May 15, 2024

L-2024-082
10 CFR 50.36b

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

Re: Turkey Point Nuclear Plant, Units 3 and 4
Docket Nos. 50-250 and 50-251

2023 Annual Radiological Environmental Operating Report

Enclosed is the 2023 Annual Radiological Environmental Operating Report for Turkey Point Units 3 and 4, as required by Technical Specification 5.6.1.

If you have any questions regarding this submittal, please contact Kenneth Mack at 561-904-3635.

Sincerely,

for

Paul Rasmus
General Manager, Regulatory Affairs
Florida Power & Light Company

Enclosure: Annual Radiological Environmental Operating Report (2023)

cc: USNRC Regional Administrator, Region II
USNRC Project Manager, St. Lucie Nuclear Plant
USNRC Resident Inspector, St. Lucie Nuclear Plant

ENCLOSURE

Annual Radiological Environmental Operating Report (2023)

(55 pages follow)

Plant: Turkey Point Nuclear Units 3 & 4	Page 1 of 55
	YEAR: 2023
Docket NOS Number: 50-250, 50-251	
Annual Radiological Environmental Operating Report	

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1.0 EXECUTIVE SUMMARY

1.1 Radiological Environmental Monitoring Program

The data obtained through the Turkey Point Radiological Environmental Monitoring Program (REMP) 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, 2023 to December 31, 2023. Additionally, supplemental samples collected by the State of Florida, Department of Health (DOH), do not indicate adverse trends in the radiological environment.

All required lower limit of detection (LLD) capabilities were achieved in all sample analyses during 2023, as required by the Turkey Point Units 3 & 4 ODCM. No measurable levels of radiation above baseline levels attributable to Turkey Point Nuclear operation were detected in the vicinity of PTN. The 2023 REMP thus substantiated the adequacy of source control and effluent monitoring at Turkey Point Nuclear with no observed impact of plant operations on the environment.

Turkey Point Nuclear established the REMP prior to the station's becoming operational to provide data on background radiation and radioactivity normally present in the area. PTN has continued to monitor the environment by sampling air, water, sediment, crustacea, fish and broadleaf vegetation, as well as measuring direct radiation. PTN also samples milk if milk-producing animals used for human consumption are present within five miles (8 km) of the plant.

The REMP includes sampling indicator and control locations within an approximate 20-mile radius of the plant. The REMP utilizes indicator locations near the site to show any increases or buildup of radioactivity that might occur due to station operation and control locations farther away from the site to indicate the presence of only naturally occurring radioactivity. PTN personnel compare indicator results with control results to assess any impact PTN operation might have had on the surrounding environment.

In 2023, environmental samples were collected for radiological analysis. The results of indicator locations were compared with control locations. It was concluded that no significant relationship exists between PTN operation and effect on the area around the plant. The review of 2023 data showed radioactivity levels in the environment were undetectable in many locations and near background levels in significant pathways.

Radiological environmental monitoring for the Turkey Point Plant is conducted by the State of Florida, Department of Health DOH. The DOH personnel collect and analyze samples, with analysis taking place at the DOH Environmental Radiation Control Laboratory in Orlando, Florida. The 2023 Radiological Surveillance Quarterly Report data is provided by the State of Florida Bureau of Radiation Control and is presented in Attachment 2. The State of Florida is not involved in the (Industry Initiative) ground water monitoring program.

1.2 Reporting Levels

No samples equaled or exceeded reporting levels.

1.3 Sample Deviations

During 2023, environmental sampling was performed for seven media types addressed in the ODCM and for direct radiation. A total of 802 samples of the 802 scheduled were obtained. Of the scheduled samples, 100 percent were collected and analyzed in accordance with the requirements specified in the ODCM. Attachment 1 contains the listing of sample deviations and actions taken.

1.4 Program Modifications

- Revision 10 of procedure 0-NCAP-103, the Secondary System Groundwater Radiochemistry was approved and issued on 03/27/23. The revision change incorporated the new improved technical specifications into relevant sections of the procedure.

2.0 INTRODUCTION

This report is submitted pursuant to Specification 5.6.1 of Turkey Point Units 3 & 4 Technical Specifications. The Annual Radiological Environmental Operating Report provides information, summaries and analytical results pertaining to the REMP 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.

2.1 Radiological Environmental Monitoring Program

The REMP for the Turkey Point Plant is conducted pursuant to Control 5.1 of Turkey Point Unit 3 & 4 ODCM.

A. Purpose

The purpose of the REMP 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 REMP 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.

Sample Locations, Types and Frequencies:

- Direct radiation gamma exposure rate is monitored continuously at 23 locations by thermoluminescent dosimeters (TLDs). TLDs are collected and analyzed quarterly.

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

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

- 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.

- 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.

- 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.

Table 1 through 4 provides specific information pertaining to sample locations, types, and frequencies.

Note: Ground Water Protection, NEI Initiative: The program and results are described in Attachment 4.

2.2 Pathways Monitored

The airborne, direct radiation, waterborne and ingestion pathways are monitored as required by Control 5.1 of Turkey Point Unit 3 & 4 ODCM. A description of the REMP utilized to monitor the exposure pathways is described in the attached Tables and Figures.

Section 4.0 of this report provides a discussion of 2023 sampling results with Section 5.0 providing a summary of results for the monitored exposure pathways.

2.3 Land Use Census

PTN conducts a land use census, as required by Turkey Point Units 3 & 4 ODCM. The purpose of this census is to identify changes in uses of land within five miles of PTN that would require modifications to the REMP and the Offsite Dose Calculation Manual (ODCM). Section 4.5 on the report contains a narrative on the results of the 2023 land use census.

3.0 RADIOLOGICAL ENVIRONMENTAL SAMPLING PROGRAM REQUIREMENTS

Table 1: Exposure Pathway – Airborne

Requirement	Sample Point Description Distance and Direction	Sampling and Collection Frequency	Type and Frequency Of Analyses
RADIOIODINE AND PARTICULATES 5 sample indicator locations and 1 sample control location.	• **T51 (2 mi. NNW)** – Entrance Area to Biscayne National Park. • **T57 (4 mi. NW)** – Siren Pole 27, intersection of SW 112th Ave and SW 304th St. • **T58 (1 mi. NW)** – Turkey Point Entrance Road. • **T72 (<1 mi. WSW)** – Just before entrance to Land Utilizations access gate. • **T41 (1.6 mi. WNW)** – Palm Dr. West of FPL Satellite School near the site boundary. • **T64* (22 mi. NNE)** – Natoma Substation, 2475 SW 16 Ct.	Continuous sampler operation with sample collection weekly or more frequently if required by dust loading.	• Radioiodine Canisters – I-131 analysis weekly. • Air Particulate – Gross beta radioactivity analysis following filter change. • Air Particulate – Gamma Isotopic analysis quarterly.

*Denotes Control sample

Table 2: Exposure Pathway – Direct Radiation

Requirement	Sample Point Description Distance and Direction	Sampling and Collection Frequency	Type and Frequency Of Analyses
TLDS 22 indicator sample locations and 1 control sample location.	• **N-2 (2 mi N) –** Convoy Point • **N-7 (7.1 mi N)** – Black Point Marina parking lot on siren pole • **N-10 (10.6 mi N)** – Old Cutler Rd across from Perdue Med. Ctr. On siren pole. • **NNW-2 (2.2 mi NNW)** – East End of N. Canal Dr. on siren pole E. of 117th Ave. • **NNW-10 (9.2 mi NNW)** – Bailes Rd. E. of US 1 on siren pole. • **NW-1 (1.4 mi NW)** – Turkey Point Entrance Rd. • **NW-5 (3.9 mi NW)** – Intersection of Mowry Dr. and 117th Ave. on siren pole. • **NW-10 (10 mi NW)** – On Newtown Rd. N. of Coconut Palm Drive on siren pole. • **W-5 (5.3 mi W)** – Palm Drive 0.3 mi west of Tallahassee Rd. • **WNW-10 (9.8 mi WNW)** – NW 2nd Ave. S. of Campbell Dr. at Hmstd. Middle School on siren pole. • **W-1 (0.7 mi W)** – On site north side of Discharge Canal.	Quarterly	• mR exposure quarterly.

Table 2: Exposure Pathway – Direct Radiation

Requirement	Sample Point Description Distance and Direction	Sampling and Collection Frequency	Type and Frequency Of Analyses
TLDS (Cont'd) 22 indicator sample locations and 1 control sample location.	• **W-9 (8.6 mi W)** – Card Sound Rd. 0.6 mi SSE of US 1 on siren pole. • **WSW-8 (7.8 mi WSW)** – Card Sound Rd. 3.4 mi. SSE of US 1 on siren Pole. • **SW-1 (1 mi SW)** – On site near land utilization offices. • **SSE-1 (1 mi SSE)** – On site South East side of cooling canals at "Turtle Point". • **SW-8 (8 mi SW)** – Card Sound Rd. 5 mi. SSE of US 1 at entrance to Navy facility. • **SSW-5 (5 mi SSW)** – On site, southwest corner of cooling canals. • **SSW-10 (10 mi SSW)** – At Card Sound Bridge on siren pole. • **S-5 (5 mi S)** – On site, south east end of cooling canals. • **S-10 (10 mi S)** – Card Sound Road at Steamboat Creek. • **SSE-10 (9 mi SSE)** – Ocean Reef. • **NNE-22* (22.6 mi NNE)** – Natoma Substation. • **WNW2 (1.6 mi WNW)** – Palm Dr. West of FPL Satellite School, near Site Boundary.	Quarterly	• mR exposure quarterly.

*Denotes Control sample

Table 3: Exposure Pathway – Waterborne

Requirement	Sample Point Description Distance and Direction	Sampling and Collection Frequency	Type and Frequency Of Analyses
SURFACE WATER 2 indicator sample locations and 1 control sample location.	• **T42 (<1 mi. ENE)** – Biscayne Bay at Turkey Point. • **T81 (6 mi. S)** – Card Sound, near Mouth of Old Discharge Canal. • **T67* (13-18 mi. N, NNE)** – Near Biscayne Bay, Vicinity of Cutler Plant, North to Matheson Hammock Park	Grab samples Monthly	• Gamma isotopic analysis and tritium analysis monthly.
SEDIMENT FROM SHORELINE 2 indicator sample locations and 1 control sample location. Locations coincide with the surface water sample locations.	• **T42 (<1 mi ENE)** – Biscayne Bay at Turkey Point. • **T81 (6 mi. S)** – Card Sound, near Mouth of Old Discharge Canal. • **T67* (13-18 mi. N, NNE)** – Near Biscayne Bay, Vicinity of Cutler Plant, North to Matheson Hammock Park	Semi-annually	• Gamma isotopic analysis semi-annually.

*Denotes Control sample

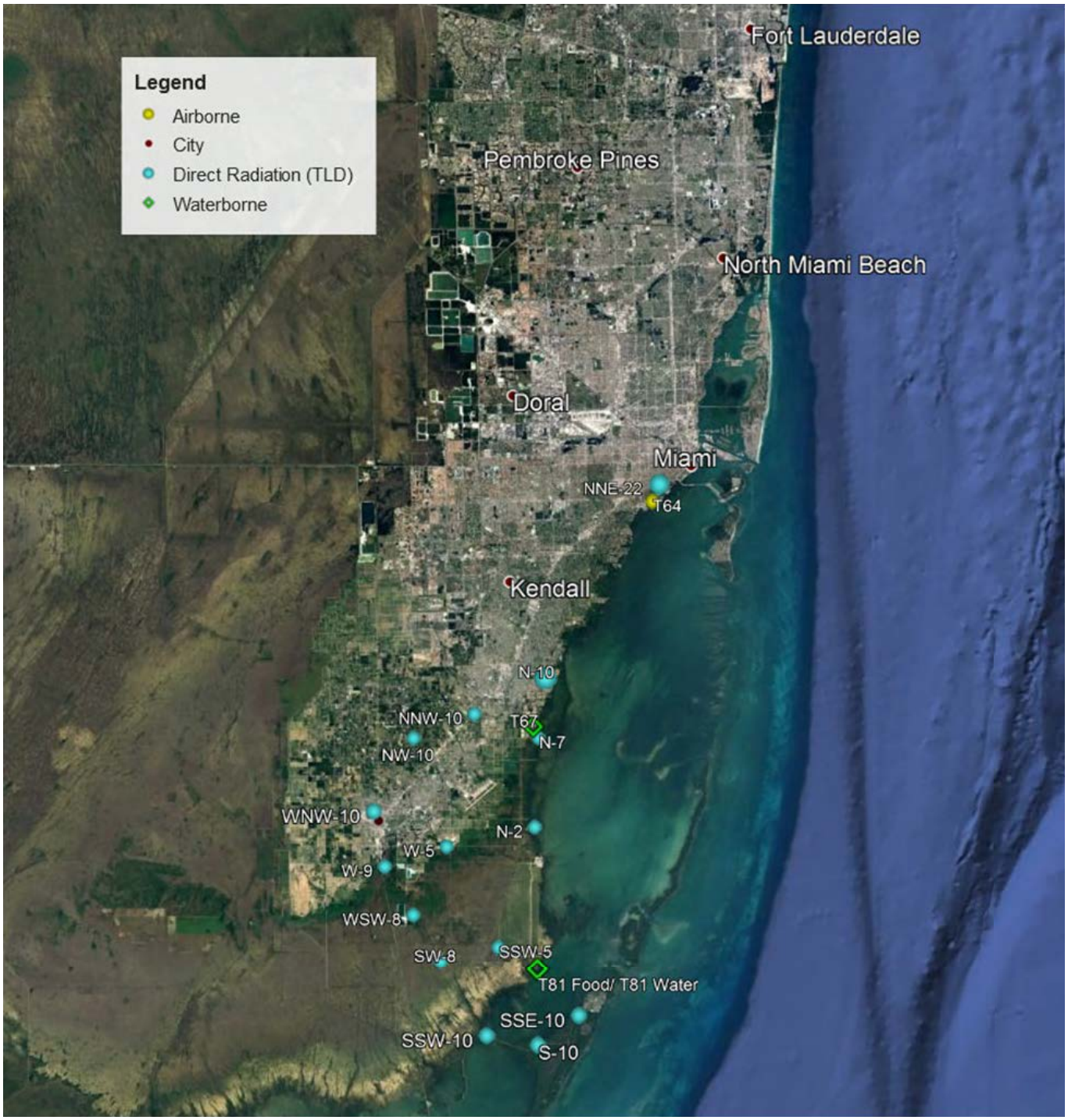
Table 4: Exposure Pathway – Ingestion

Requirement	Sample Point Description Distance and Direction	Sampling and Collection Frequency	Type and Frequency Of Analyses
CRUSTACEA AND FISH • 1 indicator sample location and 1 control sample location.	• **T81 (6 mi. S)** – Card Sound, near Mouth of Old Discharge Canal. • **T67* (13-18 mi. N, NNE)** – Near Biscayne Bay, Vicinity of Cutler Plant, North to Matheson Hammock Park	Semi-annually	Gamma isotopic analysis semi-annually.
BROADLEAF VEGATATION • 2 indicator sample locations and 1 control sample location.	• **T40 (3 mi W)** – South of Palm Dr. on S.W. 117th Street Extension. • **T41 (2 mi WNW)** – Palm Dr. West of FPL Satellite School near the site boundary. • **T67* (13-18 mi. N, NNE)** – Near Biscayne Bay, Vicinity of Cutler Plant, North to Matheson Hammock Park	Monthly	Gamma isotopic analysis monthly.

*Denotes Control sample

Figure 1: Sample Collection Sites – Near Station

Figure 2: Sample Collection Sites – Distant from Station



4.0 INTERPRETATION AND TRENDS OF RESULTS

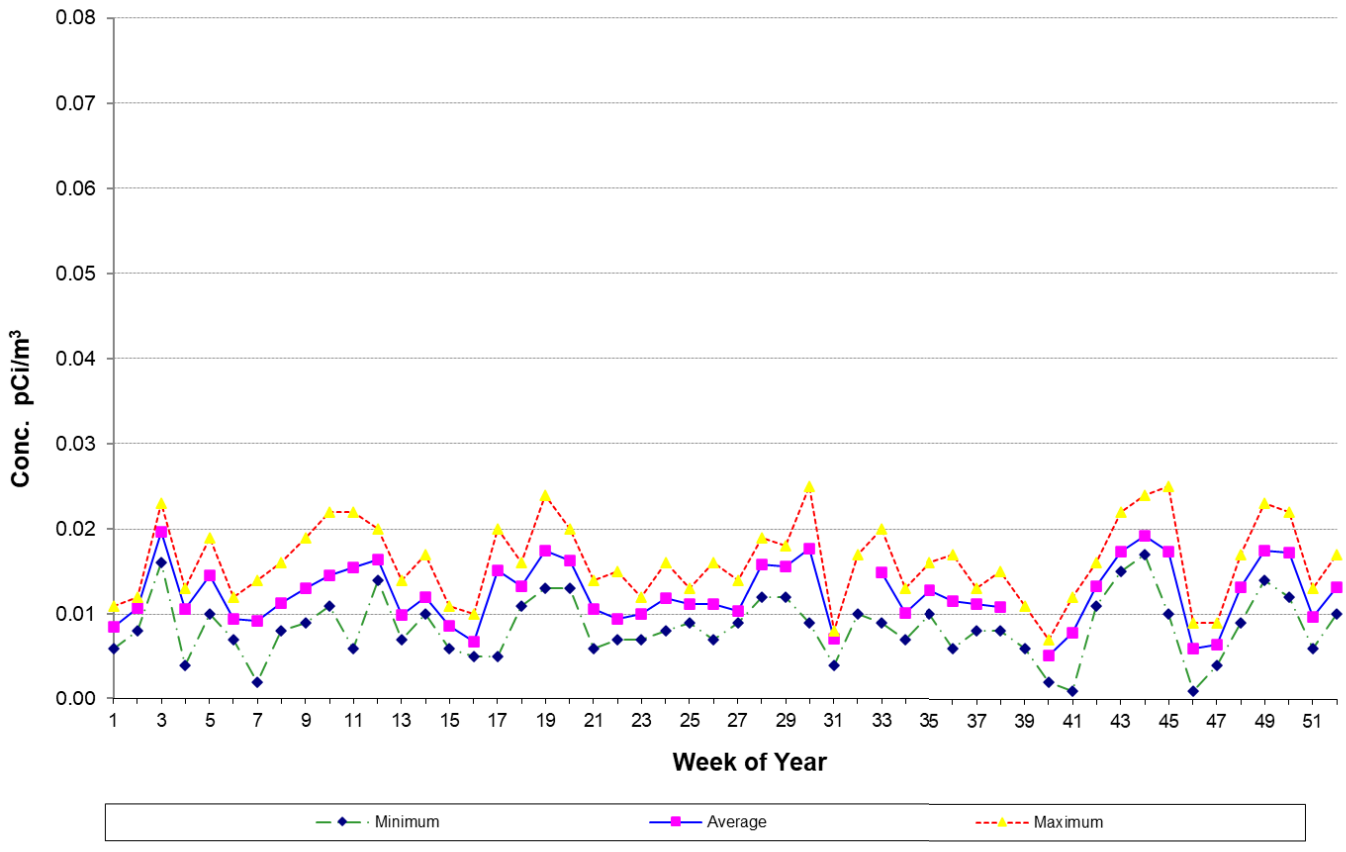
4.1 Air Particulate and Radioiodine Sample Results

In 2023 there were no samples above the LLD for I-131. Indicator gross beta air particulate results for 2023 were comparable to results obtained from 2020-2022 of the operational REMP. Results are reported in picocuries per cubic meter (pCi/m^3).

Monitoring Period	Result
2020 – 2022 (Minimum Value)	0.001
2023 Average Value	0.012
2020 – 2022 (Maximum Value)	0.029

Gross beta activity is attributed to naturally occurring radionuclides. Table 6, which include gross beta concentrations and provide a comparison of the indicator and control means and ranges emphasizes the consistent trends seen in this pathway to support the presence of naturally occurring activity. Figure 3 is a comparison of all the weekly Gross Beta results for 2023.Therefore, it can be concluded that the airborne pathway continues to be unaffected by Turkey Point Nuclear operations.

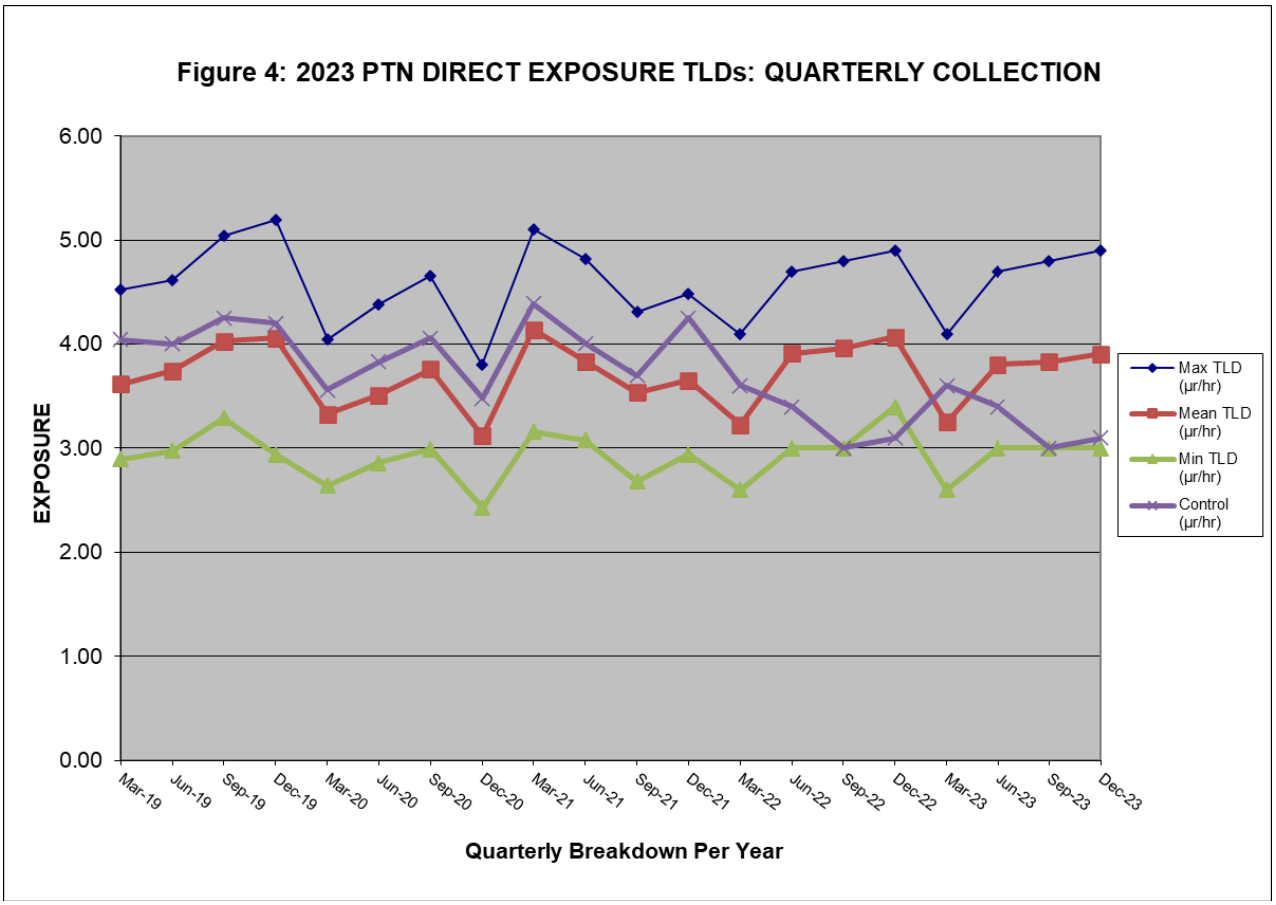
Figure 3: Turkey Point 2023 REMP
Gross Beta in Air, pCi/m^3



4.2 Thermoluminescent Dosimetry (TLD) Sample Results

Turkey Point Nuclear reports rely on comparison of the indicator locations to the control as a measure of plant impact. Turkey Point Nuclear's comparison of the indicator to the control, as seen in Table 6, identified no noticeable trend that would indicate that the ambient radiation levels are being affected by plant operations. In addition, the quarterly indicator averages shown in the TLD radiation dose comparison graph below shows the 2023 indicator results are comparable to control location results. Overall, Turkey Point Nuclear concluded that the ambient radiation levels are not being affected by plant operations.

Figure 4: 2023 PTN DIRECT EXPOSURE TLDs: QUARTERLY COLLECTION



4.3 Waterborne Sample Results

The results for 2023 surface water samples were below the ODCM-required LLD, in one of the indicator samples tritium was noted.

4.3.1 Surface Water Results

Samples were collected from two indicator and one control location and analyzed for gamma radionuclides and tritium. Tritium was detected in 1 out of 24 indicator location samples with a concentration of 91 pCi/L which is consistent with results seen in previous operational years. There were no plant related gamma radionuclides detected in any of the control or indicator location samples. Therefore, the operation of Turkey Point Nuclear had no definable impact on this waterborne pathway during 2023.

4.3.2 Shoreline Sediment Sample Results

Sediment samples were collected from two indicators and one control location in 2023 and analyzed for gamma radionuclides. Plant related gamma radionuclides were below the LLD limits at both indicator and control locations. Turkey Point Nuclear operations had no significant impact on the environment or public by this waterborne pathway.

4.4 Ingestion Sample Results

4.4.1 Crustacea and Fish Sample Results

Crustacea and Fish samples were collected from one indicator and one control location and analyzed for gamma radionuclides. In 2023, plant related gamma radionuclides were below detectable limits which are consistent with the results seen in previous operational years. Therefore, based on these measurements, Turkey Point Nuclear operations had no significant radiological impact upon the environment or public by this ingestion pathway.

4.4.2 Broad Leaf Vegetation Sample Results

The REMP had detected radionuclides prior to 1990 in vegetation that are attributable to other sources. These include the radioactive plume release due to reactor core degradation at Chernobyl Nuclear Power Plant in 1986 and atmospheric weapons testing.

In 2023, Broad Leaf Vegetation samples were collected from two indicator and one control locations and analyzed for gamma radionuclides. Cs-137 was detected in samples collected from the indicator and control locations at concentrations consistent with previous years. This activity identified could be attributed to weapons fallout testing 30-40 years ago and the reactor accident at Chernobyl. Therefore, based on these measurements, Turkey Point Nuclear operations had no significant radiological impact upon the environment or public by this ingestion pathway.

4.5 Land Use Census Results

The latest land use census (performed in 2023) did not identify any new locations that yielded a calculated dose or dose commitment greater than those currently calculated (see Table 5).

The land use census identified no changes in the new resident census.

There were no changes in the milk (cows/goats) or garden census in 2023.

Table 5: Land Use Census –2023 Nearest Residence, Garden, and Milk Animal Within Five Miles

SECTOR	NEAREST RESIDENCE/BUSINESS	NEAREST GARDEN (A)	NEAREST MILK ANIMAL
N	1.9 mi @ 349° 1.98 mi @ 349° 2.0 mi @ 354°	*	*
NNE	*	*	*
NE	*	*	*
ENE	*	*	*
E	*	*	*
ESE	*	*	*
SE	*	*	*
SSE	*	*	*
S	*	*	*
SSW	*	*	*
SW	*	*	*
WSW	*	*	*
W	*	*	*
WNW	1.7 mi @ 302° 3.7 mi @ 302°	4.5 mi @ 303° 6.0 mi @ 295°	*
NW	3.6 mi @ 304° 3.7 mi @ 311° 3.8 mi @ 316° 3.9 mi @ 314°	*	*
NNW	4.4 mi @ 333° 4.7 mi @ 328°	4.4 mi @ 332° 4.7 mi @ 328°	*

(A) - Only gardens with an estimated total area of 500 square feet, or more, and producing green leafy vegetables are considered.

* - No suitable sites were located within a five-mile range.

TURKEY POINT RESIDENCE SURVEY RESULTS

July- October 2023

Sector	Range Bearing	Nearest Residence/Business Location
N (A)	1.9 miles 349°	Homestead Bayfront Park complex. Contact is Jim Wyath. Office hours are 8:30 to 4:30, 7 days a week. Some occasional overnight recreational occupancy (up to 4 nights) on boats at the marina. Approximately 10 workers, 7 days a week, hours and numbers vary. Some summer weekends can see 1000+ visitors. There is always someone here 24 hours with more workers in the summer than the rest of the year (February thru September have the highest peak of workers). LaPlaya restaurant is open at the park weekdays from 11 am to 8:30 pm with 8 to 10 employees. Weekends open till 10 pm and may have up to 15 employees. N25° 27.683' W80° 20.200'.
N (B)	1.98 miles 349°	South Glade Outfitters. Located on opposite side of building from office of Homestead Bayfront Park. Manager is Robert and have 2-3 employees. Weekdays 7 am to 5 pm, Fridays till 6 pm. Weekends: 7 am – 6 pm. Hours may vary depending on weather. N25° 27.767' W80° 20.206'.
N (C)	2.0 miles 354°	Biscayne National Park at Convoy Point. Open 7 am to 5:30 pm everyday. There are 65 employees including volunteers and individuals at the institute. The one ranger and two seasonal employees are there all year. There are about 500,000 visitors (more including boaters) per year. Contacts include: Michelle Penick, Chief of Facilities, J. Ernest Jutte, Chief of Administration, 305-242-7721 (office) 202-438-6636 (mobile), and Cindy Holl (administrator) 239-695-1114. N25° 27.817' W80° 20.067'.
NNE	No residences were located within a five-mile range.	
NE	No residences were located within a five-mile range.	
ENE	No residences were located within a five-mile range.	
E	No residences were located within a five-mile range.	
ESE	No residences were located within a five-mile range.	
SE	No residences were located within a five-mile range.	
SSE	No residences were located within a five-mile range.	
S	No residences were located within a five-mile range.	
SSW	No residences were located within a five-mile range.	
SW	No residences were located within a five-mile range.	
WSW	No residences were located within a five-mile range.	
W	No residences were located within a five-mile range.	

TURKEY POINT RESIDENCE SURVEY RESULTS

July-October 2023 (cont.)

Sector	Range Bearing	Nearest Residence/Business Location
WNW (A)	1.7 miles 302°	FP&L daycare center and shooting range near the entrance to the Turkey Point Plant. There are 15 employees with ~90 children enrolled, ages 6 months to 5 yrs. Occasionally, they will have school aged children. The center is open from 6am to 6pm Monday thru Friday. The number of people and times at the shooting range varies. N25° 26.817' W80° 21.217'.
WNW (B)	3.7 miles 302°	11790 Canal Drive on the south side of Canal Drive (SW 328 St) west of SW 117th Ave (no gardens). Next door, to the east, is a makeshift produce stand which sells coconuts, limes, mandarin oranges, flowers, garlic, mangoes, papaya, avocado, honey, melons, sugar cane, ginger, plantains and pumpkins. Is not associated with the house next door. Two employees may be working there from 8 am to 6 pm. N25° 27.767' W80° 22.867'.
NW (A)	3.6 miles 304°	The Waste Management Homestead Landfill is located north of Canal Drive (SW 328th St) and east of SW 117th Ave. There are 9 full time employees onsite Monday thru Friday from 7 am to 3:30 pm. N25° 27.833' W80° 22.767'.
NW (B)	3.7 miles 311°	11000 SW 320th St. Per property records, this house is on land zoned agriculture and the owners live in Texas. Unable to verify if anyone lives there because the gate is locked and the residence is too far from the road to see anything. N25° 28.217' W80° 22.567'.
NW (C)	3.8 miles 316°	High Hope Nursery at 11400 SW 316th St. Contact is George Sprinkle, Owner and General Manager. This nursery has approximately 35 employees. Hours of operations are 7am to 5pm Monday thru Friday, with some work on Saturdays until noon. A man lives onsite providing security. N25° 28.441' W80° 22.430'.
NW (D)	3.9 miles 314°	Snapper Creek Nursery at 11600 SW 316th Street. 14 workers that work Monday thru Friday 7 am to 5 pm. Contact is Elmer. Security is provided by another person who lives onsite. N25° 28.444' W80° 22.560'.
NNW (A)	4.4 miles 333°	29800 SW 107th Ave. Per property records, this is a small one bedroom residence on land zoned as mixed use agricultural. No information on occupants. N25° 29.450' W80° 21.817'.
NNW (B)	4.7 miles 328°	Mirtica and Sons Dragon Fruit Farm. Entrance at the end of SW 296th St. Contact is Ernesto Gonzalez Abreu. Owner lives off property in Miami.. N25° 29.564' W80° 22.264'.

TURKEY POINT GARDEN SURVEY RESULTS

July-October 2023

Sector	Range Bearing	Nearest Garden Location (with estimated total area of 500 square feet, or more, and producing green leafy vegetables).
N	No suitable gardens were located within a five-mile range.	
NNE	No suitable gardens were located within a five-mile range.	
NE	No suitable gardens were located within a five-mile range.	
ENE	No suitable gardens were located within a five-mile range.	
E	No suitable gardens were located within a five-mile range.	
ESE	No suitable gardens were located within a five-mile range.	
SE	No suitable gardens were located within a five-mile range.	
SSE	No suitable gardens were located within a five-mile range.	
S	No suitable gardens were located within a five-mile range.	
SSW	No suitable gardens were located within a five-mile range.	
SW	No suitable gardens were located within a five-mile range.	
WSW	No suitable gardens were located within a five-mile range.	
W	No suitable gardens were located within a five-mile range.	

TURKEY POINT GARDEN SURVEY RESULTS

July-October 2023 (cont.)

Sector	Range Bearing	Nearest Garden Location (with estimated total area of 500 square feet, or more, and producing green leafy vegetables).
WNW (A)	4.5 miles 303°	Thai Farm. South of Mowry Drive (SW 320th St) and about 0.6 miles west of Allapattah Rd (SW 117th Ave). Growing guava, dragon fruit, papaya, palm, bamboo, and more. No one present. N25° 28.217' W80° 23.467'.
WNW (B)	6.0 miles 295°	Farm Share, Inc at 14125 SW 320th St, where farmers donate locally grown produce to be given to charitable organizations. Produce donations usually start in November and run through April. About 20 workers present from 8 am to 4:30 pm Monday thru Friday. The produce donated is usually tomatoes, bananas, squash, green beans, okra, corn, potatoes, watermelon and zucchini. The contact is Nick Sanchez or Aaron Garcia, Facility Manager, 305-246-3276 (office), 305-926-9832 (cell). N25° 28.255' W80° 25.111'.
NW	No suitable gardens were located within a five-mile range.	
NNW (A)	4.4 miles 332°	Under the Vine. 11100 SW 296th St. Entrance at SW 107th Ave & SW 296th St just east of SFM Tree Farm/Mirtica Farm. Growing only dragon fruit. Open Mon-Sat 8:00-5:00. 3 employees plus the owner, Cindy, work here. Sometimes they hire extra help. The owner's brother, Pepper, sometimes spends the weekends onsite. N25° 29.464' W80° 21.828'.
NNW (B)	4.7 miles 328°	Mirtica and Sons Dragon Fruit Farm. Entrance at the end of SW 296th St. Noticed bananas, dragon fruit, plantain tress, coconuts and mangoes growing in various areas on the farm. Also noticed beehives. Owner lives off property in Miami. N25° 29.564' W80° 22.264'.

Note: At the time of our survey, many fields in the area surveyed were bare soil or cover crops. Other than the sites already described above, the only non-ornamental crops known to have been grown in the survey area were: bananas, beans, corn, guava, malanga, papaya, eggplant, sorghum, squash, sugar cane, tambis, okra, and melon.

TURKEY POINT MILK ANIMAL SURVEY RESULTS

July-October 2023

Sector	Nearest Milk Animals (cows or goats).
N	No potential milk animals were located within five miles.
NNE	No potential milk animals were located within five miles.
NE	No potential milk animals were located within five miles.
ENE	No potential milk animals were located within five miles.
E	No potential milk animals were located within five miles.
ESE	No potential milk animals were located within five miles.
SE	No potential milk animals were located within five miles.
SSE	No potential milk animals were located within five miles.
S	No potential milk animals were located within five miles.
SSW	No potential milk animals were located within five miles.
SW	No potential milk animals were located within five miles.
WSW	No potential milk animals were located within five miles.
W	No potential milk animals were located within five miles.
WNW	No potential milk animals were located within five miles.
NW	No potential milk animals were located within five miles.
NNW	No potential milk animals were located within five miles.

4.6 Interlaboratory Comparison Results

Attachment 3 contains result summary for Interlaboratory Comparison Program for the Department of Energy Mixed Analyte Performance Evaluation Program (MAPEP). These satisfied the requirement of Control 5.3 of the ODCM for the Interlaboratory Comparison Program.

5.0 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY

1. Table 6, Radiological Environmental Monitoring Program Summary, summarizes data for the 2023 REMP program.

Table 6: Radiological Environmental Monitoring Program Summary

Sample Type (Units)	Type / Number of Analyses[1]	LLD [2]	Indicator Locations Mean (F)[3] [Range]	Location[4] [Highest Annual Mean]	Mean (F)[3] [Range]	Control Locations Mean (F)[3] [Range]	Number of Non Routine Results[5]
Air Particulate (pCi/m^3)	GB / 312	0.01	0.0122 (260 / 260) [0.001 - 0.025]	T64 (22 mi. NNE)	0.0134 (52 / 52) [0.006 - 0.024]	0.0134 (52 / 52) [0.006 - 0.024]	0
	GS / 24		0.1015 (20 / 20)	T58	0.1175 (4 / 4)	0.1168 (4 / 4)	0
	Be-7	--	[0.059 - 0.146]	(1 mi. NW)	[0.106 - 0.146]	[0.106 - 0.135]	
	K-40	--	< LLD	N/A	N/A	< LLD	0
	Cs-134	0.05	< LLD	N/A	N/A	< LLD	0
	Cs-137	0.06	< LLD	N/A	N/A	< LLD	0
	Pb-210	--	0.0098 (4 / 20) [0.009 - 0.012]	T41 (1.6 mi. WNW)	0.0105 (2 / 4) (0.009 - 0.012]	0.0086 (1 / 4) [<LLD - 0.009]	0
Airborne Iodine (pCi/m^3)	I-131 / 312	0.07	< LLD	N/A	N/A	< LLD	0
Direct Radiation Indicator TLD (µR/hour)	Gamma / 88	[6]	3.8 (88 / 88) [2.6 - 4.9]	WNW-10 (9.8 mi. WNW)	4.3 (4 / 4) [3.9 - 4.8]	N/A	0
Direct Radiation Control TLD (µR/hour)	Gamma / 4	[6]	N/A	NNE-22 (22.6 mi. NNE)	3.3 (4 / 4) [3.0 - 3.7]	3.3 (4 / 4) [3.0 - 3.7]	0

LEGEND:

[1] - GB = Gross beta; I-131 = Iodine-131; H-3 = Tritium; GS = Gamma scan.

[2] - LLD = Required lower limit of detection based on Turkey Point ODCM.

[3] - Mean and range based upon detectable measurements only. Fraction of detectable measurements at specified locations is indicated in parenthesis (F).

[4] - Locations are specified (1) by name and (2) direction relative to reactor site.

[5] - Non-routine results are those which exceed ten times the control station value. If no control station value is available, the result is considered non-routine if it exceeds ten times the preoperational value for the location.

[6] - LLD is not defined in Turkey Point ODCM.

Table 6: Radiological Environmental Monitoring Program Summary

Sample Type (Units)	Type / Number of Analyses[1]	LLD [2]	Indicator Locations Mean (F)[3] [Range]	Location[4] [Highest Annual Mean]	Mean (F)[3] [Range]	Control Locations Mean (F)[3] [Range]	Number of Non Routine Results[5]
Surface Water (pCi/L)	H-3 / 36	3,000	91 (1 / 24) [<LLD - 91]	T81 (6 mi. S)	91 (1 / 12) [<LLD - 91]	< LLD	0
	GS / 36						
	K-40	--	291 (24 / 24) [172 - 420]	T81 (6 mi. S)	302 (12 / 12) [232 - 416]	215 (12 / 12) [153 - 287]	0
Sediment (pCi/kg dry)	GS / 6						
	Be-7	--	46 (1 / 4) [<LLD - 46]	T67 (13-18 mi. N, NNE)	86 (1 / 2) [<LLD - 86]	86 (1 / 2) [<LLD - 86]	0
	K-40	--	98 (1 / 4) [<LLD - 98]	T67 (13-18 mi. N, NNE)	155 (2 / 2) [146 - 163]	155 (2 / 2) [146 - 163]	0
	Co-60	--	< LLD	N/A	N/A	< LLD	0
	Cs-137	180	< LLD	N/A	N/A	< LLD	0
	Pb-210	--	< LLD	N/A	N/A	< LLD	0
	Ra-226	--	378 (4 / 4) [268 - 498]	T81 (6 mi. S)	453 (2 / 2) [407 - 498]	144 (2 / 2) [134 - 153]	0
	Th-232	--	<LLD	N/A	N/A	< LLD	0
	U-235	--	<LLD	N/A	N/A	< LLD	0
	U-238	--	<LLD	N/A	N/A	< LLD	0

LEGEND:

[1] - GB = Gross beta; I-131 = Iodine-131; H-3 = Tritium; GS = Gamma scan.

[2] - LLD = Required lower limit of detection based on Turkey Point ODCM.

[3] - Mean and range based upon detectable measurements only. Fraction of detectable measurements at specified locations is indicated in parenthesis (F).

[4] - Locations are specified (1) by name and (2) direction relative to reactor site.

[5] - Non-routine results are those which exceed ten times the control station value. If no control station value is available, the result is considered non-routine if it exceeds ten times the preoperational value for the location.

[6] - LLD is not defined in Turkey Point ODCM.

Table 6: Radiological Environmental Monitoring Program Summary

Sample Type (Units)	Type / Number of Analyses[1]	LLD [2]	Indicator Locations Mean (F)[3] [Range]	Location[4] [Highest Annual Mean]	Mean (F)[3] [Range]	Control Locations Mean (F)[3] [Range]	Number of Non Routine Results[5]
Crustacea (pCi/kg wet)	GS / 4		1855 (2 / 2)	T67	1965 (2 / 2)	1965 (2 / 2)	
	K-40	--	[1130 - 2580]	(13-18 mi. N, NNE)	[1170 - 2760]	[1170 - 2760]	0
	Ra-226	--	169 (1 / 2) [<LLD - 169]	T81 (6 mi. S)	169 (1 / 2) [<LLD - 169]	<LLD	0
	Ra-228	--	< LLD	N/A	N/A	< LLD	0
Fish (pCi/kg wet)	GS / 4						
	K-40	--	3035 (2 / 2) [2580 - 3490]	T81 (6 mi. S)	3035 (2 / 2) [2580 - 3490]	2885 (2 / 2) [2760 - 3010]	0
	Ra-226	--	< LLD	N/A	N/A	< LLD	0
	Ra-228	--	< LLD	N/A	N/A	< LLD	0
Broad Leaf (pCi/kg wet)	GS / 36						
	Be-7	--	1910 (24 / 24) [545 - 3320]	T40 (3 mi. W)	2188 (12 / 12) [724 - 3320]	1354 (12 / 12) [663 - 3140]	0
	K-40	--	4893 (24 / 24) [1830 - 7580]	T67 (13-18 mi. N, NNE)	6003 (12 / 12) [1960 - 8380]	6003 (12 / 12) [1960 - 8380]	0
	Cs-137	80	59 (15 / 24) [12 - 109]	T40 (3 mi. W)	74 (10 / 12) [12 - 109]	24 (2 / 12) [23 - 25]	0
	Pb-210	--	900 (4 / 24) [146 - 1590]	T41 (2 mi. WNW)	1590 (1 / 12) [<LLD - 1590]	71 (1 / 12) [<LLD - 71]	0
	Pb-212	--	153 (2 /24) [150 - 155]	T40 (3 mi. W)	153 (2 /12) [150 - 155]	<LLD	0
	Ra-226	--	< LLD	N/A	N/A	< LLD	0

LEGEND:

[1] - GB = Gross beta; I-131 = Iodine-131; H-3 = Tritium; GS = Gamma scan.

[2] - LLD = Required lower limit of detection based on Turkey Point ODCM.

[3] - Mean and range based upon detectable measurements only. Fraction of detectable measurements at specified locations is indicated in parenthesis (F).

[4] - Locations are specified (1) by name and (2) direction relative to reactor site.

[5] - Non-routine results are those which exceed ten times the control station value. If no control station value is available, the result is considered non-routine if it exceeds ten times the preoperational value for the location.

[6] - LLD is not defined in Turkey Point ODCM.

Attachment 1

Sample Deviations

Table 7: Sample Deviations Table

Comment No.	Sample Media Affected	Sample Location	Date	Problem	Evaluation / Actions
1	Soil	MAPEP-23MaS49	2023	False Positive results for Mn-54	The Bureau of Radiation Control (BRC) under the State of Florida, identified a discrepancy in the reported results for MAPEP-23-MaS49 sample (see Attachment 3), for the radiological and inorganic combined soil standard Mn-54. The reported value of 1.85 Bq/Kg (50 pCi/Kg) was below the Minimum Detectable Activity (MDA) of 2.15 Bq/Kg (58.05 pCi/Kg), but it was not acceptable due to the possibly that the background subtraction method was not applied during the analysis. This issue was evaluated by the Florida lab participating in their QC program and was determined by the Florida lab not to have an impact on the results provided in this REMP report. The BRC Program Compliance officer initiated a corrective measure by requesting a blank soil sample from the next series, MAPEP-24-MaS50. A proper background subtraction technique will be used to ensure accuracy during the additional test and a report will be issued upon completion. AR# 02482781
2	Air Sample	T57	03/06/23 - 03/20/23	Pump Failure	The air sample pump was not operational upon discovery during routine weekly sampling. Due to limited air flow through the iodine cartridge, the sample pump was replaced 3 times over the course of three weeks from 03/06/23 thru 03/20/23. Estimated sampling duration was: 1) Week 1 - 4.8 hrs. out of 144 hrs.,2) Week 2 - 42.3 hrs. out of 173 hours, and 3) Week 3 - 48.8 hrs. out of 162 hrs. AR# 02440703
3	Broad Leaf Vegetation	T40	1st, 3rd, and 4th Qtr.	Broad Leaf Vegetation Cs-137 Result above LLD	The presence of Cs-137 (Cesium-137) was observed in the required REMP sample T40, the broadleaf vegetation. During the first, third, and fourth quarter of State of Florida 2023 quarterly reports the sample results were 90 pCi/kg, 109 pCi/kg, and 100 pCi/kg (1st quarter), 83 pCi/kg (3rd quarter), 81 pCi/kg, and 97 pCi/kg (4th quarter). Although these values do not meet the ODCM reporting criteria thresholds, they are being documented as identified. The ODCM Lower Limit of Detection (LLD) for Cs-137 is 80 pCi/kg, and the reporting level requirement is 2000 pCi/kg. AR# 02484345

Table 7: Sample Deviations Table

Comment No.	Sample Media Affected	Sample Location	Date	Problem	Evaluation / Actions
4	Milk	T99	2023	Sample Unavailable	T99, the supplemental goat milk sample, was unavailable for 2023 because the farm had no milking goats. AR# 02482782

ATTACHMENT 2

Monitoring Results Tables

RADIOLOGICAL SURVEILLANCE OF
FLORIDA POWER AND LIGHT COMPANY'S

TURKEY POINT SITE
2023

First Quarter, 2023
Second Quarter, 2023
Third Quarter, 2023
Fourth Quarter, 2023

Monitoring Results Tables

Table 8: Air Particulate - Gross Beta

Analysis: Gross Beta				Units: pCi/m^3		
End Date	T41 (Indicator)	T51 (Indicator)	T57 (Indicator)	T58 (Indicator)	T64[1] (Control)	T72 (Indicator)
LLD ➔	0.01	0.01	0.01	0.01	0.01	0.01
01/02/2023	0.009	0.011	0.007	0.006	0.007	0.009
01/09/2023	0.012	0.012	0.009	0.012	0.010	0.012
01/16/2023	0.023	0.022	0.019	0.019	0.019	0.021
01/23/2023	0.012	0.009	0.013	0.012	0.013	0.012
01/30/2023	0.013	0.014	0.019	0.015	0.010	0.012
02/07/2023	0.011	0.009	0.007	0.012	0.008	0.010
02/15/2023	0.010	0.009	0.002	0.010	0.014	0.011
02/21/2023	0.011	0.008	0.014	0.011	0.010	0.016
02/28/2023	0.012	0.011	0.019	0.015	0.015	0.011
03/06/2023	0.013	0.014	[2] 0.022	0.013	0.014	0.015
03/13/2023	0.013	0.022	[2] 0.006	0.018	0.014	0.019
03/20/2023	0.016	0.018	[2] 0.014	0.014	0.020	0.016
03/27/2023	0.007	0.008	0.011	0.011	0.011	0.010
04/03/2023	0.010	0.010	0.017	0.013	0.014	0.010
04/10/2023	0.007	0.011	0.007	0.009	0.008	0.010
04/18/2023	0.006	0.010	0.006	0.007	0.008	0.006
04/25/2023	0.015	0.015	0.015	0.020	0.019	0.005
05/02/2023	0.011	0.016	0.013	0.014	0.012	0.014
05/09/2023	0.022	0.019	0.014	0.017	0.024	0.015
05/15/2023	0.016	0.014	0.016	0.015	0.019	0.017
05/23/2023	0.013	0.010	0.006	0.009	0.011	0.010
05/30/2023	0.010	0.010	0.009	0.015	0.007	0.007
06/05/2023	0.011	0.009	0.010	0.011	0.011	0.007
06/12/2023	0.008	0.014	0.012	0.012	0.016	0.011
06/20/2023	0.010	0.010	0.013	0.012	0.012	0.012
06/27/2023	0.008	0.016	0.012	0.012	0.012	0.011
07/06/2023	0.009	0.010	0.009	0.014	0.009	0.012
07/14/2023	0.013	0.015	0.016	0.018	0.019	0.012
07/20/2023	0.018	0.013	0.016	0.017	0.015	0.017
07/26/2023	0.025	0.013	0.017	0.017	0.021	0.009
08/02/2023	0.008	0.008	0.007	0.008	0.008	0.007
08/08/2023	0.012	0.010	0.011	0.017	0.015	0.014
08/14/2023	0.014	0.012	0.012	0.018	0.017	0.020
08/21/2023	0.010	0.011	0.009	0.013	0.007	0.011
08/29/2023	0.010	0.013	0.010	0.015	0.014	0.012
09/05/2023	0.007	0.012	0.017	0.013	0.006	0.011
09/12/2023	0.008	0.011	0.013	0.013	0.012	0.009
09/19/2023	0.009	0.012	0.008	0.014	0.011	0.009
09/26/2023	0.011	0.006	0.006	0.006	0.011	0.011
10/02/2023	0.005	0.006	0.002	0.005	0.006	0.007
10/09/2023	0.004	0.001	0.008	0.012	0.009	0.011
10/16/2023	0.013	0.012	0.013	0.013	0.016	0.011
10/23/2023	0.016	0.017	0.015	0.017	0.022	0.019
11/01/2023	0.017	0.021	0.019	0.019	0.024	0.019
11/07/2023	0.017	0.020	0.018	0.013	0.017	0.025
11/13/2023	0.001	0.006	0.006	0.007	0.009	0.008
11/20/2023	0.007	0.004	0.006	0.006	0.009	0.007
11/28/2023	0.015	0.012	0.009	0.017	0.017	0.013
12/05/2023	0.016	0.017	0.014	0.017	0.023	0.018
12/11/2023	0.019	0.014	0.012	0.017	0.018	0.017
12/19/2023	0.013	0.011	0.009	0.009	0.009	0.009
12/27/2023	0.011	0.010	0.012	0.014	0.015	0.017

[1] Station with highest annual mean.

[2] See Attachment 1, Table 7, Samples Deviations Table, Comment 2

Monitoring Results Tables

Table 9: Air Particulate Composite - Gamma

Analysis: Gamma Isotopic				Units: pCi/m^3		
Location	**Collection Date**	**Be-7**	**K-40**	**Cs-134**	**Cs-137**	**Pb-210**
	REQUIRED LLD ➔	**--**	**--**	**0.05**	**0.06**	**--**
T41 (Indicator)	03/27/2023	0.1330	< 0.0133	< 0.0011	< 0.0008	0.0086
T51 (Indicator)	03/27/2023	0.1150	< 0.0147	< 0.0009	< 0.0008	< 0.0330
T57 (Indicator)	03/27/2023	0.1270	< 0.0146	< 0.0011	< 0.0010	< 0.0145
T58 (Indicator)	03/27/2023	0.1460	< 0.0133	< 0.0010	< 0.0010	0.0093
T64 (Control)	03/27/2023	0.1350	< 0.0143	< 0.0010	< 0.0008	< 0.0143
T72 (Indicator)	03/27/2023	0.1300	< 0.0163	< 0.0010	< 0.0008	< 0.0327
T41 (Indicator)	06/27/2023	0.0594	< 0.0187	< 0.0009	< 0.0008	0.0124
T51 (Indicator)	06/27/2023	0.0607	< 0.0115	< 0.0009	< 0.0008	< 0.0320
T57 (Indicator)	06/27/2023	0.0960	< 0.0204	< 0.0010	< 0.0009	0.0088
T58 (Indicator)	06/27/2023	0.1060	< 0.0151	< 0.0007	< 0.0008	< 0.0317
T64 (Control)	06/27/2023	0.1190	< 0.0234	< 0.0009	< 0.0009	0.0086
T72 (Indicator)	06/27/2023	0.0652	< 0.0145	< 0.0006	< 0.0007	< 0.0302
T41 (Indicator)	09/26/2023	0.0951	< 0.0157	< 0.0080	< 0.0100	< 0.0080
T51 (Indicator)	09/26/2023	0.1070	< 0.0174	< 0.0090	< 0.0120	< 0.0090
T57 (Indicator)	09/26/2023	0.0877	< 0.0152	< 0.0090	< 0.0110	< 0.0070
T58 (Indicator)	09/26/2023	0.1060	< 0.0182	< 0.0090	< 0.0120	< 0.0100
T64 (Control)	09/26/2023	0.1070	< 0.0138	< 0.0060	< 0.0070	< 0.0070
T72 (Indicator)	09/26/2023	0.0909	< 0.0193	< 0.0110	< 0.0130	< 0.0100
T41 (Indicator)	12/27/2023	0.1020	< 0.0152	< 0.0014	< 0.0017	< 0.0015
T51 (Indicator)	12/27/2023	0.0869	< 0.0139	< 0.0009	< 0.0012	< 0.0009
T57 (Indicator)	12/27/2023	0.0983	< 0.0261	< 0.0000	< 0.0000	< 0.0018
T58 (Indicator)	12/27/2023	0.1120	< 0.0148	< 0.0011	< 0.0014	< 0.0010
T64 (Control)	12/27/2023	0.1060	< 0.0231	< 0.0016	< 0.0020	< 0.0017
T72 (Indicator)	12/27/2023	0.1050	< 0.0164	< 0.0007	< 0.0009	< 0.0007

Monitoring Results Tables
Table 10: Air Cartridges - Iodine-131

Analysis: Iodine-131				Units: pCi/m^3		
End Date	T41 (Indicator)	T51 (Indicator)	T57 (Indicator)	T58 (Indicator)	T64 (Control)	T72 (Indicator)
LLD ➔	0.07	0.07	0.07	0.07	0.07	0.07
01/02/2023	< 0.030	< 0.030	< 0.030	< 0.030	< 0.030	< 0.040
01/09/2023	< 0.030	< 0.030	< 0.030	< 0.030	< 0.030	< 0.030
01/16/2023	< 0.020	< 0.020	< 0.030	< 0.020	< 0.020	< 0.020
01/23/2023	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
01/30/2023	< 0.020	< 0.020	< 0.010	< 0.020	< 0.020	< 0.020
02/07/2023	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
02/15/2023	< 0.020	< 0.020	< 0.010	< 0.020	< 0.020	< 0.020
02/21/2023	< 0.020	< 0.020	< 0.030	< 0.020	< 0.020	< 0.020
02/28/2023	< 0.020	< 0.020	< 0.050	< 0.020	< 0.020	< 0.020
03/06/2023	< 0.020	< 0.020	(1) < 0.100	< 0.020	< 0.020	< 0.020
03/13/2023	< 0.020	< 0.020	(1) < 0.080	< 0.020	< 0.020	< 0.020
03/20/2023	< 0.020	< 0.020	(1) < 0.080	< 0.020	< 0.020	< 0.020
03/27/2023	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
04/03/2023	< 0.040	< 0.040	< 0.040	< 0.040	< 0.040	< 0.040
04/10/2023	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
04/18/2023	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
04/25/2023	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
05/02/2023	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
05/09/2023	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
05/15/2023	< 0.020	< 0.020	< 0.020	< 0.020	< 0.030	< 0.020
05/23/2023	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
05/30/2023	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
06/05/2023	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
06/12/2023	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
06/20/2023	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
06/27/2023	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
07/06/2023	< 0.020	< 0.010	< 0.010	< 0.020	< 0.020	< 0.020
07/14/2023	< 0.010	< 0.010	< 0.020	< 0.010	< 0.020	< 0.010
07/20/2023	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
07/26/2023	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
08/02/2023	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
08/08/2023	< 0.010	< 0.010	< 0.010	< 0.020	< 0.010	< 0.010
08/14/2023	< 0.020	< 0.020	< 0.020	< 0.030	< 0.030	< 0.020
08/21/2023	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
08/29/2023	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
09/05/2023	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
09/12/2023	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
09/19/2023	< 0.030	< 0.030	< 0.030	< 0.030	< 0.030	< 0.030
09/26/2023	< 0.030	< 0.030	< 0.030	< 0.030	< 0.040	< 0.030
10/02/2023	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
10/09/2023	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
10/16/2023	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
10/23/2023	< 0.070	< 0.070	< 0.070	< 0.070	< 0.070	< 0.070
11/01/2023	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
11/07/2023	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
11/13/2023	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
11/20/2023	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
11/28/2023	< 0.020	< 0.010	< 0.020	< 0.020	< 0.020	< 0.020
12/05/2023	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
12/11/2023	< 0.010	< 0.010	< 0.010	< 0.020	< 0.010	< 0.010
12/19/2023	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
12/27/2023	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020

(1) See Attachment 1, Table 7, Samples Deviations Table, Comment 2

Monitoring Results Tables

Table 11: Direct Radiation– Indicators

Analysis: Gamma Dose			Units: µR/hr		
Station	**1st Qtr 2023**	**2nd Qtr 2023**	**3rd Qtr 2023**	**4th Qtr 2023**	**Annual Mean 2023**
N-2	3.8	4.3	3.8	4.1	**4.0**
N-7	3.1	3.6	4.3	4.8	**3.9**
N-10	3.4	4.0	3.6	3.7	**3.7**
NNW-2	3.3	3.8	4.0	4.1	**3.8**
NNW-10	3.5	3.9	3.8	3.8	**3.7**
NW-1	3.8	4.1	3.9	3.7	**3.9**
NW-5	3.2	4.2	4.1	4.1	**3.9**
NW-10	4.1	3.6	4.2	4.3	**4.1**
WNW-2	3.3	4.4	3.6	3.8	**3.8**
WNW-10[(1)]	**3.9**	**4.8**	**4.4**	**4.0**	**4.3**
W-1	3.7	3.8	4.8	4.6	**4.2**
W-5	3.3	3.8	3.8	4.9	**4.0**
W-9	3.0	4.0	3.8	4.0	**3.7**
WSW-8	3.3	4.5	4.0	3.8	**3.9**
SW-1	3.5	4.2	4.5	4.1	**4.1**
SW-8	2.6	3.9	4.2	4.5	**3.8**
SSW-5	2.8	3.9	3.9	4.3	**3.7**
SSW-10	3.0	3.6	3.9	3.8	**3.6**
S-5	2.7	4.0	3.6	4.2	**3.6**
S-10	3.2	4.0	4.0	3.6	**3.7**
SSE-1	2.7	3.0	4.0	3.4	**3.3**
SSE-10	2.9	3.0	3.0	3.9	**3.2**

(1) Indicator station with highest annual mean.

Table 12: Direct Radiation – Control

Analysis: Gamma Dose			Units: µR/hr		
Station	**1st Qtr 2023**	**2nd Qtr 2023**	**3rd Qtr 2023**	**4th Qtr 2023**	**Annual Mean 2023**
NNE-22	**3.7**	**3.4**	**3.0**	**3.1**	**3.3**

Monitoring Results Tables

Table 13: Surface Water – Tritium and Gamma

Analysis: Gamma Isotopic				Units: pCi/L							
Location	End Date	H-3	K-40	Location	End Date	H-3	K-40	Location	End Date	H-3	K-40
REQUIRED LLD ➔		3,000	--	REQUIRED LLD ➔		3,000	--	REQUIRED LLD ➔		3,000	--
T42 (Indicator)	01/17/2023	< 137	205	T67 (Control)	01/17/2023	< 137	287	T81 (Indicator)	01/17/2023	< 137	266
T42 (Indicator)	02/13/2023	< 138	272	T67 (Control)	02/13/2023	< 138	153	T81 (Indicator)	02/13/2023	< 140	320
T42 (Indicator)	03/07/2023	< 135	364	T67 (Control)	03/06/2023	< 135	246	T81 (Indicator)	03/06/2023	< 135	264
T42 (Indicator)	04/03/2023	< 151	403	T67 (Control)	04/03/2023	< 151	237	T81 (Indicator)	04/03/2023	< 148	302
T42 (Indicator)	05/01/2023	< 136	312	T67 (Control)	05/01/2023	< 136	280	T81 (Indicator)	05/01/2023	91	364
T42 (Indicator)	06/05/2023	< 150	229	T67 (Control)	06/05/2023	< 150	217	T81 (Indicator)	06/05/2023	< 150	416
T42 (Indicator)	07/21/2023	< 141	420	T67 (Control)	07/21/2023	< 141	195	T81 (Indicator)	07/21/2023	< 141	321
T42 (Indicator)	08/15/2023	< 139	320	T67 (Control)	08/15/2023	< 139	250	T81 (Indicator)	08/15/2023	< 139	252
T42 (Indicator)	09/06/2023	< 138	221	T67 (Control)	09/06/2023	< 138	184	T81 (Indicator)	09/06/2023	< 138	311
T42 (Indicator)	10/10/2023	< 142	238	T67 (Control)	10/09/2023	< 139	157	T81 (Indicator)	10/10/2023	< 142	323
T42 (Indicator)	11/02/2023	< 137	198	T67 (Control)	11/01/2023	< 137	187	T81 (Indicator)	11/02/2023	< 137	255
T42 (Indicator)	12/06/2023	< 137	172	T67 (Control)	12/05/2023	< 134	184	T81 (Indicator)	12/06/2023	< 137	232

Monitoring Results Tables

Table 14: Shoreline Sediment - Gamma

Analysis: Gamma Isotopic						Units: pCi/kg (dry)				
Location	**Collection Date**	**Be-7**	**K-40**	**Co-60**	**Cs-137**	**Pb-210**	**Ra-226**	**Th-232**	**U-235**	**U-238**
	REQUIRED LLD ➔	--	--	--	**180**	--	--	--	--	--
T42 (Indicator)	01/18/2023	46	98	< 8	< 8	< 365	268	< 36	< 16	< 148
T67 (Control)	01/18/2023	< 84	146	< 6	< 8	< 244	153	< 32	< 16	< 139
T81 (Indicator)	01/18/2023	< 133	< 179	< 13	< 11	< 1050	407	< 53	< 27	< 276
T42 (Indicator)	08/15/2023	< 134	< 128	< 9	< 10	< 1180	339	< 48	< 45	< 8
T67 (Control)	08/15/2023	86	163	< 9	< 8	< 427	134	< 38	< 21	< 4
T81 (Indicator)	08/15/2023	< 226	< 160	< 14	< 13	< 1650	498	< 71	< 79	< 11

Monitoring Results Tables

Table 15: Crustacea - Gamma

Analysis: Gamma Isotopic			Units: pCi/kg (wet)		
Location	Collection Date	Sample Type	K-40	Ra-226	Ra-228
REQUIRED LLD ➔			--	--	--
T67 (Control)	01/19/2023	Blue Crabs	1170	< 269	< 47
T81 (Indicator)	01/19/2023	Blue Crabs	1130	169	< 44
T67 (Control)	08/15/2023	Blue Crabs	2760	< 624	< 111
T81 (Indicator)	08/15/2023	Blue Crabs	2580	< 517	< 93

Monitoring Results Tables

Table 16: Fish - Gamma

Analysis: Gamma Isotopic			Units: pCi/kg (wet)		
Location	Collection Date	Sample Type	K-40	Ra-226	Ra-228
REQUIRED LLD ➔			--	--	--
T67 (Control)	01/12/2023	Mixed Species	3010	< 408	< 72
T81 (Indicator)	01/19/2023	Mixed Species	3490	< 371	< 83
T67 (Control)	08/15/2023	Mixed Species	2760	< 624	< 111
T81 (Indicator)	08/15/2023	Mixed Species	2580	< 517	< 93

Monitoring Results Tables

Table 17: Broad Leaf Vegetation - Gamma

Analysis: Gamma Isotopic				Units: pCi/kg (wet)				
Location	Collection Date	Sample Type	Be-7	K-40	Cs-137	Pb-210	Pb-212	Ra-226
		REQUIRED LLD ➔	--	--	80	--	--	--
T40 (Indicator)	01/17/2023	Brazilian Pepper	2150	4740	(1) 90	712	< 25	< 280
T40 (Indicator)	02/13/2023	Brazilian Pepper	2470	5670	(1) 109	1150	< 39	< 539
T40 (Indicator)	03/06/2023	Brazilian Pepper	2140	4770	(1) 100	146	< 23	< 294
T40 (Indicator)	04/03/2023	Brazilian Pepper	724	6400	12	< 728	< 29	< 305
T40 (Indicator)	05/01/2023	Brazilian Pepper	818	7580	< 16	< 108	< 28	< 318
T40 (Indicator)	06/05/2023	Brazilian Pepper	2150	6600	21	< 1220	< 40	< 487
T40 (Indicator)	07/21/2023	Brazilian Pepper	3130	5700	(1) 83	< 18	< 1060	< 38
T40 (Indicator)	08/15/2023	Brazilian Pepper	3290	4050	78	< 9	150	< 22
T40 (Indicator)	09/06/2023	Brazilian Pepper	3320	4770	73	< 10	155	< 26
T40 (Indicator)	10/10/2023	Brazilian Pepper	1880	4050	(1) 81	< 795	< 29	< 308
T40 (Indicator)	11/02/2023	Brazilian Pepper	2330	3840	(1) 97	< 851	< 27	< 329
T40 (Indicator)	12/06/2023	Brazilian Pepper	1850	6040	< 25	< 1230	< 37	< 510
T41(Indicator)	01/17/2023	Brazilian Pepper	545	1830	< 6	< 252	< 9	< 106
T41(Indicator)	02/13/2023	Brazilian Pepper	1680	4020	< 15	< 690	< 24	< 283
T41(Indicator)	03/06/2023	Brazilian Pepper	1170	4090	< 22	< 1010	< 33	< 417
T41(Indicator)	04/03/2023	Brazilian Pepper	1640	4890	< 19	< 1220	< 38	< 525
T41(Indicator)	05/01/2023	Brazilian Pepper	1990	5530	< 21	1590	< 47	< 568
T41(Indicator)	06/05/2023	Brazilian Pepper	1800	4370	17	< 896	< 32	< 363
T41(Indicator)	07/21/2023	Brazilian Pepper	2070	4270	26	< 18	< 1030	< 32
T41(Indicator)	08/15/2023	Brazilian Pepper	2780	6230	< 19	< 19	< 138	< 33
T41(Indicator)	09/06/2023	Brazilian Pepper	1320	5050	27	< 15	< 877	< 34
T41(Indicator)	10/10/2023	Brazilian Pepper	1580	5240	< 12	< 57	< 22	< 245
T41(Indicator)	11/02/2023	Brazilian Pepper	894	2430	19	< 902	< 30	< 344
T41(Indicator)	12/06/2023	Brazilian Pepper	2130	5260	55	< 1430	< 34	< 447
T67 (Control)	01/17/2023	Brazilian Pepper	1200	6840	< 14	< 109	< 25	< 290
T67 (Control)	02/13/2023	Brazilian Pepper	980	6180	< 19	< 967	< 32	< 450
T67 (Control)	03/06/2023	Brazilian Pepper	819	6100	< 11	< 87	< 20	< 229
T67 (Control)	04/03/2023	Brazilian Pepper	633	8380	< 13	< 112	< 26	< 310
T67 (Control)	05/02/2023	Brazilian Pepper	1020	8060	< 20	< 1260	< 42	< 525
T67 (Control)	06/05/2023	Brazilian Pepper	894	7670	< 14	< 102	< 25	< 284
T67 (Control)	07/21/2023	Brazilian Pepper	1670	3520	23	< 12	< 776	< 25
T67 (Control)	08/15/2023	Brazilian Pepper	1340	6580	< 18	< 18	< 1250	< 33
T67 (Control)	09/06/2023	Brazilian Pepper	1910	7160	< 23	< 23	< 1160	< 44
T67 (Control)	10/09/2023	Brazilian Pepper	3140	6210	25	71	< 23	< 284
T67 (Control)	11/01/2023	Brazilian Pepper	1490	1960	< 14	< 788	< 28	< 302
T67 (Control)	12/05/2023	Brazilian Pepper	1150	3370	< 15	< 721	< 25	< 276

Monitoring Results Tables

Table 18: Supplemental Direct Radiation– Indicators

Analysis: Gamma Dose			Units: µR/hr		
Station	**1st Qtr 2023**	**2nd Qtr 2023**	**3rd Qtr 2023**	**4th Qtr 2023**	**Annual Mean 2023**
NNW-6	3.3	3.9	3.8	3.4	**3.6**
NW-7	3.6	3.6	3.0	3.4	**3.4**
NW-8	3.4	4.0	4.0	3.0	**3.6**
WNW-3	3.3	4.0	4.0	3.7	**3.8**
WNW-6	3.7	3.0	3.4	3.1	**3.3**
W-8	3.5	3.0	3.0	3.6	**3.3**
ENE-1	2.8	3.4	3.4	3.1	**3.2**
T72	3.3	3.0	3.1	4.4	**3.4**
PTN-1[(1)]	3.5	3.8	3.8	4.1	**3.8**

[(1)] Indicator station with highest annual mean.

Monitoring Results Tables

Table 19: Supplemental Air Particulate - Gross Beta

Analysis: Gross Beta		Units: pCi/m^3
End Date	T52 (Indicator)	T56 (Indicator)
LLD ➔	0.01	0.01
01/02/2023	0.008	0.011
01/09/2023	0.011	0.008
01/16/2023	0.016	0.018
01/23/2023	0.004	0.010
01/30/2023	0.015	0.018
02/07/2023	0.008	0.010
02/15/2023	0.008	0.010
02/21/2023	0.008	0.012
02/28/2023	0.009	0.012
03/06/2023	0.011	0.014
03/13/2023	0.013	0.019
03/20/2023	0.016	0.017
03/27/2023	0.007	0.014
04/03/2023	0.011	0.011
04/10/2023	0.006	0.011
04/18/2023	0.005	0.006
04/25/2023	0.016	0.016
05/02/2023	0.013	0.013
05/09/2023	0.016	0.013
05/15/2023	0.020	0.013
05/23/2023	0.014	0.011
05/30/2023	0.009	0.008
06/05/2023	0.012	0.009
06/12/2023	0.009	0.013
06/20/2023	0.009	0.011
06/27/2023	0.011	0.007
07/06/2023	0.011	0.009
07/14/2023	0.018	0.016
07/20/2023	0.012	0.017
07/26/2023	0.014	0.025
08/02/2023	0.007	0.004
08/08/2023	0.015	0.011
08/14/2023	0.009	0.017
08/21/2023	0.010	0.010
08/29/2023	0.012	0.016
09/05/2023	0.014	0.012
09/12/2023	0.011	0.012
09/19/2023	0.009	0.015
09/26/2023	0.008	0.009
10/02/2023	0.004	0.006
10/09/2023	0.007	0.010
10/16/2023	0.014	0.014
10/23/2023	0.018	0.015
11/01/2023	0.018	0.017
11/07/2023	0.019	0.010
11/13/2023	0.006	0.005
11/20/2023	0.006	0.006
11/28/2023	0.012	0.010
12/05/2023	0.018	0.017
12/11/2023	0.019	0.022
12/19/2023	0.006	0.011
12/27/2023	0.012	0.014

Monitoring Results Tables

Table 20: Supplemental Air Particulate Composite - Gamma

Analysis: Gamma Isotopic				Units: pCi/m^3		
Location	**Collection Date**	**Be-7**	**K-40**	**Cs-134**	**Cs-137**	**Pb-210**
	REQUIRED LLD ➔	**--**	**--**	**0.05**	**0.06**	**--**
T52 (Indicator)	03/27/2023	0.1030	< 0.0146	< 0.0010	< 0.0007	< 0.0283
T56 (Indicator)	03/27/2023	0.1380	< 0.0200	< 0.0011	< 0.0010	< 0.0085
T52 (Indicator)	06/27/2023	0.1280	< 0.0237	< 0.0012	< 0.0009	0.0094
T56 (Indicator)	06/27/2023	0.0857	< 0.0111	< 0.0009	< 0.0006	< 0.0294
T52 (Indicator)	09/26/2023	0.0972	< 0.0128	< 0.0011	< 0.0009	< 0.0339
T56 (Indicator)	09/26/2023	0.0888	< 0.0217	< 0.0010	< 0.0011	< 0.0085
T52 (Indicator)	12/27/2023	0.1140	< 0.0263	< 0.0022	< 0.0016	< 0.1240
T56 (Indicator)	12/27/2023	0.0837	< 0.0161	< 0.0010	< 0.0010	< 0.0064

Monitoring Results Tables

Table 21: Supplemental Air Cartridges - Iodine-131

Analysis: Iodine-131		Units: pCi/m^3
End Date	T52 (Indicator)	T56 (Indicator)
LLD ➔	0.07	0.07
01/02/2023	<0.03	<0.03
01/09/2023	<0.03	<0.03
01/16/2023	<0.02	<0.02
01/23/2023	<0.02	<0.02
01/30/2023	<0.02	<0.02
02/07/2023	<0.02	<0.02
02/15/2023	<0.02	<0.02
02/21/2023	<0.02	<0.02
02/28/2023	<0.02	<0.02
03/06/2023	<0.02	<0.02
03/13/2023	<0.02	<0.02
03/20/2023	<0.03	<0.02
03/27/2023	<0.03	<0.02
04/03/2023	<0.04	<0.04
04/10/2023	<0.02	<0.02
04/18/2023	<0.02	<0.02
04/25/2023	<0.02	<0.02
05/02/2023	<0.02	<0.02
05/09/2023	<0.02	<0.02
05/15/2023	<0.02	<0.02
05/23/2023	<0.02	<0.02
05/30/2023	<0.02	<0.02
06/05/2023	<0.02	<0.02
06/12/2023	<0.02	<0.02
06/20/2023	<0.02	<0.02
06/27/2023	<0.02	<0.02
07/06/2023	<0.02	<0.02
07/14/2023	<0.02	<0.01
07/20/2023	<0.02	<0.02
07/26/2023	<0.02	<0.02
08/02/2023	<0.02	<0.02
08/08/2023	<0.02	<0.01
08/14/2023	<0.03	<0.02
08/21/2023	<0.03	<0.02
08/29/2023	<0.02	<0.02
09/05/2023	<0.01	<0.01
09/12/2023	<0.02	<0.02
09/19/2023	<0.04	<0.03
09/26/2023	<0.03	<0.03
10/02/2023	<0.02	<0.02
10/09/2023	<0.02	<0.02
10/16/2023	<0.02	<0.02
10/23/2023	<0.07	<0.07
11/01/2023	<0.01	<0.01
11/07/2023	<0.02	<0.02
11/13/2023	<0.02	<0.02
11/20/2023	<0.02	<0.02
11/28/2023	<0.02	<0.02
12/05/2023	<0.01	<0.01
12/11/2023	<0.01	<0.01
12/19/2023	<0.01	<0.01
12/27/2023	<0.02	<0.02

Monitoring Results Tables

Table 22: Supplemental Surface Water – Tritium and Gamma

Analysis: Gamma Isotopic																Units: pCi/L			
Location	End Date	H-3	K-40	Location	End Date	H-3	K-40	Location	End Date	H-3	K-40	Location	End Date	H-3	K-40
REQUIRED LLD ➔		3,000	--	REQUIRED LLD ➔		3,000	--	REQUIRED LLD ➔		3,000	--	REQUIRED LLD ➔		3,000	--
T08 (Indicator)	01/17/2023	3960	372	**T75** (Indicator)	01/17/2023	< 137	< 68	**T84** (Indicator)	01/17/2023	3849	349	**T97** (Indicator)	01/17/2023	3960	383
T08 (Indicator)	02/13/2023	3197	278	**T75** (Indicator)	02/13/2023	< 140	< 71	**T84** (Indicator)	02/13/2023	4001	390	**T97** (Indicator)	02/13/2023	4241	286
T08 (Indicator)	03/06/2023	5712	345	**T75** (Indicator)	03/06/2023	< 135	< 41	**T84** (Indicator)	03/06/2023	5812	293	**T97** (Indicator)	03/06/2023	5764	246
T08 (Indicator)	04/03/2023	15084	288	**T75** (Indicator)	04/03/2023	< 148	< 75	**T84** (Indicator)	04/03/2023	14432	261	**T97** (Indicator)	04/03/2023	14146	282
T08 (Indicator)	05/01/2023	24149	374	**T75** (Indicator)	05/01/2023	< 136	< 40	**T84** (Indicator)	05/01/2023	24111	364	**T97** (Indicator)	05/01/2023	24350	326
T08 (Indicator)	06/05/2023	18215	481	**T75** (Indicator)	06/05/2023	< 150	< 59	**T84** (Indicator)	06/05/2023	18697	307	**T97** (Indicator)	06/05/2023	18044	355
T08 (Indicator)	07/21/2023	8525	355	**T75** (Indicator)	07/21/2023	< 141	< 76	**T84** (Indicator)	07/21/2023	8138	270	**T97** (Indicator)	07/21/2023	8409	341
T08 (Indicator)	08/15/2023	7961	354	**T75** (Indicator)	08/15/2023	< 139	< 38	**T84** (Indicator)	08/15/2023	10053	327	**T97** (Indicator)	08/15/2023	10245	329
T08 (Indicator)	09/06/2023	8956	357	**T75** (Indicator)	09/06/2023	< 138	< 66	**T84** (Indicator)	09/06/2023	8578	280	**T97** (Indicator)	09/06/2023	8356	311
T08 (Indicator)	10/10/2023	12904	281	**T75** (Indicator)	10/10/2023	< 142	< 39	**T84** (Indicator)	10/10/2023	13221	325	**T97** (Indicator)	10/10/2023	10268	370
T08 (Indicator)	11/02/2023	14775	392	**T75** (Indicator)	11/02/2023	< 137	< 64	**T84** (Indicator)	11/02/2023	13658	318	**T97** (Indicator)	11/02/2023	13398	279
T08 (Indicator)	12/06/2023	9074	349	**T75** (Indicator)	12/06/2023	< 134	< 68	**T84** (Indicator)	12/06/2023	9901	270	**T97** (Indicator)	12/06/2023	10113	258

Monitoring Results Tables

Table 23: Supplemental Shoreline Sediment - Gamma

Analysis: Gamma Isotopic						Units: pCi/kg (dry)				
Location	**Collection Date**	**Be-7**	**K-40**	**Co-60**	**Cs-137**	**Pb-210**	**Ra-226**	**Th-232**	**U-235**	**U-238**
	REQUIRED LLD ➔	--	--	--	**180**	--	--	--	--	--
T01 (Indicator)	01/18/2023	< 62	< 153	< 10	< 9	343	634	< 43	40	207
T02 (Indicator)	01/18/2023	< 123	554	< 14	< 13	329	1150	< 83	73	182
T03 (Indicator)	01/18/2023	< 88	442	< 8	< 11	378	1050	< 41	< 17	< 171
T04 (Indicator)	01/18/2023	248	406	< 14	< 14	355	1120	< 67	71	273
T07 (Indicator)	01/18/2023	< 139	183	< 15	< 18	< 542	< 391	< 69	< 25	< 167
T08 (Indicator)	01/18/2023	< 119	< 162	< 11	< 12	375	1170	< 43	< 24	< 207
T10 (Indicator)	01/18/2023	< 182	596	< 16	< 19	< 1300	< 628	< 73	< 40	< 339
T84* (Indicator)	01/18/2023	< 139	471	< 15	< 16	< 647	244	< 67	< 26	< 266
T85* (Indicator)	01/18/2023	< 154	578	< 14	< 14	< 1210	939	< 69	111	457
T84* (Indicator)	08/15/2023	< 146	121	< 12	< 11	489	557	< 46	59	304
T85* (Indicator)	08/15/2023	< 196	391	< 13	< 14	< 1410	827	< 64	101	400

* Note that site T84 is the same location as site T05, and site T85 is the same location as site T06.

Monitoring Results Tables

Table 24: Supplemental Food Crops - Gamma

Analysis: Gamma Isotopic				Units: pCi/kg (wet)		
Location	Collection Date	Sample Type	Be-7	K-40	Cs-137	Ra-226
		REQUIRED LLD ➔	--	--	80	--
T43 (Indicator)	01/19/2023	Corn & Green Beans	< 67	2420	< 9	< 165
T44 (Indicator)	01/19/2023	Corn & Green Beans	< 75	3280	< 6	< 231
T45 (Indicator)	02/13/2023	Corn & Green Beans	< 64	3430	< 8	< 168

Attachment 3

Interlaboratory Comparison Program Results

1.0 Summary

The Interlaboratory Comparison 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 State laboratory participated in MAPEP 48 and 49. These satisfied the requirement of Control 5.3 of the ODCM for the Interlaboratory Comparison Program.

Attachment 3

Interlaboratory Comparison Program Results

Table 25: DOE's Mixed Analyte Performance Evaluation Program (MAPEP) 48 RESULTS

Program status	Radionuclide	Result	Ref. Value	Flag (Evaluation)	Acceptance Range
Matrix: RdF Air Filter Bq/filter					
Required	MN54	2.133	2.14	A	1.50 - 2.78
Required	CO57	0.618	0.661	A	0.463 - 0.859
Required	CO60	1.003	1.05	A	0.74 - 1.37
	ZN65	2.402	2.25	A	1.58 - 2.93
Required	CS134	1.336	1.52	A	1.06 - 1.98
Required	CS137	0.608	0.630	A	0.441 - 0.819
Matrix: GrF Air Filter Bq/filter					
Required	Gross Beta	1.361	1.49	A	0.75 - 2.24
Required	Gross Alpha	0.984	0.97	A	0.29 - 1.65
Matrix: MaS Soil Bq/kg					
Required	K40	519	574	A	402 - 746
	MN54	1171.67	1230	A	861 - 1599
	CO57	562	698	A	489 - 907
	CO60	721.17	795	A	557 - 1034
	ZN65	962.33	990	A	693 - 1287
	CS134	-0.54		A	False Positive Test
Required	CS137	1.02		A	False Positive Test
Matrix: MaW Water Bq/L					
Required	H3	581.13	573	A	401 - 745
	MN54	10.447	11.3	A	7.9 - 14.7
	CO57	0.021		A	False Positive Test
Required	CO60	6.531	7.24	A	5.07 - 9.41
	ZN65	14.75	15.3	A	10.7 - 19.9
Required	CS134	8.738	9.6	A	6.7 - 12.5
Required	CS137	8.502	8.7	A	6.1 - 11.3
	SR90	0.02		A	False Positive Test
Matrix: RdV Vegetation, Bq/sample					
	MN54	8.417	8.03	A	5.62 - 10.44
	CO57	8.031	6.93	A	4.85 - 9.01
Required	CO60	6.604	6.51	A	4.56 - 8.46
	ZN65	7.865	7.43	A	5.20 - 9.66
	CS134	7.55	7.60	A	5.32 - 9.88
Required	CS137	0.018		A	False Positive Test

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

A false positive test with an "A" designation flag identifies the result as less than the detectable activity, since MAPEP does not report zero values. Sensitivity Evaluation has no acceptance range but an identified value at low activity.

Attachment 3

Interlaboratory Comparison Program Results

Table 26: DOE's Mixed Analyte Performance Evaluation Program (MAPEP) 49 RESULTS

Program status	Radionuclide	Result	Ref. Value	Flag (Evaluation)	Acceptance Range
Matrix: RdF Air Filter Bq/filter					
Required	MN54	1.577	1.57	A	1.10 - 2.04
Required	CO57	1.582	1.63	A	1.14 - 2.12
Required	CO60	0.025		A	False Positive Test
	ZN65	2.027	1.89	A	1.32 - 2.46
Required	CS134	1.549	1.60	A	1.12 - 2.08
Required	CS137	0.046		A	False Positive Test
Matrix: GrF Air Filter Bq/filter					
Required	Gross Beta	0.962	0.927	A	0.464 - 1.391
Required	Gross Alpha	0.284	0255	A	0.077 - 0.434
Matrix: MaS Soil Bq/kg					
Required	K40	530.33	574	A	402 - 746
	MN54	1.85		N (1)	False Positive Test
	CO57	927.5	1060	A	742 - 1378
	CO60	843	898	A	629 -1167
	ZN65	1180	1160	A	812 - 1508
	CS134	698.04	693	A	485 - 901
Required	CS137	1757.5	1810	A	1267 - 2353
Matrix: MaW Water Bq/L					
Required	H3	0.7		A	False Positive Test
	MN54	12.1	12.7	A	8.9 - 16.5
	CO57	17.8	19.3	A	13.5 - 25.1
Required	CO60	0.053		A	False Positive Test
	ZN65	19	19.1	A	13.4 - 24.8
Required	CS134	11.074	11.3	A	7.9 - 14.7
Required	CS137	8.62	8.7	A	6.1 - 11.3
	SR90	7.5	7.31	A	5.12 - 9.50
Matrix: RdV Vegetation, Bq/sample:					
	MN54	2.54	2.56	A	1.79 - 3.33
	CO57	4.463	4.24	A	2.97 - 5.51
Required	CO60	2.627	2.79	A	1.95 - 3.63
	ZN65	0.134		A	False Positive Test
	CS134	4.599	4.98	A	3.49 - 6.47
Required	CS137	-0.014		A	False Positive Test

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

A false positive test with an "A" designation flag identifies the result as less than the detectable activity, since MAPEP does not report zero values. Sensitivity Evaluation has no acceptance range but an identified value at low activity.

(1) See Attachment 1, Table 7, Samples Deviations Table, Comment 2

Attachment 4

Industry Initiative Ground Water Protection Program 2023

1.0 Description of Program

Turkey Point Nuclear maintains a sampling and analysis program to meet procedural requirements. The procedures that govern the performance are EV-AA-100-1001, *Fleet Ground Water Protection Program Implementing Guideline* and 0-ADM-654, *Ground Water Protection Program*.

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

Sample assay is performed by a private contractor GEL labs.

2.0 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 average was 11,498 pCi/L in 2023 with a max concentration of 24,350 pCi/L. This supports the expectation to see tritium in subsurface water collected either on-site or off-site close to the (within the Owner Controlled Area) cooling canal system. Twenty-eight (28) wells were involved in the 2023 monitoring program; some locations have multiple (two or three) depths.

Samples are analyzed for Tritium & Gamma emitters. As conditions warrant, analysis included Fe-55, Ni-63, Sr-89/90 and alpha (all were < LLD).

3.0 Results

The tritium results for the groundwater wells were from <MDA to 4,330 pCi/L. All results were less than the limits of the Offsite Dose Calculation Manual, Table 5.1-2, Reporting Levels for Radioactivity Concentrations in Environmental Samples. Storm drain outfalls occasionally are below the tidal mark of the canal and will have ingress of canal water into the storm drain. The higher levels of tritium in the storm drain section are due to the canal water ingress into the storm drain.

Tabular results follow:

Monitoring Results Tables

Table 27: Ground Water – Tritium

Analysis: Tritium		Units: pCi/L		
Location	First Quarter 2023 H-3	Second Quarter 2023 H-3	Third Quarter 2023 H-3	Fourth Quarter 2023 H-3
REQUIRED LLD ➔	**3,000**	**3,000**	**3,000**	**3,000**
PTPED-1	170	113	195	454
CD-1	365	383	216	635
P-94-2	242	---	283	---
P-94-4	957	902	493	1030
STP-1	22	---	125	---
PTN-MW-1s	<MDC	---	<MDC	---
PTN-MW-1i	344	---	<MDC	---
PTN-MW-1d	795	---	422	---
PTN-MW-2s	9	---	<MDC	---
PTN-MW-3s	4	---	19.3	---
PTN-MW-4s	<MDC	150	<MDC	299
PTN-MW-4i	3540	<MDC	3470	462
PTN-MW-4d	59	<MDC	<MDC	119
PTN-MW-5s	91	19.7	<MDC	205
PTN-MW-5i	16	402	1150	566
PTN-MW-5d	934	767	1180	1300
PTN-MW-6SR	36.3	---	322	---
PTN-MW-6DR	439	---	2.13	---
PTN-MW-7s	1340	1400	926	2930
PTN-MW-7i	1530	1230	95.3	159
PTN-MW-7d	109	156	31.7	114
PTN-MW-8s	928	3200	4330	2510
PTN-MW-9s	1070	803	390	1280
PTN-MW-10s	14	---	<MDC	---
PTN-MW-10i	59	---	44.6	---
PTN-MW-10d	<MDC	---	<MDC	---
PTN-MW-11s	609	374	155	823
PTN-MW-12s	1050	656	1150	1530
NE StrmDrain	884	---	377	400
SE StrmDrain	3870	3160	---	---
W StrmDrain	(1)	1290	---	---
CRF StrmDrain	Dry	Dry	Dry	Dry

(1) Storm Drain submerged underwater at time of collection.

MDCs are calculated a-posteriori values. Target isotope was analyzed for but not detected above the MDC and LLD.

Industry Initiative Ground Water Protection Program 2023

D. List of wells and their locations

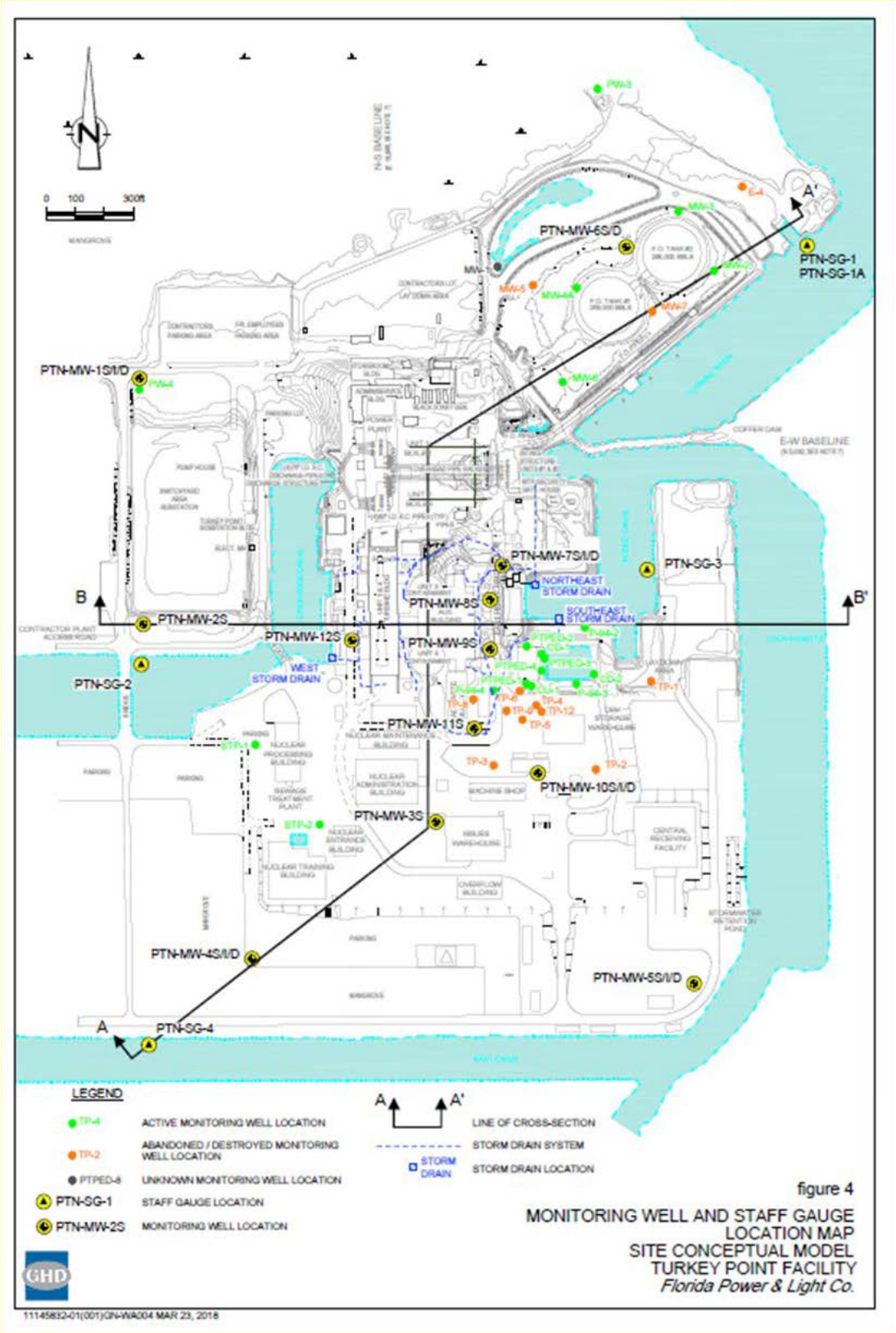
Well Name	Location
PTN-MW-1s PTN-MW-1i PTN-MW-1d	Northeast of Switch Yard, South of entrance road to Fossil Plant
PTN-MW-2s	South Switch Yard by parking lot
PTN-MW-3s	Northeast of new Issues Warehouse
PTN-MW-4s PTN-MW-4i PTN-MW-4d	SW corner of parking lot South of Training Bldg.
PTN-MW-5s PTN-MW-5i PTN-MW-5d	SW of CRF, by canal
PTN-MW-6SR PTN-MW-6DR	NE of site in the berm for fossil oil tanks
PTN-MW-7s PTN-MW-7i PTN-MW-7d	NE of RCA, by Neutralization Tank
PTN-MW-8s	Near U3 RWST
PTN-MW-9s	Near U4 RWST
PTN-MW-10s PTN-MW-10i PTN-MW-10d	SE of Radwaste Bldg. by S/G Bldg.
PTN-MW-11s	South of truck entrance to Rad Waste Bldg.
PTN-MW-12s	West of Condenser Polisher road
STP-1	West of Maintenance Bldg. on corner or road into parking lot
P-94-4	East of Dressout Building, under delay fence
P-94-2	By Neutralization Basin, East of the RCA
CD-1	By Neutralization Basin, East of the RCA
PTPED-1	By Neutralization Basin, East of the RCA

Note: s, i and d refer to well depth: shallow - 20 ft., intermediate - 40 ft. and deep - 60 ft
Maps depicting the well locations follow.

Attachment 4

Industry Initiative Ground Water Protection Program 2023

Figure 5: Onsite Tritium Monitoring Wells



Attachment 5 **Page 1 of 1**

ERRATA Data 2023

Significant errors should be corrected within one year of discovery, and the correction may be submitted with the next (normally scheduled) submittal of the AREOR as follows. A brief narrative explanation of the errors should be included in, "Errata/Corrections to Previous AREORs," "Supplemental Information." The narrative should include a statement that the affected pages, in their entirety, are included as attachments to the AREOR. Additionally, the affected, corrected pages, in their entirety, should be submitted as an attachment to the AREOR. The corrected pages should reference the affected calendar year and should contain revision bars in the margins of the page to indicate the locations of the changes. If submitting corrections to multiple AREORs, make a separate attachment for each of the affected years. Other methods of correcting previous AREORs may be used provided the corrections are clearly and completely described.

Significant errors include:

- Inaccurate reporting of samples collected and analyzed.
- Inaccurate reporting of sample results.
- Omissions that impede the NRC's ability to adequately assess the information supplied by the licensee, or other errors that alter the intent of the report.

1.0 List of changes from the 2022 AREOR

There were no corrections to previous reports found in 2023.