	1	Turkey Point Entrance Road
T-71	NNE	0.5	Florida City Sutstation Interim - Alternate to T-57
T-72	WSW	<1	Turkey Point Boy Scout Camp
Control:			
T-64	NNE	22	Natoma Substation

ATTACHMENT A

Locations Not Affected by Hurricane

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 A1A
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

Locations Not Affected by Hurricane

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

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

SAMPLES COLLECTED: BROAD LEAF VEGETATION
SAMPLE COLLECTION FREQUENCY: MONTHLY

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

1992
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

1992

First Quarter, 1992

Second Quarter, 1992

Third Quarter, 1992

Fourth Quarter, 1992

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

First Quarter, 1992

Office of Radiation Control

Florida Department of Health
and Rehabilitative Services

TURKEY POINT SITE

Technical Specifications Sampling

First Quarter, 1992

Sample Type	Collection Frequency	Locations Sampled	Number of Samples
1. Direct Radiation	Quarterly	21	42
2. Airborne			
2.a Air Iodines	Weekly	5	65
2.b Air Particulates	Weekly	5	69*
3. Waterborne			
3.a Surface Water	Monthly	3	9
3.b Shoreline Sediment	Semiannually	3	3
4. Ingestion			
4.a Fish and Invertebrates			
4.a.1 Crustacea	Semiannually	2	2
4.a.2 Fish	Semiannually	2	2
4.b Food Products			
4.b.1 Broadleaf Vegetation	Monthly	3	10*
			Total: 202

* - Includes NRC split samples.

NOTE: Measurement results having magnitudes that are significantly above the background of the measurement system are reported as net values plus or minus a one-standard-deviation error term.

Measurement results that are 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 - (micro-R/hour)

Each result is the average net response of two dosimeters.

Sample Site		Deployment Collection 12-03-91 03-24-92
N-1	(A)	6.4 ± 0.3
N-5		6.1 ± 0.3
N-10		5.9 ± 0.3
NNW-1		6.2 ± 0.3
NNW-10		6.4 ± 0.3
NW/WNW-1		5.1 ± 0.3
NW-5		5.7 ± 0.3
NW-10		8.2 ± 0.4
W/WNW-5		5.0 ± 0.3
WNW-10		6.6 ± 0.3
W-1		6.3 ± 0.3
W-10		7.0 ± 0.4
WSW-10		5.0 ± 0.3
SW/SSW-1		5.1 ± 0.3
SW-10		5.1 ± 0.3
SSW/SW-5		6.1 ± 0.3
SSW-10		6.1 ± 0.3
S-5		5.5 ± 0.3
S-10		6.2 ± 0.3
SSE/S-1		5.9 ± 0.3
SSE-10		4.9 ± 0.3

(A) - The dosimeters at site N-1 had fallen off of the pole on which they were mounted. They were found at the base of the pole sometime near the beginning of March by the staff at that site. The dosimeters had been kept in a desk drawer after they were found.

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

Collection Date	Sample Site T51	T57	T58	T64	T72
01-07-92	<0.02	<0.02	<0.02	<0.02	<0.02
01-13-92	<0.04	<0.04	<0.04	<0.04	<0.04
01-21-92	<0.01	<0.01	<0.02	<0.02	<0.02
01-28-92	<0.05	<0.05	<0.04	<0.04	<0.04
02-04-92	<0.02	<0.02	<0.02	<0.02	<0.02
02-11-92	<0.03	<0.03	<0.03	<0.03	<0.03
02-18-92	<0.03	<0.03	<0.03	<0.03	<0.03
02-25-92	<0.02	<0.02	<0.02	<0.02	<0.02
03-03-92	<0.02	<0.02	<0.02	<0.02	<0.02
03-10-92	<0.02	<0.02	<0.02	<0.02	<0.02
03-18-92	<0.02	<0.02	<0.02	<0.02	<0.02
03-24-92	<0.02	<0.02	<0.02	<0.02	<0.02
03-30-92	<0.04	<0.04	<0.04	<0.03	<0.04

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

Collection Date	Sample Site T51	T57	T58	T64	T72
01-07-92	0.011 ± 0.002	0.011 ± 0.002	0.014 ± 0.002	0.014 ± 0.002	0.011 ± 0.002
01-13-92	0.016 ± 0.002	0.017 ± 0.002	0.018 ± 0.002	0.020 ± 0.002	0.015 ± 0.002
01-21-92	0.012 ± 0.002	0.012 ± 0.001	0.017 ± 0.002	0.012 ± 0.002	0.013 ± 0.002
01-28-92	0.013 ± 0.002	0.013 ± 0.002	0.011 ± 0.002	0.012 ± 0.002	0.010 ± 0.002
02-04-92	0.009 ± 0.002	0.010 ± 0.002	*0.009 ± 0.002	0.008 ± 0.002	0.009 ± 0.002
02-11-92	0.009 ± 0.002	0.010 ± 0.002	*0.011 ± 0.002	0.012 ± 0.002	0.013 ± 0.002
02-18-92	0.005 ± 0.002	0.008 ± 0.002	*0.007 ± 0.002	0.008 ± 0.002	0.008 ± 0.002
02-25-92	0.004 ± 0.001	0.008 ± 0.002	*0.007 ± 0.002	0.005 ± 0.001	0.007 ± 0.002
03-03-92	0.015 ± 0.002	0.011 ± 0.002	0.011 ± 0.002	0.012 ± 0.002	0.012 ± 0.002
03-10-92	0.011 ± 0.002	0.006 ± 0.002	0.008 ± 0.002	0.011 ± 0.002	0.010 ± 0.002
03-18-92	0.016 ± 0.002	0.015 ± 0.002	0.016 ± 0.002	0.015 ± 0.002	0.016 ± 0.002
03-24-92	0.015 ± 0.002	0.016 ± 0.002	0.015 ± 0.002	0.015 ± 0.002	0.017 ± 0.002
03-30-92	0.021 ± 0.002	0.014 ± 0.002	0.016 ± 0.002	0.014 ± 0.002	0.019 ± 0.002
Means:	0.012 ± 0.001	0.012 ± 0.001	0.012 ± 0.001	0.012 ± 0.001	0.012 ± 0.001

* - NRC split samples.

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

First Quarter, 1992

Sample Site	Be-7	K-40	Cs-134	Cs-137
T51	0.1423 ± 0.0115	<0.0184	<0.0011	<0.0010
T57	0.1270 ± 0.0124	<0.0155	<0.0008	<0.0012
T58	0.1413 ± 0.0126	<0.0153	<0.0009	<0.0009
T64	0.1322 ± 0.0122	<0.0208	<0.0008	<0.0010
T72	0.1425 ± 0.0124	<0.0181	<0.0014	<0.0007

3.a SURFACE WATER - (pCi/l)

Sample Site	Collection Date	H-3	K-40	Mn-54	Fe-59	Co-58	Co-60	Zn-65	Zr-95 Nb-95 (A)	I-131	Cs-134	Cs-137	Ba-140 La-140 (B)
T42	01-10-92	<147	213 ± 32	<3	<11	<4	<5	<9	<7	<7	<4	<4	<6
	02-12-92	<135	274 ± 34	<4	<8	<4	<4	<7	<6	<9	<3	<4	<4
	03-19-92	<133	356 ± 39	<5	<10	<4	<5	<9	<8	<8	<4	<4	<5
T67	01-10-92	<147	185 ± 30	<4	<7	<4	<4	<9	<8	<5	<4	<4	<5
	02-13-92	<135	290 ± 35	<3	<10	<4	<5	<8	<7	<7	<5	<4	<7
	03-24-92	<133	265 ± 36	<4	<9	<4	<5	<9	<8	<5	<4	<5	<7
T81	01-10-92	<147	340 ± 43	<3	<10	<4	<5	<9	<9	<8	<4	<5	<8
	02-12-92	<151	254 ± 36	<4	<11	<3	<4	<8	<7	<9	<4	<5	<4
	03-19-92	171 ± 45	258 ± 34	<4	<9	<4	<5	<7	<7	<10	<5	<5	<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 SEDIMENT - (pCi/kg, dry weight)

Sample Site	Collection Date	Be-7	K-40	Co-58	Co-60	Cs-134	Cs-137	Ra-226	Th-232
T42	01-02-92	<213	334 ± 77	<12	<13	<11	<12	692 ± 20	40 ± 20
T67	01-06-92	<76	213 ± 42	<7	<8	<9	7 ± 3	247 ± 31	44 ± 9
T81	01-03-92	<122	223 ± 53	<9	<12	<8	<8	202 ± 8	44 ± 14

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

Sample Site	Collection Date	K-40	Mn-54	Fe-59	Co-58	Co-60	Zn-65	Cs-134	Cs-137	Ra-226	Ra-228
T67	01-28-92	1806 ± 116	<9	<23	<8	<11	<23	<9	<10	94 ± 7	58 ± 13
T81	01-23-92	1640 ± 150	<14	<36	<14	<16	<32	<15	<14	701 ± 15	ND

4.a.2 FISH - Mixed Species - (pCi/kg, wet weight)

Sample Site	Collection Date	K-40	Mn-54	Fe-59	Co-58	Co-60	Zn-65	Cs-134	Cs-137	Ra-226	Ra-228
T67	02-03-92	2357 ± 125	<9	<26	<9	<12	<26	<10	<10	ND	ND
T81	02-05-92	2255 ± 127	<9	<28	<9	<14	<25	<10	<12	ND	ND

ND - Non-detectable.

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

Sample Site	Collection Date	Be-7	K-40	I-131	Cs-134	Cs-137
T40	01-10-92	859 ± 64	5011 ± 170	<13	<11	77 ± 7
	*02-13-92	1137 ± 74	4762 ± 168	<18	<13	34 ± 5
	03-24-92	1385 ± 63	3232 ± 130	<10	<10	73 ± 7
T41	01-10-92	1171 ± 78	3394 ± 159	<16	<13	141 ± 10
	02-13-92	1086 ± 67	2484 ± 124	<16	<11	115 ± 8
	03-24-92	2116 ± 86	3183 ± 133	<10	<8	103 ± 8
T67	01-10-92	1062 ± 76	2058 ± 127	<17	<10	442 ± 16
	02-13-92	1213 ± 81	2276 ± 130	<21	<9	330 ± 14
	03-24-92	1100 ± 72	2115 ± 118	<12	<9	262 ± 11

* - NRC split sample.

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

Second Quarter, 1992

Office of Radiation Control

Florida Department of Health
and Rehabilitative Services

TURKEY POINT SITE

Technical Specifications Sampling

Second Quarter, 1992

Sample Type	Collection Frequency	Locations Sampled	Number of Samples
1. Direct Radiation	Quarterly	21	40
2. Airborne			
2.a Air Iodines	Weekly	5	65
2.b Air Particulates	Weekly	5	69*
3. Waterborne			
3.a Surface Water	Monthly	3	9
3.b Shoreline Sediment	Semiannually	0	0
4. Ingestion			
4.a Fish and Invertebrates			
4.a.1 Crustacea	Semiannually	0	0
4.a.2 Fish	Semiannually	0	0
4.b Food Products			
4.b.1 Broadleaf Vegetation	Monthly	3	9
			Total: 192

* - Includes NRC split samples.

NOTE: Measurement results having magnitudes that are significantly above the background of the measurement system are reported as net values plus or minus a one-standard-deviation error term.

Measurement results that are 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 - (micro-R/hour)

Each result is the average net response of two dosimeters.

Sample Site	Deployment Collection 03-24-92 06-16-92
N-1 (A)	5.6 ± 0.3
N-5	6.1 ± 0.3
N-10	5.9 ± 0.3
NNW-1	5.6 ± 0.3
NNW-10	6.2 ± 0.3
NW/WNW-1	5.2 ± 0.3
NW-5	5.5 ± 0.3
NW-10	7.9 ± 0.4
W/WNW-5	5.2 ± 0.3
WNW-10	6.5 ± 0.3
W-1	6.3 ± 0.3
W-10	6.9 ± 0.4
WSW-10	5.1 ± 0.3
SW/SSW-1	5.0 ± 0.3
SW-10	5.1 ± 0.3
SSW/SW-5	6.0 ± 0.3
SSW-10	6.1 ± 0.3
S-5	5.1 ± 0.3
S-10 (B)	5.7 ± 0.3
SSE/S-1	(C)
SSE-10	5.0 ± 0.3

(A) - This result is significantly lower than the long-term average value of 6.5 micro-R per hour for nine previous quarterly measurements at site N-1. This difference is believed to be due to the fact that these dosimeters had to be moved to a slightly different location at that site at the beginning of this sample.

(B) - The dosimeters for site S-10 were found lying on the ground at the base of the utility pole upon which they had been deployed. They had apparently fallen from their holder, or they may have been removed from the holder by someone. Although we do not know how long these dosimeters were out of place, the result obtained is normal for this site.

(C) - The dosimeters for site SSE/S-1 were missing when collection was attempted. A search of the area produced only the empty plastic containers in which the dosimeters had been deployed.

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

Collection Date	Sample Site T51	T57	T58	T64	T72
04-07-92	<0.02	<0.02	<0.02	<0.02	<0.03(A)
04-16-92	<0.02	<0.02	<0.02	<0.02	<0.02
04-21-92	<0.03	<0.03	<0.03	<0.03	<0.03
04-29-92	<0.02	<0.02	<0.02	<0.02	<0.02
05-06-92	<0.03	<0.03	<0.03	<0.03	<0.03
05-15-92	<0.01	<0.01	<0.01	<0.02	<0.02
05-22-92	<0.02	<0.02	<0.02	<0.02	<0.02
05-28-92	<0.03	<0.03	<0.03	<0.03	<0.03
06-03-92	<0.03	<0.04	<0.03	<0.03	<0.03
06-10-92	<0.03	<0.03	<0.03	<0.03	<0.03
06-16-92	<0.03	<0.03	<0.04	<0.03	<0.04
06-22-92	<0.03	<0.03	<0.03	<0.03	<0.03
06-29-92	<0.03	<0.03	<0.03	<0.03	<0.03

(A) - There was a power outage in the mid-part of this sample. The equipment is estimated to have run for 147 hours out of the 214 total hours for this sampling interval.

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

Collection Date	Sample Site T51	T57	T58	T64	T72
04-07-92	0.017 ± 0.002	0.019 ± 0.002	0.020 ± 0.002	0.019 ± 0.002	(A0.017 ± 0.002
04-16-92	0.010 ± 0.001	0.010 ± 0.001	0.011 ± 0.002	0.010 ± 0.001	0.011 ± 0.002
04-21-92	0.008 ± 0.002	0.010 ± 0.002	0.007 ± 0.002	0.008 ± 0.002	0.009 ± 0.002
04-29-92	0.015 ± 0.002	0.011 ± 0.002	0.010 ± 0.001	0.011 ± 0.002	0.012 ± 0.002
05-06-92	0.020 ± 0.002	0.018 ± 0.002	*0.018 ± 0.002	0.020 ± 0.002	0.020 ± 0.002
05-15-92	0.017 ± 0.002	0.020 ± 0.002	*0.020 ± 0.002	0.015 ± 0.002	0.016 ± 0.002
05-22-92	0.011 ± 0.002	0.012 ± 0.002	*0.009 ± 0.002	0.010 ± 0.002	0.011 ± 0.002
05-28-92	0.017 ± 0.002	0.016 ± 0.002	*0.021 ± 0.002	0.015 ± 0.002	0.018 ± 0.002
06-03-92	0.012 ± 0.002	0.013 ± 0.002	0.007 ± 0.002	0.019 ± 0.002	0.008 ± 0.002
06-10-92	0.005 ± 0.001	0.005 ± 0.001	0.008 ± 0.002	0.008 ± 0.002	0.008 ± 0.002
06-16-92	0.003 ± 0.002	0.005 ± 0.002	<0.005	0.004 ± 0.002	<0.007
06-22-92	0.010 ± 0.002	0.006 ± 0.002	0.004 ± 0.002	0.006 ± 0.002	0.006 ± 0.002
06-29-92	0.012 ± 0.002	0.007 ± 0.001	0.008 ± 0.002	0.007 ± 0.002	0.008 ± 0.001
Means:	0.012 ± 0.001	0.012 ± 0.001	0.011 ± 0.001	0.012 ± 0.001	0.011 ± 0.001

* - NRC split samples.

(A) - There was a power outage in the mid-part of this sample. The equipment is estimated to have run for 147 hours out of the 214 total hours for this sampling interval.

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

Second Quarter, 1992

Sample Site	Be-7	K-40	Cs-134	Cs-137
T51	0.1069 ± 0.0108	<0.0213	<0.0007	<0.0008
T57	0.1039 ± 0.0106	<0.0198	<0.0011	<0.0011
T58	0.1050 ± 0.0111	<0.0159	<0.0005	<0.0006
T64	0.1155 ± 0.0106	<0.0207	<0.0014	<0.0008
T72	0.1138 ± 0.0114	<0.0167	<0.0013	<0.0011

3.a SURFACE WATER - (pCi/l)

Sample Site	Collection Date	H-3	K-40	Mn-54	Fe-59	Co-58	Co-60	Zn-65	Zr-95 Nb-95 (A)	I-131	Cs-134	Cs-137	Ba-140 La-140 (B)
T42	04-20-92	<137	294 ± 42	<5	<8	<4	<4	<10	<7	<5	<4	<3	<6
	05-08-92	<134	379 ± 44	<4	<9	<4	<5	<8	<6	<6	<5	<4	<7
	06-12-92	<132	304 ± 35	<5	<8	<4	<4	<8	<7	<7	<4	<4	<8
T67	04-17-92	<137	209 ± 41	<4	<8	<4	<4	<8	<8	<5	<5	<4	<7
	05-12-92	<134	345 ± 37	<3	<8	<5	<5	<8	<5	<5	<5	<5	<7
	06-12-92	<132	265 ± 36	<5	<8	<3	<4	<10	<7	<7	<4	<5	<4
T81	04-20-92	149 ± 46	313 ± 40	<4	<10	<4	<4	<8	<6	<5	<6	<4	<4
	05-08-92	115 ± 44	305 ± 35	<4	<10	<4	<5	<8	<7	<7	<4	<4	<7
	06-12-92	175 ± 45	288 ± 35	<4	<11	<3	<5	<12	<6	<7	<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.

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

Sample Site	Collection Date	Be-7	K-40	I-131	Cs-134	Cs-137
T40	04-17-92	923 ± 28	4006 ± 60	<11	<4	41 ± 3
	*05-12-92	492 ± 45	3811 ± 142	<7	<10	25 ± 4
	06-17-92	800 ± 74	3679 ± 166	<16	<13	36 ± 7
T41	04-17-92	4125 ± 109	2677 ± 124	<16	<10	132 ± 9
	05-12-92	1203 ± 63	3686 ± 141	<8	<8	75 ± 7
	06-17-92	897 ± 75	3180 ± 141	<16	<8	407 ± 13
T67	04-17-92	892 ± 69	4391 ± 169	<18	<13	<13
	05-12-92	448 ± 51	3908 ± 161	<11	<12	27 ± 6
	06-17-92	1252 ± 74	3529 ± 151	<13	<11	23 ± 5

* - The NRC split sample which is normally collected at site T40 in May each year was collected in February this year.

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

Third Quarter, 1992

Office of Radiation Control

Florida Department of Health
and Rehabilitative Services

TURKEY POINT SITE

Technical Specifications Sampling

Third Quarter, 1992

Sample Type	Collection Frequency	Locations Sampled	Number of Samples
1. Direct Radiation	Quarterly	21	28
2. Airborne			
2.a Air Iodines	Weekly	5	48
2.b Air Particulates	Weekly	5	49*
3. Waterborne			
3.a Surface Water	Monthly	3	9
3.b Shoreline Sediment	Semiannually	3	3
4. Ingestion			
4.a Fish and Invertebrates			
4.a.1 Crustacea	Semiannually	2	0
4.a.2 Fish	Semiannually	2	0
4.b Food Products			
4.b.1 Broadleaf Vegetation	Monthly	3	9
			Total: 146

* - Includes NRC split samples.

NOTE: Measurement results having magnitudes that are significantly above the background of the measurement system are reported as net values plus or minus a one-standard-deviation error term.

Measurement results that are 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 - (micro-R/hour)

Each result is the average net response of two dosimeters.

Sample Site	Deployment Collection 06-16-92 09-16-92
N-1	6.9 ± 0.4
N-5	6.2 ± 0.3
N-10	(A)
NNW-1	(A)
NNW-10	(A)
NW/WNW-1	5.2 ± 0.3
NW-5	5.7 ± 0.3
NW-10	7.9 ± 0.4
W/WNW-5	(A)
WNW-10	6.7 ± 0.4
W-1	6.4 ± 0.3
W-10	(A)
WSW-10	5.1 ± 0.3
SW/SSW-1	(A)
SW-10	5.1 ± 0.3
SSW/SW-5	5.9 ± 0.3
SSW-10	(A)
S-5	(B)
S-10	6.2 ± 0.3
SSE/S-1	5.6 ± 0.3
SSE-10	5.1 ± 0.3

(A) - These dosimeters were missing as a result of Hurricane Andrew.

(B) - The dosimeters at site S-5 were not recovered in September because the access road to this site was washed out by Hurricane Andrew. These dosimeters were recovered on 10-27-92, after the road was repaired. The uncorrected total net exposure rate for these dosimeters, including their transit to the lab in Orlando for analysis, was 5.4 ± 0.3 micro-R per hour. Control dosimeters were not available to accompany the field dosimeters back to the lab; however, ASSUMING a typical control dosimeter exposure rate, the corrected exposure rate for the time that these field dosimeters were at site S-5 is 5.3 ± 0.3 micro-R per hour.

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

Collection Date	Sample Site T51	T57	T58	T64	T72
07-07-92	<0.03	<0.03	<0.03	<0.03	<0.03
07-13-92	<0.02	<0.03	<0.02	<0.02	<0.02
07-20-92	<0.02	<0.02	<0.02	<0.02	<0.02
07-27-92	<0.02	<0.02	<0.02	<0.02	<0.02
08-04-92	<0.02	<0.02	<0.02	<0.02	<0.02
08-11-92	<0.03	<0.03	<0.03	<0.03	<0.03
08-18-92	<0.02	<0.02	<0.02	<0.03	<0.03
08-24-92	<0.05(A)	<0.05(B)	(C)	(D)	<0.04(A)
09-02-92	(E)	(E)	(E)	<0.02(D)	(E)
09-09-92	(E)	(E)	(E)	<0.03	(E)
09-17-92	(E)	(E)	<0.03(F)	<0.03	(E)
09-24-92	(E)	(E)	<0.05(G)	<0.02	<0.02
09-29-92	(E)	(E)	<0.02(H)	<0.03	<0.02

(A) - The filter cartridges from sites T51 and T72 were recovered on 09-02-92 after the sites were destroyed by Hurricane Andrew on 08-24-92. Both of these cartridges were found saturated with water.

(B) - The filter cartridge from site T57 was recovered on 09-02-92 after this site was destroyed by Hurricane Andrew on 08-24-92. This cartridge was found in a dry condition.

(C) - The filter cartridge from site T58 was NOT recovered after this site was destroyed by Hurricane Andrew on 08-24-92.

(D) - Site T64 was not visited in the week of 08-24-92 due to the impact of Hurricane Andrew. The cartridge which was installed on 08-17-92 was collected on 09-02-92. Based on the volume of air collected, this equipment is believed to have operated for essentially the entire two-week interval.

(E) - There were no samples from these sites due to the destruction caused by Hurricane Andrew.

(F) - This sample site has been re-established at the FP&L Wellness Center near the entrance to the Turkey Point Plant until the former location can be rebuilt. This new location is subject to a lot of pedestrian traffic and to lengthy power outages while other equipment is being worked on. This sample had a very low volume due to a low flowrate setting.

(G) - This sample had a low collected volume, and the gas meter had been knocked over onto its side.

(H) - This sample was found with an average air flowrate much lower than that measured at the end. A power outage is suspected to have occurred.

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

Collection Date	Sample Site T51	T57	T58	T64	T72
07-07-92	0.021 ± 0.002	0.021 ± 0.002	0.021 ± 0.002	0.021 ± 0.002	0.023 ± 0.002
07-13-92	0.015 ± 0.002	0.023 ± 0.003	0.018 ± 0.002	0.022 ± 0.002	0.016 ± 0.002
07-20-92	0.015 ± 0.002	0.013 ± 0.002	0.012 ± 0.002	0.013 ± 0.002	0.013 ± 0.002
07-27-92	0.016 ± 0.002	0.014 ± 0.002	0.017 ± 0.002	0.019 ± 0.002	0.018 ± 0.002
08-04-92	0.015 ± 0.002	0.012 ± 0.002	0.016 ± 0.002	0.016 ± 0.002	0.018 ± 0.002
08-11-92	0.011 ± 0.002	0.008 ± 0.002	*0.010 ± 0.002	0.009 ± 0.002	0.010 ± 0.002
08-18-92	0.010 ± 0.002	0.011 ± 0.002	*0.011 ± 0.002	0.008 ± 0.002	0.009 ± 0.002
08-24-92	(A)	(A)	(B*0.010 ± 0.002	(C)	(A)
09-02-92	(D)	(D)	(D)	(C0.010 ± 0.001	(D)
09-09-92	(D)	(D)	(D)	0.013 ± 0.002	(D)
09-17-92	(D)	(D)	(E0.016 ± 0.006	0.016 ± 0.002	(D)
09-24-92	(D)	(D)	<0.008(F)	0.008 ± 0.002	0.007 ± 0.001
09-29-92	(D)	(D)	(G0.011 ± 0.002	0.009 ± 0.002	0.010 ± 0.002
Means:	0.015 ± 0.001	0.015 ± 0.001	0.014 ± 0.001	0.014 ± 0.001	0.014 ± 0.001

* - NRC split samples.

(A) - The particulate filters from sites T51, T57, and T72 were NOT recovered after these sites were destroyed by Hurricane Andrew on 08-24-92.

(B) - The particulate filters from site T58 were not found on 09-02-92 when this site was first visited by HRS after it was destroyed by Hurricane Andrew on 08-24-92. However, both the HRS and NRC particulate filters were later found amidst the debris by FP&L employees who forwarded these filters to us.

(C) - Site T64 was not visited in the week of 08-24-92 due to the impact of the hurricane. The particulate filter which was installed on 08-17-92 was collected on 09-02-92. Based on the volume of air collected, this equipment is believed to have operated for essentially the entire two-week interval.

(D) - There were no samples from these sites due to destruction caused by Hurricane Andrew.

(E) - This sample site was re-established at the FP&L Wellness Center near the entrance to the Turkey Point Plant until the former location can be rebuilt. This new location is subject to a lot of pedestrian traffic and to lengthy power outages while other equipment is being worked on. This sample had a very low volume due to a low flow-rate setting.

(F) - This sample had a low collected volume, and the gas meter had been knocked over onto its side.

(G) - The average flowrate for this sample was much lower than that measured at the end of the sample. A power outage is suspected to have occurred.

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

Third Quarter, 1992

Sample Site	Be-7	K-40	Cs-134	Cs-137
T51	0.0847 ± 0.0174	<0.0298	<0.0021	<0.0023
T57	0.0731 ± 0.0167	<0.0377	<0.0017	<0.0013
T58	0.1027 ± 0.0146	<0.0258	<0.0010	<0.0015
T64	0.0985 ± 0.0106	<0.0162	<0.0012	<0.0009
T72	0.0875 ± 0.0078	<0.0156	<0.0009	<0.0006

3.a SURFACE WATER - (pCi/l)

Sample Site	Collection Date	H-3	K-40	Mn-54	Fe-59	Co-58	Co-60	Zn-65	Zr-95 Nb-95 (A)	I-131	Cs-134	Cs-137	Ba-140 La-140 (B)
T42	07-21-92	<141	317 ± 38	<4	<8	<3	<5	<7	<7	<5	<4	<4	<6
	08-18-92	<135	372 ± 41	<4	<8	<4	<5	<10	<5	<5	<4	<3	<6
	09-09-92	<151	91 ± 36	<5	<9	<3	<5	<6	<8	<7	<5	<4	<6
T67	07-21-92	<141	202 ± 34	<3	<8	<3	<5	<9	<6	<5	<3	<3	<4
	08-17-92	<135	232 ± 36	<3	<11	<3	<4	<9	<8	<5	<4	<4	<5
	09-09-92	<175	148 ± 36	<4	<10	<5	<6	<9	<9	<7	<4	<4	<7
T81	07-21-92	257 ± 50	253 ± 35	<3	<8	<3	<5	<10	<7	<6	<5	<5	<5
	08-14-92	288 ± 49	275 ± 37	<4	<7	<4	<5	<10	<6	<6	<4	<3	<5
	09-09-92	<159	203 ± 35	<3	<8	<4	<5	<9	<6	<7	<4	<4	<6

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

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

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

Sample Site	Collection Date	Be-7	K-40	Co-58	Co-60	Cs-134	Cs-137	Ra-226	Th-232
T42	07-10-92	379 ± 65	445 ± 95	<12	<14	<14	<13	761 ± 25	49 ± 20
T67	07-10-92	113 ± 29	262 ± 50	<6	<7	<8	<7	111 ± 9	54 ± 13
T81	07-09-92	337 ± 59	238 ± 57	<11	<9	<11	<9	431 ± 17	69 ± 18

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

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

4.a.2 FISH - Mixed Species - (pCi/kg, wet weight)

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

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

Sample Site	Collection Date	Be-7	K-40	I-131	Cs-134	Cs-137	Ra-226
T40	07-21-92	1016 ± 59	3344 ± 126	<9	<10	15 ± 5	43 ± 8
	08-17-92	1190 ± 64	2928 ± 125	<9	<8	44 ± 6	ND
	09-09-92	1268 ± 154	6618 ± 386	<35	<29	138 ± 19	ND
T41	07-21-92	1161 ± 72	3908 ± 152	<10	<9	172 ± 9	ND
	08-17-92	942 ± 63	3562 ± 142	<11	<9	157 ± 9	ND
	09-09-92	1235 ± 123	3040 ± 227	<25	<20	<25	ND
T67	07-21-92	1311 ± 67	3650 ± 145	<11	<10	21 ± 5	ND
	08-17-92	1899 ± 82	3581 ± 148	<11	<10	13 ± 4	ND
	09-09-92	422 ± 139	4988 ± 366	<38	<33	<51	ND

Note: Other species of green leafy vegetation were added to the Brazilian pepper for the samples collected on 09-09-92 because sufficient quantities of only Brazilian pepper were not available due to damage to the pepper trees caused by Hurricane Andrew.

ND - Non-detectable.

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

Fourth Quarter, 1992

Office of Radiation Control

Florida Department of Health
and Rehabilitative Services

TURKEY POINT SITE

Technical Specifications Sampling

Fourth Quarter, 1992

Sample Type	Collection Frequency	Locations Sampled	Number of Samples
1. Direct Radiation	Quarterly	22	38
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	2	2
4.a.2 Fish	Semiannually	2	2
4.b Food Products			
4.b.1 Broadleaf Vegetation	Monthly	3	10*
			Total: 191

* - Includes an NRC split sample.

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 - (micro-R/hour)

Each result is the average net response of two dosimeters.

Sample Site		Deployment Collection 09-16-92 12-16-92
N-2		6.5 ± 0.3
N-7	(A)	6.0 ± 0.3
N-10		5.6 ± 0.3
NNW-2		(B)
NNW-10		6.2 ± 0.3
NW-1		6.2 ± 0.3
NW-5		5.5 ± 0.3
NW-10		8.0 ± 0.4
WNW-10		6.9 ± 0.4
W-1		4.9 ± 0.3
W-5	(A)	5.8 ± 0.3
W-9		5.3 ± 0.3
WSW-8		5.4 ± 0.3
SW-1		6.2 ± 0.3
SW-8		(B)
SSW-5		(C)
SSW-10		5.5 ± 0.3
S-5	(D)	5.5 ± 0.3
S-10		5.8 ± 0.3
SSE-1		5.3 ± 0.3
SSE-10		5.1 ± 0.3
NNE-22		6.9 ± 0.4

(A) - These results are each based on a single dosimeter due to anomalous responses from the other dosimeters at these sites.

(B) - These dosimeters were missing when collection was attempted.

(C) - Due to access difficulties and reconstruction operations after Hurricane Andrew, dosimeters were not deployed at this site during this quarter.

(D) - Due to access difficulties and reconstruction operations after Hurricane Andrew, the dosimeters for the third quarter, 1992, were not recovered from this site until 10-27-92. The new dosimeters for the fourth quarter, 1992; were not deployed at this site until 10-30-92.

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

Collection Date	Sample Site T52	T58	T64	T71	T72
10-06-92	<0.04	<0.05	<0.04	<0.04	<0.04
10-13-92	<0.05	<0.05	<0.05	<0.05	<0.05
10-20-92	<0.03	<0.03	<0.03	<0.03(A)	<0.03
10-27-92	<0.03	<0.03	<0.04	<0.03	<0.04(B)
11-02-92	<0.04	<0.04	<0.04	<0.04	<0.04
11-10-92	<0.03	<0.03	<0.03	<0.03	<0.03
11-17-92	<0.03	<0.03	<0.03	<0.03(C)	<0.03
11-23-92	<0.02	<0.02	<0.02	<0.02	<0.02(D)
12-01-92	<0.01	<0.01	<0.01	<0.01	<0.01
12-07-92	<0.01	<0.01	<0.01	<0.01	<0.01
12-15-92	<0.01	<0.01	<0.01	<0.01	<0.01
12-21-92	<0.01	<0.01	<0.01	<0.01	<0.01
12-29-92	<0.01	<0.01	<0.01	<0.01	<0.01

(A) - This sample had a low collected volume due to a power outage. The equipment is estimated to have run for 141 hours out of the 170 total hours for this sampling interval.

(B) - The gas meter was laid flat during this sample interval with intentions to avoid having it fall over and strike the other equipment. It was discovered at the end of this sample that the gas meter does not operate properly when lying down. The air volume for this sample is estimated based on flow rate measurements.

(C) - This sample had a low collected volume due to a power outage. The equipment is estimated to have run for 143 hours out of the 167 total hours for this sampling interval.

(D) - This filter was found to be saturated with water when it was collected. This is believed to be due to inhalation of rain water into the sampling equipment. Improvements were made to the rain shield at this site after collection of this sample.

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

Supplementary air sample site T71 is now being temporarily used as a substitute for Technical Specifications site T51, which was destroyed by Hurricane Andrew.

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

Collection Date	Sample Site T52	T58	T64	T71	T72
10-06-92	0.005 ± 0.002	0.004 ± 0.002	0.009 ± 0.002	0.006 ± 0.002	0.005 ± 0.002
10-13-92	0.013 ± 0.002	0.011 ± 0.002	0.009 ± 0.002	0.010 ± 0.002	0.009 ± 0.002
10-20-92	0.020 ± 0.002	0.017 ± 0.002	0.017 ± 0.002	(A0.016 ± 0.002	0.014 ± 0.002
10-27-92	0.025 ± 0.002	0.020 ± 0.002	0.025 ± 0.003	0.019 ± 0.002	(B0.019 ± 0.002
11-02-92	0.011 ± 0.002	0.010 ± 0.002	0.015 ± 0.002	0.007 ± 0.002	0.017 ± 0.002
11-10-92	0.009 ± 0.002	0.008 ± 0.002	0.012 ± 0.002	0.008 ± 0.002	(C0.010 ± 0.002
11-17-92	0.011 ± 0.002	0.012 ± 0.002	0.010 ± 0.002	(D0.011 ± 0.002	0.012 ± 0.002
11-23-92	0.006 ± 0.002	0.004 ± 0.002	0.010 ± 0.002	0.003 ± 0.001	<0.005(E)
12-01-92	0.012 ± 0.002	0.016 ± 0.002	0.015 ± 0.002	0.010 ± 0.002	0.010 ± 0.002
12-07-92	0.030 ± 0.003	0.018 ± 0.003	0.026 ± 0.003	0.020 ± 0.002	0.024 ± 0.003
12-15-92	0.015 ± 0.002	0.013 ± 0.002	0.014 ± 0.002	0.016 ± 0.002	0.016 ± 0.002
12-21-92	0.045 ± 0.003	0.014 ± 0.002	0.027 ± 0.002	0.009 ± 0.002	0.011 ± 0.002
12-29-92	0.016 ± 0.002	0.007 ± 0.001	0.009 ± 0.002	0.007 ± 0.001	0.006 ± 0.001
Means:	0.017 ± 0.001	0.012 ± 0.001	0.015 ± 0.001	0.011 ± 0.001	0.013 ± 0.001

* - NRC split samples were not collected this quarter due to the impact of Hurricane Andrew.

(A) - This sample had a low collected volume due to a power outage. The equipment is estimated to have run for 141 hours out of the 170 total hours for this sampling interval.

(B) - The gas meter was laid flat during this sample interval with intentions to avoid having it fall over and strike the other equipment. It was discovered at the end of this sample that the gas meter does not operate properly when lying down. The air volume for this sample is estimated based on flow rate measurements.

(C) - This particulate filter had a "washed out" appearance. This is believed to be due to rainwater striking the filter.

(D) - This sample had a low collected volume due to a power outage. The equipment is estimated to have run for 143 hours out of the 167 total hours for this sampling interval.

(E) - This filter was found to be saturated with water when it was collected. This is believed to be due to inhalation of rain water into the sampling equipment. Improvements were made to the rain shield at this site after collection of this sample.

Supplementary air sample site T52 is now being temporarily used as a substitute for Technical Specifications site T57, which was destroyed by Hurricane Andrew. Supplementary air sample site T71 is now being temporarily used as a substitute for Technical Specifications site T51, which was destroyed by Hurricane Andrew.

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

Fourth Quarter, 1992

Sample Site	Be-7	K-40	Cs-134	Cs-137
T52	0.1225 ± 0.0121	<0.0171	<0.0010	<0.0009
T58	0.0963 ± 0.0102	<0.0106	<0.0013	<0.0006
T64	0.1289 ± 0.0127	<0.0169	<0.0013	<0.0010
T71	0.1027 ± 0.0112	<0.0186	<0.0010	<0.0007
T72	0.1097 ± 0.0109	<0.0140	<0.0009	<0.0009

Supplementary air sample site T52 is now being temporarily used as a substitute for Technical Specifications site T57, which was destroyed by Hurricane Andrew. Supplementary air sample site T71 is now being temporarily used as a substitute for Technical Specifications site T51, which was destroyed by Hurricane Andrew.

3.a SURFACE WATER - (pCi/l)

Sample Site	Collection Date	H-3	K-40	Mn-54	Fe-59	Co-58	Co-60	Zn-65	Zr-95 Nb-95 (A)	I-131	Cs-134	Cs-137	Ba-140 La-140 (B)
T42	10-27-92	<123	291 ± 39	<5	<7	<4	<4	<8	<9	<6	<5	<4	<7
	11-19-92	<131	106 ± 28	<4	<7	<3	<5	<7	<7	<6	<5	<4	<5
	12-11-92	<129	209 ± 33	<3	<9	<4	<5	<8	<7	<6	<4	<4	<5
T67	10-27-92	<123	249 ± 37	<3	<10	<4	<4	<9	<7	<7	<3	<4	<4
	11-19-92	<131	204 ± 31	<4	<9	<4	<4	<10	<7	<6	<3	<4	<6
	12-11-92	<129	246 ± 38	<4	<7	<4	<4	<8	<8	<7	<4	<5	<6
T81	10-27-92	<123	315 ± 35	<5	<8	<3	<6	<9	<5	<6	<5	<4	<7
	11-19-92	<131	275 ± 37	<4	<7	<4	<4	<10	<7	<9	<4	<4	<7
	12-11-92	129 ± 42	351 ± 38	<4	<9	<4	<5	<8	<7	<8	<4	<3	<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.

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

Sample Site	Collection Date	K-40	Mn-54	Fe-59	Co-58	Co-60	Zn-65	Cs-134	Cs-137	Ra-226	Ra-228
T67	11-03-92	2182 ± 247	<30	<53	<27	<29	<65	<29	<31	ND	ND
T81	10-21-92	1782 ± 141	<13	<34	<13	<15	<26	<14	<13	215 ± 16	73 ± 34

4.a.2 FISH - Mixed Species - (pCi/kg, wet weight)

Sample Site	Collection Date	K-40	Mn-54	Fe-59	Co-58	Co-60	Zn-65	Cs-134	Cs-137	Ra-226	Ra-228
T67	12-10-92	2975 ± 147	<9	<27	<12	<16	<25	<12	<13	ND	ND
T81	12-10-92	2662 ± 130	<9	<25	<8	<13	<22	<10	17 ± 4	ND	ND

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

Sample Site	Collection Date	Be-7	K-40	I-131	Cs-134	Cs-137
T40	10-26-92(A)	573 ± 57	4912 ± 174	<13	<12	48 ± 7
	*11-20-92(A)	384 ± 48	2702 ± 169	<25	<12	<12
	12-11-92	929 ± 69	3238 ± 146	<13	<10	43 ± 5
T41	10-26-92(A)	1197 ± 78	4926 ± 185	<12	<11	73 ± 8
	11-20-92(A)	1004 ± 93	4234 ± 207	<32	<13	37 ± 6
	12-11-92(A)	634 ± 114	3351 ± 249	<35	<23	100 ± 15
T67	10-27-92(A)	820 ± 67	5248 ± 185	<15	<10	<12
	11-19-92	1229 ± 64	4727 ± 150	<20	<9	<10
	12-11-92	781 ± 61	4375 ± 170	<18	<10	14 ± 6

* - NRC split sample. ND - Non-detectable.

(A) - The Brazilian pepper for these samples was supplemented with mixed species of green leafy vegetation due to a lack of sufficient Brazilian pepper after Hurricane Andrew.

1992
ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT
TURKEY POINT PLANT, UNITS 3 & 4

ATTACHMENT C

RESULTS FROM THE INTERLABORATORY

COMPARISON PROGRAM 1992

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

January through June, 1992

Media	Nuclide	Collection Mon	Day	Yr	EPA Known	Units	Normal. Range	Mean of Analyses	N.D.K.	Action Level
FILTER	Alpha	03	27	92	7	pCi/F	0.118	9.33	0.81	
FILTER	Beta	03	27	92	41	pCi/F	0.236	41.00	0.00	
FILTER	Cs-137	03	27	92	10	pCi/F	0.000	66.00	19.40	1
FILTER	Sr-90	03	27	92	15	pCi/F	0.236	12.67	-0.81	
MILK	I-131	04	24	92	78	pCi/L	0.148	79.33	0.29	
MILK	Cs-137	04	24	92	39	pCi/L	0.354	42.33	1.15	
MILK	K	04	24	92	1710	mg/L	0.453	1630.67	-1.60	
MILK	Sr-89	04	24	92	38	pCi/L	0.591	17.00	-7.27	2
MILK	Sr-90	04	24	92	29	pCi/L	0.827	31.33	0.81	
WATER	Alpha	01	31	92	30	pCi/L	0.148	23.00	-1.52	
WATER	Alpha	05	15	92	15	pCi/L	0.236	18.67	1.27	
WATER	Beta	01	31	92	30	pCi/L	0.354	35.67	1.96	
WATER	Beta	05	15	92	44	pCi/L	0.236	52.00	2.77	
WATER	Co-60	02	14	92	40	pCi/L	0.473	40.67	0.23	
WATER	Co-60	06	05	92	20	pCi/L	0.000	20.00	0.00	
WATER	Zn-65	02	14	92	148	pCi/L	0.197	149.00	0.12	
WATER	Zn-65	06	05	92	99	pCi/L	0.295	103.00	0.69	
WATER	Ru-106	02	14	92	203	pCi/L	0.059	194.67	-0.72	
WATER	Ru-106	06	05	92	141	pCi/L	0.253	138.00	-0.37	
WATER	Ba-133	02	14	92	76	pCi/L	0.148	73.00	-0.65	
WATER	Ba-133	06	05	92	98	pCi/L	0.177	94.67	-0.58	
WATER	Cs-134	02	14	92	31	pCi/L	0.236	29.00	-0.69	
WATER	Cs-134	06	05	92	15	pCi/L	0.118	14.33	-0.23	
WATER	Cs-137	02	14	92	49	pCi/L	0.236	51.33	0.81	
WATER	Cs-137	06	05	92	15	pCi/L	0.118	15.33	0.12	
WATER	H-3	02	21	92	7904	pCi/L	0.202	8043.33	0.31	
WATER	H-3	06	19	92	2125	pCi/L	0.160	2235.67	0.55	
WATER	I-131	02	07	92	59	pCi/L	0.098	60.33	0.38	
WATER	Sr-89	01	17	92	51	pCi/L	5.396	27.00	-8.31	3
WATER	Sr-89	05	08	92	29	pCi/L	0.236	27.00	-0.69	
WATER	Sr-90	01	17	92	20	pCi/L	0.945	24.33	1.50	
WATER	Sr-90	05	08	92	8	pCi/L	0.118	7.67	-0.12	

NOTES:

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

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

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

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

ACTION LEVEL:

(1) Cause: An incorrect efficiency file was used to calculate the results.
Corrective Action: Check the final printout from the gamma spectrometer more carefully.

(2) Cause: An incorrect date for beginning of the yttrium ingrowth was used in the calculations.
Corrective Action: Point out to the new chemist the significance of the ingrowth date and stress its importance in the calculation of the data.

(3) Cause: A short term glitch in the proportional counter produced very erroneous data.
Corrective Action: Check the proportional counter printout for obvious glitches.

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

July through December, 1992

Media	Nuclide	Collection Mon	Day	Yr	EPA Known	Units	Normal. Range	Mean of Analyses	N.D.K.	Action Level
FILTER	Alpha	08	28	92	30	pCi/F	0.074	33.33	0.72	
FILTER	Beta	08	28	92	69	pCi/F	0.059	72.67	0.64	
FILTER	Cs-137	08	28	92	18	pCi/F	0.000	21.00	1.04	
FILTER	Sr-90	08	28	92	25	pCi/F	0.000	22.00	-1.04	
MILK	I-131	09	25	92	100	pCi/L	0.059	97.33	-0.46	
MILK	Cs-137	09	25	92	15	pCi/L	0.236	16.00	0.35	
MILK	K	09	25	92	1750	mg/L	0.262	1660.00	-1.77	
MILK	Sr-89	09	25	92	15	pCi/L	0.118	10.67	-1.50	
MILK	Sr-90	09	25	92	15	pCi/L	0.118	11.33	-1.27	
WATER	Alpha	09	18	92	45	pCi/L	0.107	52.00	1.10	
WATER	Beta	09	18	92	50	pCi/L	0.709	47.00	-1.04	
WATER	Co-60	10	09	92	10	pCi/L	0.118	10.33	0.12	
WATER	Zn-65	10	09	92	148	pCi/L	0.158	152.00	0.46	
WATER	Ru-106	10	09	92	175	pCi/L	0.492	167.33	-0.74	
WATER	Ba-133	10	09	92	74	pCi/L	0.253	71.00	-0.74	
WATER	Cs-134	10	09	92	8	pCi/L	0.118	6.67	-0.46	
WATER	Cs-137	10	09	92	8	pCi/L	0.118	8.33	0.12	
WATER	H-3	10	23	92	5962	pCi/L	0.078	5584.67	-1.10	
WATER	I-131	08	07	92	45	pCi/L	0.098	43.67	-0.38	
WATER	Sr-89	09	11	92	20	pCi/L	0.236	14.33	-1.96	
WATER	Sr-90	09	11	92	15	pCi/L	0.118	10.67	-1.50	

NOTES:

Normal.: Normalized range. As defined in the "Environmental Range Radioactivity Laboratory Intercomparison Studies Program Fiscal Year 1981 - 1982", Environmental Monitoring Systems Laboratory, U. S. Environmental Agency, P. O. Box 93478, Las Vegas, Nevada, 89193-3478. EPA-600/4-91004, February, 1981.

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

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

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

Action Level: None.