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ATTN: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Prairie Island Nuclear Generating Plant, Units 1 and 2
Docket Nos. 50-282 and 50-306
Renewed Facility Operating License Nos. DPR-42 and DPR-60

Prairie Island Independent Spent Fuel Storage Installation
Docket No. 72-10
Renewed Materials License No. SNM-2506

2025 Annual Radiological Environmental Monitoring Program Report

Pursuant to the requirements of Prairie Island Nuclear Generating Plant Technical Specifications, Section 5.6.2 and ISFSI Technical Specifications, Section 5.2, Northern States Power Company, a Minnesota corporation, doing business as Xcel Energy (hereafter "NSPM"), submits the enclosed Annual Radiological Environmental Monitoring Program Report for the period of January 1, 2025 through December 31, 2025.

Summary of Commitments

This letter makes no new commitments and no revisions to existing commitments.

Bryan Currier
Plant Manager, Prairie Island Nuclear Generating Plant
Northern States Power Company – Minnesota

Enclosure

cc: Administrator, Region III, USNRC
Project Manager, Prairie Island, USNRC
Resident Inspector, Prairie Island, USNRC
Director of NMSS, USNRC
State of Minnesota
Grant Johnson, Prairie Island Tribal Council President

ENCLOSURE

ANNUAL REPORT TO THE UNITED STATES NUCLEAR REGULATORY COMMISSION

Radiological Environmental Monitoring Program

JANUARY 1, 2025 - DECEMBER 31, 2025

74 pages to follow

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XCEL ENERGY CORPORATION

PRAIRIE ISLAND NUCLEAR GENERATING PLANT

ANNUAL REPORT
to the
UNITED STATES NUCLEAR REGULATORY COMMISSION

Radiological Environmental Monitoring Program

January 1 to December 31, 2025

Docket No. 50-282 Renewed Operating License No. DPR-42
Docket No. 50-306 Renewed Operating License No. DPR-60

ISFSI
Docket No. 72-10 Renewed License No. SNM-2506

Prepared under Contract by

Microbac Laboratories - Northbrook

Project No. 8010

Approved: 04/30/2026

Michelle L. Z. Carpenter, Ph.D.
Laboratory Director

PREFACE

The staff of Microbac Laboratories - Northbrook was responsible for the acquisition of data presented in this report. Samples were collected by members of the staff of the Prairie Island Nuclear Generating Plant, operated by Northern States Power Co. – Minnesota, for XCEL Energy Corporation. The report was prepared by Microbac Laboratories - Northbrook.

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1.0 INTRODUCTION

This report summarizes and interprets results of the Radiological Environmental Monitoring Program (REMP) conducted by Microbac Laboratories - Northbrook at the Prairie Island Nuclear Generating Plant, Red Wing, Minnesota, during the period January - December, 2025.

This program monitors the levels of radioactivity in the air, terrestrial, and aquatic environments in order to assess the impact of the plant on its surroundings.

Tabulations of the individual analyses made during the year are not included in this report. These data are included in a reference document (Microbac Laboratories - Northbrook, 2025) available at Prairie Island Nuclear Generating Plant.

Prairie Island Nuclear Generating Plant is located on the Mississippi River in Goodhue County, Minnesota, owned by Xcel Energy Corporation and operated by Northern States Power Co.- Minnesota. The plant has two 575 MWe pressurized water reactors. Unit 1 achieved initial criticality on 1 December 1973. Commercial operation at full power began on 16 December 1973. Unit 2 achieved initial criticality on 17 December 1974. Commercial operation at full power began on 21 December 1974.

2.0 SUMMARY

The Radiological Environmental Monitoring Program (REMP) required by the U.S. Nuclear Regulatory Commission (NRC) Offsite Dose Calculation Manual for the Prairie Island Nuclear Generating Plant and the Independent Spent Fuel Storage Installation (ISFSI) is described. Results for 2025 are summarized and discussed.

Program findings show background levels of radioactivity in the environmental samples collected in the vicinity of the Prairie Island Nuclear Generating Plant.

3.0 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM (REMP)

3.1 Program Design and Data Interpretation

The purpose of the Radiological Environmental Monitoring Program (REMP) at the Prairie Island Nuclear Generating Plant is to assess the impact of the plant on its environment. For this purpose, samples are collected from the air, terrestrial, and aquatic environments and analyzed for radioactive content. In addition, ambient gamma radiation levels are monitored by thermoluminescent dosimeters (TLDs).

Sources of environmental radiation include the following:

(1) Natural background radiation arising from cosmic rays and primordial radionuclides;

(2) Fallout from atmospheric nuclear detonations;

(3) Releases from nuclear power plants;

(4) Industrial and medical radioactive waste; and

(5) Fallout from nuclear accidents.

In interpreting the data, effects due to the plant must be distinguished from those due to other sources.

A major interpretive aid in assessment of these effects is the design of the monitoring program at the Prairie Island Plant which is based on the indicator-control concept. Most types of samples are collected both at indicator locations (nearby, downwind, or downstream) and at control locations (distant, upwind, or upstream). A plant effect would be indicated if the radiation level at an indicator location was significantly larger than that at the control location. The difference would have to be greater than could be accounted for by typical fluctuations in radiation levels arising from other sources.

An additional interpretive technique involves analyses for specific radionuclides present in the environmental samples collected from the plant site. The plant's monitoring program includes analyses for tritium and iodine-131. Most samples are analyzed for gamma-emitting isotopes with results for the following groups quantified: zirconium-95, cesium-137, cerium-144, beryllium- 7, and potassium-40. The first three gamma-emitting isotopes were selected as radiological impact indicators because of the different characteristic proportions in which they appear in the fission product mix produced by a nuclear reactor and that produced by a nuclear detonation. Each of the three isotopes is produced in roughly equivalent amounts by a reactor: each constitutes about 10% of the total activity of fission products 10 days after reactor shutdown. Alternatively, 10 days after a nuclear explosion, the contributions of zirconium-95, cerium-144, and cesium-137 to the activity of the resulting debris are in the approximate ratio 4:1:0.03 (Eisenbud, 1963). Beryllium-7 is of cosmogenic origin and potassium-40 is a naturally-occurring isotope. They were chosen as calibration monitors and should not be considered radiological impact indicators.

The other group quantified consists of niobium-95, ruthenium-103 and -106, cesium-134, barium-lanthanum-140, and cerium-141. These isotopes are released in small quantities by nuclear power plants, but to date their major source of injection into the general environment has been atmospheric nuclear testing. Nuclides of the final group, manganese-54, iron-59, cobalt-58 and - 60, and zinc-65, are activation products and arise from activation of corrosion products. They are typical components of a nuclear power plant's effluents, but are not produced in significant quantities by nuclear detonations.

3.1 Program Design and Data Interpretation (continued)

Other means of distinguishing sources of environmental radiation are employed in interpreting the data. Current radiation levels are compared with previous levels, including those measured before the plant became operational. Results of the plant's monitoring program can be related to those obtained in other parts of the world. Finally, results can be related to events known to cause elevated levels of radiation in the environment, e.g., atmospheric nuclear detonations.

3.2 Program Description

The sampling and analysis schedule for the radiological environmental monitoring program at Prairie Island is summarized in Table 5.1 and briefly reviewed below. Table 5.2 defines the sampling location codes used in Table 5.1 and specifies for each location its type (indicator or control) and its distance, direction, and sector relative to the reactor site or ISFSI facility, as appropriate. To assure that sampling is carried out in a reproducible manner, detailed sampling procedures have been prescribed (Prairie Island Nuclear Generating Plant, 2025). Maps of fixed sampling locations are included in Appendix D.

To monitor the airborne environment, air is sampled by continuous pumping at six stations, four site boundary indicators (P-2, P-3, P-4 and P-7), located in the highest calculated D/Q sectors, one community indicator (P-6), and one control (P-1). The particulates are collected on membrane filters, airborne iodine is trapped by activated charcoal canisters. Particulate filters are analyzed for gross beta activity and charcoal canisters for iodine-131. Quarterly composites of particulate filters from each location are analyzed for gamma-emitting isotopes.

Offsite ambient gamma radiation is monitored at thirty-four locations, using $CaSO_4$:Dy dosimeters with four sensitive areas at each location: ten in an inner ring in the general area of the site boundary, fifteen in the outer ring within a 4-5 mile radius, eight at special interest locations, and one control location, 11.1 miles distant from the plant. They are replaced and measured quarterly.

Ambient gamma radiation is monitored at the Independent Spent Fuel Storage Installation (ISFSI) Facility by twenty $CaSO_4$:Dy dosimeters. Twelve dosimeters are located inside of the earthen berm in direct line of sight from the storage casks and eight dosimeters are located outside of the earthen berm. They are replaced and measured quarterly.

To monitor the terrestrial environment, green leafy vegetables (cabbage) are collected annually from the highest D/Q garden and a control location (P-38), and analyzed for gamma-emitting isotopes, including iodine-131. Corn is collected annually only if fields are irrigated with river water and analyzed for gamma-emitting isotopes. Well water and ground water are collected quarterly from five locations near the plant and analyzed for tritium and gamma-emitting isotopes.

River water is collected weekly at two locations, one upstream of the plant (P-5) and one downstream (P-6, Lock and Dam No.3). Monthly composites are analyzed for gamma-emitting isotopes. Quarterly composites are analyzed for tritium.

Drinking water is collected weekly from the City of Red Wing well. Monthly composites are analyzed for gross beta, iodine-131, and gamma-emitting isotopes. Quarterly composites are analyzed for tritium.

3.2 Program Description (continued)

The aquatic environment is also monitored by semi-annual upstream and downstream collections of fish, invertebrates, and bottom sediments. Shoreline sediment is collected semi- annually from one location. All samples are analyzed for gamma-emitting isotopes.

3.3 Program Execution

The Program was executed as described in the preceding section in 2025 with the following exceptions:

Upstream river sample was not taken due to hazardous ice conditions. (See section 4.3 for details).

Air particulate filters and charcoal canisters damaged by water leakage from water sample. (See section 4.3 for details).

Air sampler found with less than expected sample time. (See section 4.3 for details).

3.4 Laboratory Procedures

The iodine-131 analyses in drinking water were made using a sensitive radiochemical procedure which involves separation of the iodine using an ion-exchange method, solvent extraction and subsequent beta counting.

Gamma-spectroscopic analyses were performed using high-purity germanium (HPGe) detectors. Levels of iodine-131 in cabbage and natural vegetation and concentrations of airborne iodine-131 in charcoal samples were determined by gamma spectroscopy.

Tritium concentrations were determined by liquid scintillation.

Analytical Procedures used by Microbac Laboratories - Northbrook are on file and are available for inspection. Procedures are based on those prescribed by the Health and Safety Laboratory of the U.S. Department of Energy, Edition 28, 1997, U.S. Environmental Protection Agency for Measurement of Radioactivity in Drinking Water, 1980, and the U.S. Environmental Protection Agency, EERF, Radiochemical Procedures Manual, 1984.

Microbac Laboratories - Northbrook has a comprehensive quality control/quality assurance program designed to assure the reliability of data obtained. Details of the QA Program are presented elsewhere (Microbac Laboratories - Northbrook, 2025). The QA Program includes participation in Interlaboratory Comparison (crosscheck) Programs. Results obtained in the crosscheck programs are presented in Appendix A.

3.5 Program Modifications

None.

3.6 Land Use Census

In accordance with the Prairie Island Nuclear Generating Plant Offsite Dose Calculation Manual, H4, (ODCM) a land use census is conducted in order to identify the location of the nearest residence, nearest milk animals, and the nearest garden of greater than 500 ft^2 producing fresh leafy vegetables in each of the 16 meteorological sectors within a distance of 5 miles. This census is conducted at least once per 12 months between the dates of May 1 and September 30. If new locations yield a calculated dose or dose equivalent (via the same exposure pathway) twenty percent greater than the required locations per the ODCM, then the new locations are added to the radiological environmental monitoring program within 30 days, and sampling locations having lower calculated doses or a lower dose commitment may be deleted from this monitoring program after September of the year in which the land use census was conducted.

This land use census ensures the updating of the radiological environmental monitoring program should sampling locations change within the 5-mile radius from the plant.

The Land Use Census was conducted during September 2025. The ranking of the highest D/Q garden remained the same for 2025 as 2024, 5016 Lock & Dam Rd., Welch, MN (SSE at 0.6 miles). The highest D/Q residence remained the same for 2025 as for 2024, 1860 Edoka St., Welch, MN (WNW at 0.7 miles).

The Minnesota and Wisconsin Departments of Natural Resources were both consulted and both confirmed that no irrigation permits had been issued the past year for crop fields within the file mile Mississippi River area downstream of the Prairie Island Plant. Plant biologists conducted visual surveys while electro-fishing and visual observations were taken while driving. No irrigating was observed. Therefore, no crop sampling was performed.

There are no dairy farms within a 5-mile radius of the plant therefore no milk samples were collected.

Vegetation samples were taken from one close garden in the vicinity of the plant this year plus a control site.

There were no land use changes within five miles of the plant resulting in new special interest areas such as: new population centers, new residences, new schools or recreation centers.

4.0 RESULTS AND DISCUSSION

All scheduled collections and analyses were made in 2025 except those listed in Table 5.3..

The results are summarized in Table 5.4 in a format recommended by the Nuclear Regulatory Commission in Regulatory Guide 4.8. For each type of analysis of each sampled medium, this table lists the mean and range for all indicator locations and for all control locations. The locations with the highest mean and range are also shown.

4.1 Atmospheric Nuclear Detonations and Nuclear Accidents

There were no reported accidents involving significant release to the environment at nuclear reactor facilities in 2025. The Fukushima Daiichi nuclear accident occurred March 11, 2011.

There were no reported atmospheric nuclear tests in 2025. The last reported test was conducted on October 16, 1980 by the People's Republic of China.

4.2 Summary of Preoperational Data

The following constitutes a summary of preoperational studies conducted at the Prairie Island Nuclear Power Plant during the years 1970 to 1973, to determine background levels expected in the environment, and provided, where applicable, as a means for comparison with present day levels. Strict comparisons, however, are difficult since background levels of radiation were much higher in these years due to radioactive fallout from the atmosphere. Gross beta measurements in fallout declined yearly from a level of 12,167 pCi/m^3 to 1,020 pCi/m^3, and these declining values are reflected throughout the various media tested.

In the air environment, ambient gamma radiation (TLDs) averaged 9.4 mR/4 weeks during pre-operational studies. Gross beta in air particulates declined from levels of 0.38 to 0.037 pCi/m^3. Average present day levels have stabilized at around 0.025 pCi/m^3. Airborne radioiodine remained below detection levels.

In the terrestrial environment of 1970 to 1973, milk, agricultural crops, and soil were monitored. In milk samples, low levels of Cs-137, I-131, and Sr-90 were detected. Cs-137 levels declined from 16.5 to 8.6 pCi/L. Present day measurements for both Cs-137 and I-131 are below detection levels. Agricultural crop measurements averaged 57.7 pCi/g for gross beta and 0.47 pCi/g for Cs-137. Gross beta measured in soil averaged 52 pCi/g.

The aqueous environment was monitored by testing of river, well and lake waters, bottom sediments, fish, aquatic vegetation and periphyton. Specific location comparison of drinking, river and well water concentrations for tritium and gross beta are not possible. However, tritium background levels, measured at eight separate locations, declined steadily from an average concentration of 1020 pCi/L to 490 pCi/L. Present day environmental levels of tritium measure below a detection limit of approximately 160 pCi/L. Values for gross beta, measured from 1970 to 1973, averaged 9.9 pCi/L in downstream Mississippi River water, 8.2 pCi/L for well water, and 11.0 pCi/L for lake water. Gamma emitters were below the lower limit of detection (LLD). In bottom sediments, gross beta background levels were determined at 51.0 pCi/g. Cs-137 activity during preoperational studies in 1973 measured 0.25 pCi/g upstream and 0.21 pCi/g downstream. The lower levels occasionally observed today can still be attributed to residual activity from atmospheric fallout. Gross beta in fish, measured in both flesh and skeletal samples, averaged 7.3 and 11.7 pCi/g, respectively. Gross beta background levels in aquatic vegetation, algae and periphyton samples measured 76.0 pCi/g, 46.0 pCi/g, and 13.6 pCi/g, respectively.

4.3 Program Findings

Results obtained show background levels of radioactivity in the environmental samples collected in the vicinity of the Prairie Island Nuclear Generating Plant.

Ambient Radiation (TLDs)

Ambient radiation was measured in the general area of the site boundary, at the outer ring 4 - 5 mi. distant from the Plant, at special interest areas and at one control location. The means were from 17.3 mR/91 days at both the inner ring and outer ring locations. The mean at special interest locations was 17.1 mR/91 days and 18.2 mR/91 days at the control location. Dose rates measured at the inner and outer ring and the control locations were comparable to 2024 dose rates and consistent with results from previous years. The results are tabulated below.

The 2025 facility-related dose evaluation, conducted per ANSI/HPS N13.37-2014 Environmental Dosimetry – Criteria for System Design and Implementation, identified five monitoring locations with positive minimum differential dose values relative to historical baseline conditions. Detailed evaluation of these locations, including comparison with nearby REMP TLDs and Protected Area OSLDs, demonstrated that the elevated readings were not attributable to a single common source and were directionally and spatially independent. Dose extrapolations to the nearest members of the public were performed in accordance with ANSI/HPS N13.37-2014, including continuous residential occupancy, inverse square law adjustments where applicable, roentgen-to-mrem conversion, and residential shielding. In all cases, the calculated doses for residences in the affected directions were “not detected”.

No plant effect on ambient gamma radiation measurements was indicated (Figure 5-1).

Year	Average (Inner and Outer Rings)	Control		Year	Average (Inner and Outer Rings)	Control
2002	17.4	16.9		2014	15.3	16.2
2003	16.2	16.0		2015	16.0	17.4
2004	17.6	17.6		2016	16.7	17.4
2005	16.8	16.3		2017	16.1	16.3
2006	16.6	16.6		2018	16.6	17.4
2007	17.5	17.7		2019	15.8	15.3
2008	16.9	17.1		2020	15.4	14.2
2009	15.9	16.3		2021	16.4	15.9
2010	16.0	16.0		2022	16.7	17.5
2011	15.7	15.7		2023	15.8	16.3
2012	16.5	16.5		2024	15.4	16.6
2013	15.1	16.0		2025	17.3	18.2

Ambient gamma radiation as measured by thermoluminescent dosimetry.
Average quarterly dose rates (mR/91 days).

ISFSI Facility Operations Monitoring

Ambient radiation was measured inside the ISFSI earth berm, outside the ISFSI earth berm and at two special locations between the plant ISFSI and the Prairie Island Indian Community. The mean dose rates averaged 215.1 mR/91 days inside the ISFSI earth berm and 26.1 mR/91 days outside the ISFSI earth berm. Three additional casks were placed on the ISFSI pad in 2025, a total of fifty-five loaded casks remain. The higher levels inside the earth berm are expected, due to the loaded spent fuel casks being in direct line-of-sight of the TLDs.

Ambient radiation levels measured outside the earth berm show a slight increase as compared to other offsite dose rates around the plant. The cumulative average of the two special Prairie Island Indian Community TLDs (Locations P-07S and P-08S) measured 18.1 and 16.2 mR/91 days. Although the skyshine neutron dose rates are not directly measured, the neutron levels measured next to the casks are below the levels predicted in the ISFSI SAR Report, Table 7A-4, "TN-40 Dose Rates at Short Distances". Therefore, the skyshine dose rates at farther distances from the casks should be at or below the calculated dose rates. No spent fuel storage effect on offsite ambient gamma radiation was indicated (Fig. 5-1).

Airborne Particulates

Typically, the highest averages for gross beta occur during the months of January and December, and the first and fourth quarters, as in 2001 through 2006, and also in 2008 through 2024. The elevated activity observed in 2007 was attributed to construction activity in the area, an increase in dust and consequent heavier particulate filter loading.

Average annual gross beta concentrations in airborne particulates were 0.028 pCi/m^3 for the indicator location and 0.027 pCi/m^3 for the control location and are similar to levels observed from 2001 through 2006 and 2008 to 2024. The results are tabulated below.

Year	Average of Indicators	Control
	Concentration (pCi/ m^3)	
2001	0.023	0.023
2002	0.028	0.023
2003	0.027	0.025
2004	0.025	0.026
2005	0.027	0.025
2006	0.026	0.025
2007	0.037	0.031
2008	0.028	0.027
2009	0.029	0.029
2010	0.025	0.025
2011	0.026	0.027
2012	0.031	0.032
2013	0.027	0.028
2014	0.026	0.026
2015	0.029	0.029
2016	0.027	0.027
2017	0.026	0.025
2018	0.027	0.027
2019	0.023	0.023
2020	0.027	0.025
2021	0.030	0.029
2022	0.030	0.031
2023	0.033	0.033
2024	0.029	0.027
2025	0.028	0.027

Average annual gross beta concentrations in airborne particulates.

Gamma spectroscopic analysis of quarterly composites of air particulate filters yielded similar

results for indicator and control locations. Beryllium-7, which is produced continuously in the upper atmosphere by cosmic radiation (Arnold and Al-Salih, 1955), was detected in all samples, with an average activity of 0.067 pCi/m^3 for indicator locations and 0.063 pCi/m^3 at the control location. All other isotopes were below the lower limit of detection.

There was no indication of a plant effect.

Airborne Iodine

Weekly levels of airborne iodine-131 were below the lower limit of detection (LLD) of 0.03 pCi/m^3 in all samples. There was no indication of a plant effect.

Drinking Water

In drinking water from the City of Red Wing well, tritium activity measured below a detection limit of 182 pCi/L for all samples.

Gross beta concentrations averaged 8.9 pCi/L throughout the year, ranging from 5.4–11.1 pCi/L. These concentrations are consistent with the 2024 average of 10.5 pCi/L and with levels observed from 2000 through 2023. The most likely contribution is the relatively high levels of naturally-occurring radium. Gamma spectroscopy indicates the presence of lead and bismuth isotopes, which are daughters of the radium decay chain. There is no indication from the 2025 data of any effect of plant operation.

Year	Gross Beta concentration (pCi/L)
2000	10.1
2001	8.3
2002	8.7
2003	9.9
2004	9.8
2005	11.5
2006	13.4
2007	11.6
2008	11.6
2009	11.4
2010	11.7
2011	12.4
2012	11.8
2013	12.2
2014	11.5
2015	11.4
2016	12.3
2017	10.1
2018	10.2
2019	9.7
2020	8.6
2021	9.2
2022	8.9
2023	9.8
2024	10.5
2025	8.9

Average annual gross beta concentrations in drinking water.

River Water

Analyses for H-3 in river water was below an LLD of 182 pCi/L for the four quarterly composites from the upstream location for 2025. No sample was taken at location P-5 (Upstream of Plant) the week of 1/19/25 due to hazardous ice conditions. H-3 was detected at the River Water Lock and Dam #3 location P-6 in the fourth quarter composite sample at a concentration of 228 ± 94 pCi/L. Further analysis of the constituent monthly and weekly samples identified positive results for the October composite of (464 ± 117 pCi/L), and the weekly samples from 10/21/25 at a concentration of (881 ± 131 pCi/L) and from 10/28/25 at a concentration of (1390 ± 148 pCi/L).
All other samples analyzed from location P-6 were below an LLD of 182 pCi/L. The positive H-3 results are attributed to river water sampling shortly following planned liquid discharges of radioactivity from the plant. Gamma-emitting isotopes were below detection limits in all samples.

Well Water

Water samples tested from the control well, P-43 (Peterson Farm) and from four indicator wells (P-8, Community Center, P-6, Lock and Dam No. 3, P-9, Plant Well No. 2 and P-24, Suter Farm) showed no tritium detected above a detection limit of 176 pCi/L. Gamma-emitting isotopes were below detection limits in all samples.

In summary, well water data for 2025 show no radiological effects of the plant operation.

Broadleaf Vegetation and Crops

Two samples of broadleaf vegetation, cabbage leaves, were collected in September 2025 and analyzed for gamma-emitting isotopes, including iodine-131. The I-131 level was below 0.048 pCi/g wet weight in both samples. With exceptions for naturally-occurring beryllium-7 and potassium-40, all other gamma-emitting isotopes were below their respective detection limits. There was no indication of a plant effect.

Field sampling personnel conducted an annual land use survey and found no river water taken for irrigation into fields within five miles downstream from the Prairie Island Plant. The collection and analysis of corn samples was not required since the fields have not been irrigated.

Fish

Fish were collected in May and September 2025 and analyzed for gamma-emitting isotopes. Only naturally-occurring potassium-40 was detected, and there was no significant difference between upstream and downstream results. There was no indication of a plant effect.

Aquatic Insects

Aquatic insects (invertebrates) were collected in June and September/October 2025 and analyzed for gamma-emitting isotopes. All gamma-emitting isotopes measured below detection limits with the exception of naturally occurring potassium-40 which was detected in all four samples. There was no indication of any plant effect.

Bottom and Shoreline Sediments

Upstream and downstream bottom sediments and downstream recreational area shoreline sediments were sampled May and September 2025. All gamma-emitting isotopes measured below detection limits with the exception of naturally occurring potassium-40.

Potassium-40 was detected in all four bottom sediment samples and both shoreline sediment samples. There was no indication of any plant effect.

5.0 FIGURES AND TABLES

Figure 5.1 Offsite Ambient Radiation (TLDs); average of inner and outer ring indicator locations versus control location.

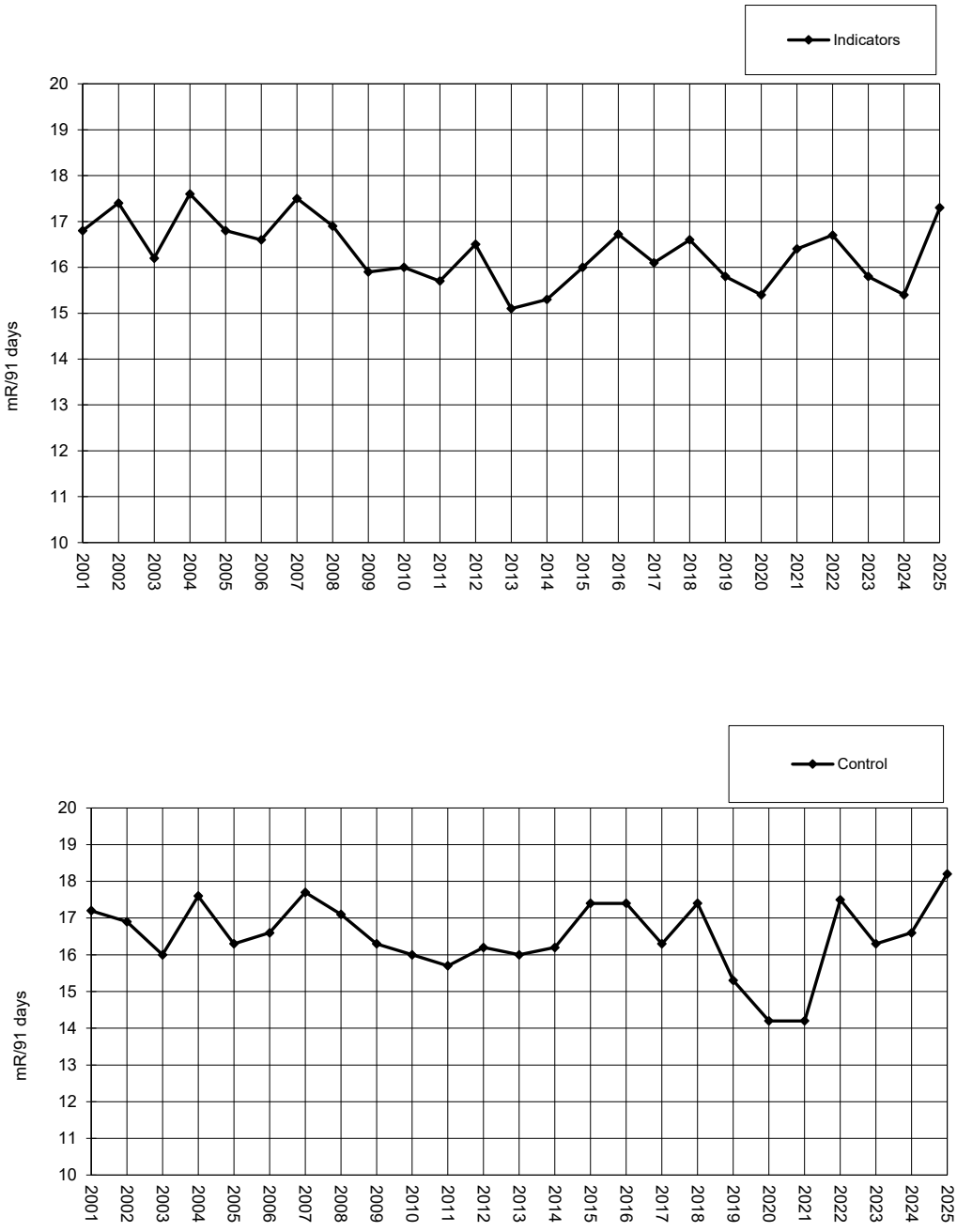
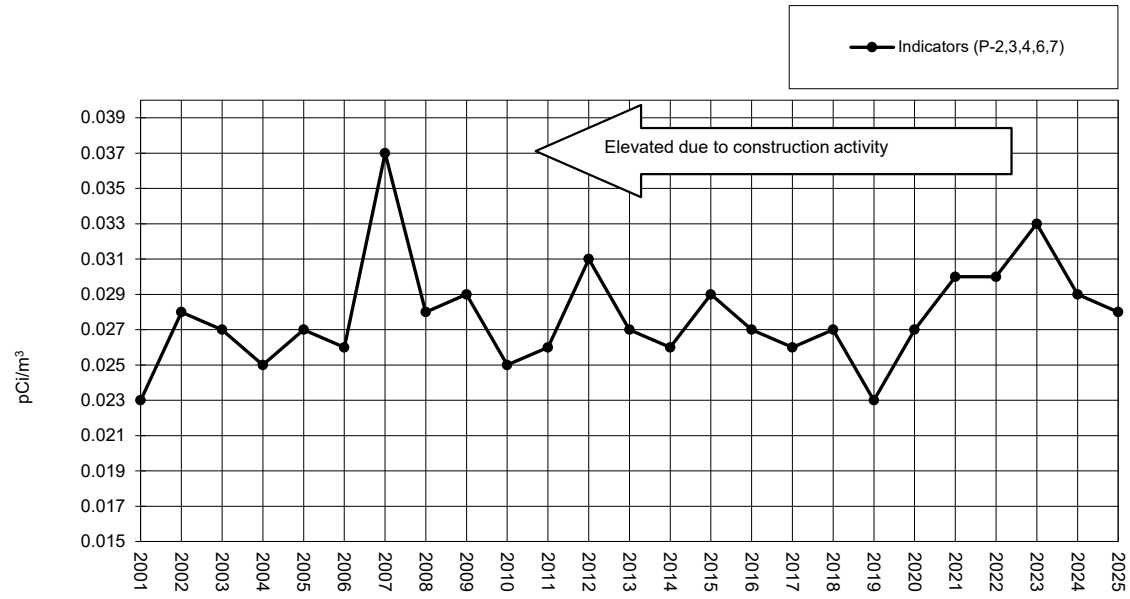


Figure 5.2 Airborne Particulates; analysis for gross beta, average mean of all indicator locations versus control location.



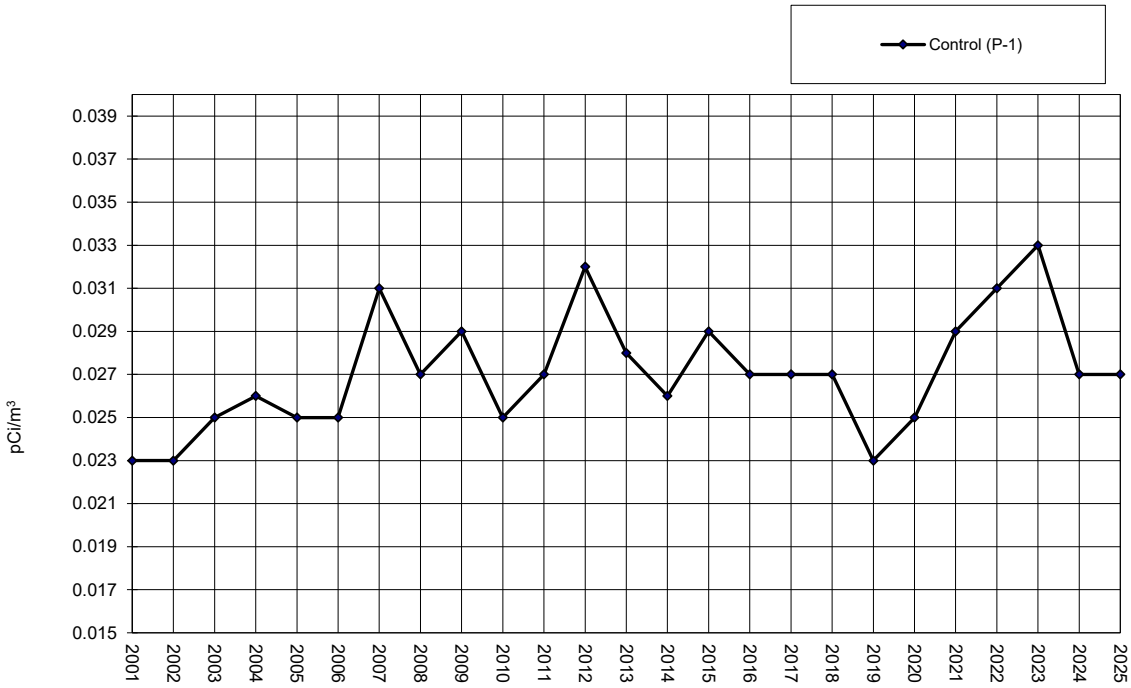


Table 5.1. Sample collection and analysis program, Prairie Island Nuclear Generating Plant.

Medium	No.	Location Codes (and Type)[a]	Collection Type and Frequency[b]	Analysis Type and Frequency[c]
Ambient radiation (TLD's)	54	P-01A - P-10A P-01B - P-15B P-01S - P-08S P-01IA - P-08IA P-01IB - P-08IB P-01IX- P-04IX, P-01C	C/Q	Ambient gamma
Airborne Particulates	6	P-1(C), P-2, P-3, P-4, P-6, P-7	C/W	GB, GS (QC of each location)
Airborne Iodine	6	P-1(C), P-2, P-3, P-4, P-6, P-7	C/W	I-131
River water	2	P-5(C), P-6	G/W	GS(MC), H-3(QC)
Drinking water	1	P-11	G/W	GB(MC), I-131(MC) GS (MC), H-3 (QC)
Well water	5	P-6, P-8, P-9, P-24, P-43 (C)	G/Q	H-3, GS
Edible cultivated crops	0	P-30(C)	G/A	GS (I-131)
Leafy green vegetables	3	P-8, P-24, P-38(C)	G/A	GS (I-131)
Fish (three species, edible portion)	2	P-19(C), P-13	G/SA	GS
Invertebrates	2	P-40(C), P-6	G/SA	GS
Bottom sediment	2	P-20(C), P-6	G/SA	GS
Shoreline sediment	1	P-12	G/SA	GS

[a] Location codes are defined in Table 5.2. Control stations are indicated by (C). All other stations are indicators.

[b] Collection type is coded as follows: C/ = continuous, G/ = grab. Collection frequency is coded as follows: W= weekly, M = monthly, Q = quarterly, SA = semiannually, A = annually.

[c] Analysis type is coded as follows: GB = gross beta, GS = gamma spectroscopy, H-3 = tritium, I-131 = iodine-131. Analysis frequency is coded as follows: MC = monthly composite, QC = quarterly composite.

Table 5.2. Sampling locations, Prairie Island Nuclear Generating Plant.

Code	Type[a]	Collection Site	Sample Type[b]	Distance and Direction from Reactor
P-1	C	Air Station P-1	AP, AI	11.8 mi @ 316°/NNW
P-2		Air Station P-2	AP, AI	0.5 mi @ 294°/WNW
P-3		Air Station P-3	AP, AI	0.8 mi @ 313°/NW
P-4		Air Station P-4	AP, AI	0.4 mi @ 359°/N
P-5	C	Upstream of Plant	RW	1.8 mi @ 11°/N Or 0.19 mi @ 33 °/NNE
P-6		Lock and Dam #3 & Air Station P-6	AP, AI, RW WW, BS, BO[c]	1.6 mi @ 129°/SE
P-7		Air Station P-7	AP, AI	0.5 mi @ 271°/W
P-8		Community Center	WW	1.0 mi @ 321°/WNW
P-9		Plant Well #2	WW	0.3 mi @ 306°/NW
P-11		Red Wing Service Center	DW	3.3 mi @ 158°/SSE
P-12		Downstream of Plant	SS	3.0 mi @ 116°/ESE
P-13		Downstream of Plant	F[c]	3.5 mi @ 113°/ESE
P-19	C	Upstream of Plant	F[c]	1.3 mi @ 0°/N
P-20	C	Upstream of Plant	BS	0.9 mi @ 45°/NE
P-24		Suter Residence	WW	0.6 mi @ 158°/SSE
P-28		Allyn Residence	VE	1.0 mi @ 152°/SSE
P-38	C	Cain Residence	VE	14.2 mi @ 359°/N
P-40	C	Upstream of Plant	BO[c]	0.4 mi @ 0°/N
P-43	C	Peterson Farm	WW	13.9 mi. @ 355°/N
<u>General Area of the Site Boundary</u>				
P-01A		Property Line	TLD	0.4 mi @ 359°/N
P-02A		Property Line	TLD	0.3 mi @ 10°/N
P-03A		Property Line	TLD	0.5 mi @ 183°/S
P-04A		Property Line	TLD	0.4 mi @ 204°/SSW
P-05A		Property Line	TLD	0.4 mi @ 225°/SW
P-06A		Property Line	TLD	0.4 mi @ 249°/WSW
P-07A		Property Line	TLD	0.4 mi @ 268°/W
P-08A		Property Line	TLD	0.4 mi @ 291°/WNW
P-09A		Property Line	TLD	0.7 mi @ 317°/NW
P-10A		Property Line	TLD	0.5 mi @ 333°/NNW

Table 5.2. Sampling locations, Prairie Island Nuclear Generating Plant (continued).

Code	Type[a]	Collection Site	Sample Type[b]	Distance and Direction from Reactor
Approximately 4 to 5 miles Distant from the Plant				
P-01B		Thomas Killian Residence	TLD	4.7 mi @ 355°/N
P-02B		Roy Kinneman Residence	TLD	4.8 mi @ 17°/NNE
P-03B		Wayne Anderson Farm	TLD	4.9 mi @ 46°/NE
P-04B		Nelson Drive (Road)	TLD	4.2 mi @ 61°/ENE
P-05B		County Road E and Coulee	TLD	4.2 mi @ 102°/ESE
P-06B		William Hauschildt Residence	TLD	4.4 mi @ 112°/ESE
P-07B		Red Wing Public Works	TLD	4.7 mi @ 140°/SE
P-08B		David Wnuk Residence	TLD	4.1 mi @ 165°/SSE
P-09B		Highway 19 South	TLD	4.2 mi @ 187°/S
P-10B		Cannondale Farm	TLD	4.9 mi @ 200°/SSW
P-11B		Wallace Weberg Farm	TLD	4.5 mi @ 221°/SW
P-12B		Ray Gergen Farm	TLD	4.6 mi @ 251°/WSW
P-13B		Thomas O'Rourke Farm	TLD	4.4 mi @ 270°/W
P-14B		David J. Anderson Farm	TLD	4.9 mi @ 306°/NW
P-15B		Holst Farms	TLD	3.8 mi @ 345°/NNW
Special Interest Locations				
P-01S		Federal Lock & Dam #3	TLD	1.6 mi @ 129°/SE
P-02S		Charles Suter Residence	TLD	0.5 mi @ 155°/SSE
P-03S		Carl Gustafson Farm	TLD	2.2 mi @ 173°/S
P-04S		Richard Burt Residence	TLD	2.0 mi @ 202°/SSW
P-05S		Kinney Store	TLD	2.0 mi @ 270°/W
P-06S		Earl Flynn Farm	TLD	2.5 mi @ 299°/WNW
P-07S		Indian Community	TLD	0.7 mi @ 271°/W
P-08S		Indian Community	TLD	0.7 mi @ 287°/WNW
P-01C	C	Robert Kinneman Farm	TLD	11.1 mi @ 331°/NNW

Table 5.2. Sampling locations, Prairie Island Nuclear Generating Plant (continued).

Code	Type[a]	Collection Site	Sample Type[b]	Distance and Direction from ISFSI Center.
ISFSI Area Inside Earth Berm				
P-01IA		ISFSI Nuisance Fence	TLD	190' @ 45°/NE
P-02IA		ISFSI Nuisance Fence	TLD	360' @ 82°/E
P-03IA		ISFSI Nuisance Fence	TLD	370' @ 100°/E
P-04IA		ISFSI Nuisance Fence	TLD	200' @ 134°/SE
P-05IA		ISFSI Nuisance Fence	TLD	180' @ 219°/SW
P-06IA		ISFSI Nuisance Fence	TLD	320' @ 258°/WSW
P-07IA		ISFSI Nuisance Fence	TLD	320' @ 281°/WNW
P-08IA		ISFSI Nuisance Fence	TLD	190' @ 318°/NW
P-01IX		ISFSI Nuisance Fence	TLD	140' @ 180°/S
P-02IX		ISFSI Nuisance Fence	TLD	310' @ 270°/W
P-03IX		ISFSI Nuisance Fence	TLD	140' @ 0°/N
P-04IX		ISFSI Nuisance Fence	TLD	360' @ 90°/E
ISFSI Area Outside Earth Berm				
P-01IB		ISFSI Berm Area	TLD	340' @ 3°/N
P-02IB		ISFSI Berm Area	TLD	380' @ 28°/NNE
P-03IB		ISFSI Berm Area	TLD	560' @ 85°/E
P-04IB		ISFSI Berm Area	TLD	590' @ 165°/SSE
P-05IB		ISFSI Berm Area	TLD	690' @ 186°/S
P-06IB		ISFSI Berm Area	TLD	720' @ 201°/SSW
P-07IB		ISFSI Berm Area	TLD	610' @ 271°/W
P-08IB		ISFSI Berm Area	TLD	360' @ 332°/NNW

[a] "C" type denotes control location. All other locations are indicators.

[b] Sample Codes:

AP	Airborne particulates	F	Fish
AI	Airborne iodine	SS	Shoreline sediments
BS	Bottom (river) sediments	SW	Surface water
BO	Bottom organisms (Invertebrates)	VE	Vegetation/vegetables
		WW	Well water
DW	Drinking water	RW	River water

[c] Distance and direction data for fish and bottom organisms are approximate since availability of sample specimen may vary at any one location.

Table 5.3. Missed collections and analyses at the Prairie Island Nuclear Generating Plant.

All required samples were collected and analyzed with the following exceptions:

Sample Type	Analyses	Location	Collection Date or Period	Reason for not conducting REMP as required	Plan for Preventing Recurrence
RW	Gamma Spectroscopy Tritium	P-5	1/22/2025	Hazardous ice conditions	Designated an alternate location.
AI	I-131	All	2/12/2025	All cartridges were damaged by leaked water sample.	None
AP	Gross Beta	All	2/12/2025	All filters were damaged by leaked water sample.	None
AI	I-131	P-6	11/14/2025	Sampler was found with less than expected sample time. Declared missing due to insufficient time.	Power was restored
AP	Gross Beta	P-6	11/14/2025	Sampler was found with less than expected sample time. Declared missing due to insufficient time.	Power was restored

Table 5.4 Radiological Environmental Monitoring Program Summary

Name of Facility	Prairie Island Nuclear Power Station	Docket No.	50-282, 50-306
Location of Facility	Goodhue, Minnesota	Reporting Period	January-December, 2025
	(County, State)		

Sample Type (Units)	Type and Number of Analyses[a]	LLD[b]	Indicator Locations Mean (F)[c] Range[c]	Location with Highest Annual Mean Location[d]	Location with Highest Annual Mean Mean (F)[c] Range[c]	Control Locations Mean (F)[c] Range[c]	Number Non-Routine Results[e]
Direct Radiation							
TLD (Inner Ring, Area at Site Boundary) mR/91 days)	Gamma 40	3.0	17.3 (40/40) (12.5-21.7)	P-06A Property Line 0.4 mi @ 249º/WSW	19.5 (4/4) (17.3-21.7)	(See Control below.)	0
TLD (Outer Ring, 4-5 mi. distant) mR/91 days)	Gamma 60	3.0	17.3 (60/60) (13.2-22.5)	P-04B, Nelson Drive (Road) 4.2 mi @ 61°/ENE	20.3 (4/4) (18.1-22.5)	(See Control below.)	0
TLD (Special Interest Areas) mR/91 days)	Gamma 32	3.0	17.1 (32/32) (12.9-20.1)	P-02S, Suter Residence, 0.5 mi @ 155°/SSE	19.3 (4/4) (18.2-20.1)	(See Control below.)	0
TLD (Control) mR/91 days)	Gamma 4	3.0	None	P-01C, Robert Kinneman 11.1 mi @ 331° /NNW	18.2 (4/4) (17.5-19.1)	18.2 (4/4) (17.5-19.1)	0
Airborne Pathway							
Airborne Particulates	GB 306	0.005	0.028 (255/255) (0.009 - 0.077)	P-6, Air Station 1.6 mi. @ 129° /SE	0.031 (51/51) (0.009 - 0.077)	0.027 (51/51) (0.009 - 0.061)	0
	GS 24						
	Be-7	0.015	0.067 (20/20) (0.049 - 0.090)	P-6, Air Station 1.6 mi @ 129° /SE	0.074(4/4) (0.051 - 0.090)	0.063 (4/4) (0.046-0.076)	0
	Mn-54	0.0006	< LLD	-	-	< LLD	0
	Co-58	0.0008	< LLD	-	-	< LLD	0
	Co-60	0.0008	< LLD	-	-	< LLD	0
	Zn-65	0.0019	< LLD	-	-	< LLD	0
	Zr-Nb-95	0.0012	< LLD	-	-	< LLD	0
	Ru-103	0.0011	< LLD	-	-	< LLD	0
	Ru-106	0.0065	< LLD	-	-	< LLD	0
	Cs-134	0.0007	< LLD	-	-	< LLD	0
	Cs-137	0.0009	< LLD	-	-	< LLD	0
	Ba-La-140	0.0080	< LLD	-	-	< LLD	0
	Ce-141	0.0015	< LLD	-	-	< LLD	0
	Ce-144	0.0041	< LLD	-	-	< LLD	0
Airborne Iodine (pCi/m^3)	I-131 306	0.030	< LLD	-	-	< LLD	0

Table 5.4 Radiological Environmental Monitoring Program Summary

Name of Facility: Prairie Island Nuclear Power Station — Docket No.: 50-282, 50-306

Location of Facility: Goodhue, Minnesota (County, State) — Reporting Period: January-December, 2025

Sample Type (Units)	Type and Number of Analyses[a]	LLD[b]	Indicator Locations Mean (F)[c] Range[c]	Location with Highest Annual Mean Location[d]	Location with Highest Annual Mean Mean (F)[c] Range[c]	Control Locations Mean (F)[c] Range[c]	Number Non-Routine Results[e]
Terrestrial Pathway							
Crops - Cabbage (pCi/gwet)	I-131 2	0.048	< LLD	-	-	< LLD	0
Well Water (pCi/L)	H-3 20	176	< LLD	-	-	< LLD	0
	GS 20						
	Mn-54	10	< LLD	-	-	< LLD	0
	Fe-59	30	< LLD	-	-	< LLD	0
	Co-58	10	< LLD	-	-	< LLD	0
	Co-60	10	< LLD	-	-	< LLD	0
	Zn-65	30	< LLD	-	-	< LLD	0
	Zr-Nb-95	15	< LLD	-	-	< LLD	0
	Cs-134	10	< LLD	-	-	< LLD	0
	Cs-137	10	< LLD	-	-	< LLD	0
	Ba-La-140	15	< LLD	-	-	< LLD	0
	Ce-144	59	< LLD	-	-	< LLD	0

Table 5.4 Radiological Environmental Monitoring Program Summary

Name of Facility: Prairie Island Nuclear Power Station — Docket No.: 50-282, 50-306

Location of Facility: Goodhue, Minnesota (County, state) — Reporting Period: January-December, 2025

Sample Type (Units)	Type and Number of Analyses[a]	LLD[b]	Indicator Locations Mean (F)[c] Range[c]	Location with Highest Annual Mean: Location[d]	Location with Highest Annual Mean: Mean (F)[c] Range[c]	Control Locations Mean (F)[c] Range[c]	Number Non-Routine Results[e]
Waterborne Pathway							
Drinking Water (pCi/L)	GB 12	1.0	8.9 (12/12) (5.4 - 11.1)	P-11, Red Wing S.C. 3.3 mi @ 158° /SSE	8.9 (12/12) (5.4 - 11.1)	None	0
	I-131 12	1.0	< LLD	-	-	None	0
	H-3 4	182	< LLD	-	-	None	0
	GS 12			-	-		
	Mn-54	10	< LLD	-	-	None	0
	Fe-59	30	< LLD	-	-	None	0
	Co-58	10	< LLD	-	-	None	0
	Co-60	10	< LLD	-	-	None	0
	Zn-65	30	< LLD	-	-	None	0
	Zr-Nb-95	15	< LLD	-	-	None	0
	Cs-134	10	< LLD	-	-	None	0
	Cs-137	10	< LLD	-	-	None	0
	Ba-La-140	15	< LLD	-	-	None	0
	Ce-144	41	< LLD	-	-	None	0
River Water (pCi/L)	H-3 19	182	741 (4/11)	P-6, Lock and Dam #3 1.6 mi @ 129° /SE	741 (4/11) (228-1390)	< LLD	0
	GS 24						
	Mn-54	10	< LLD	-	-	< LLD	0
	Fe-59	30	< LLD	-	-	< LLD	0
	Co-58	10	< LLD	-	-	< LLD	0
	Co-60	10	< LLD	-	-	< LLD	0
	Zn-65	30	< LLD	-	-	< LLD	0
	Zr-Nb-95	15	< LLD	-	-	< LLD	0
	Cs-134	10	< LLD	-	-	< LLD	0
	Cs-137	10	< LLD	-	-	< LLD	0
	Ba-La-140	15	< LLD	-	-	< LLD	0
	Ce-144	49	< LLD	-	-	< LLD	0
Fish (pCi/g wet)	GS 12						
	K-40	0.10	3.03 (6/6) (2.57-3.57)	P-13, Downstream 3.5 mi @ 113°/ESE	3.03 (6/6) (2.57-3.57)	2.91 (6/6) (2.38-3.42)	0
	Mn-54	0.016	< LLD	-	-	< LLD	0
	Fe-59	0.063	< LLD	-	-	< LLD	0
	Co-58	0.023	< LLD	-	-	< LLD	0
	Co-60	0.017	< LLD	-	-	< LLD	0
	Zn-65	0.043	< LLD	-	-	< LLD	0
	Zr-Nb-95	0.039	< LLD	-	-	< LLD	0
	Cs-134	0.017	< LLD	-	-	< LLD	0
	Cs-137	0.021	< LLD	-	-	< LLD	0
	Ba-La-140	0.234	< LLD	-	-	< LLD	0

Table 5.4 Radiological Environmental Monitoring Program Summary

Name of Facility	Prairie Island Nuclear Power Station	Docket No.	50-282, 50-306
Location of Facility	Goodhue, Minnesota (County, State)	Reporting Period	January-December 2025

Sample Type (Units)	Type and Number of Analyses[a]	LLD[b]	Indicator Locations Mean (F)[c] Range[c]	Location with Highest Annual Mean Location[d]	Location with Highest Annual Mean Mean (F)[c] Range[c]	Control Locations Mean (F)[c] Range[c]	Number Non-Routine Results[e]
Waterborne Pathway							
Invertebrates (pCi/g wet)	GS 4						
	Be-7	0.514	< LLD	-	-	< LLD	0
	K-40	0.84	1.79 (2/2) (0.94 - 2.64)	P-6, Lock & Dam #3 1.6 mi @ 129° /SE	1.79 (2/2) (0.94 - 2.64)	2.08 (2/2) (0.84 - 3.31)	0
	Mn-54	0.043	< LLD	-	-	< LLD	0
	Co-58	0.049	< LLD	-	-	< LLD	0
	Co-60	0.036	< LLD	-	-	< LLD	0
	Zn-65	0.075	< LLD	-	-	< LLD	0
	Zr-Nb-95	0.089	< LLD	-	-	< LLD	0
	Ru-103	0.070	< LLD	-	-	< LLD	0
	Ru-106	0.331	< LLD	-	-	< LLD	0
	Cs-134	0.039	< LLD	-	-	< LLD	0
	Cs-137	0.041	< LLD	-	-	< LLD	0
	Ba-La-140	0.383	< LLD	-	-	< LLD	0
	Ce-141	0.120	< LLD	-	-	< LLD	0
	Ce-144	0.208	< LLD	-	-	< LLD	0
Bottom and Shoreline Sediments (pCi/g dry)	GS 6						
	Be-7	0.187	< LLD	-	-	-	0
	K-40		8.19 (4/4) (7.18 – 9.45)	P-12, Recreational Area 3.0 mi @ 116°/ESE	8.57 (2/2) (7.68 – 9.45)	7.08 (2/2) (6.68 – 7.47)	0
	Mn-54	0.016	< LLD	-	-	< LLD	0
	Co-58	0.022	< LLD	-	-	< LLD	0
	Co-60	0.017	< LLD	-	-	< LLD	0
	Zn-65	0.033	< LLD	-	-	< LLD	0
	Zr-Nb-95	0.036	< LLD	-	-	< LLD	0
	Ru-103	0.024	< LLD	-	-	< LLD	0
	Ru-106	0.190	< LLD	-	-	< LLD	0
	Cs-134	0.018	< LLD	-	-	< LLD	0
	Cs-137	0.017	< LLD	-	-	< LLD	0
	Ba-La-140	0.201	< LLD	-	-	< LLD	0
	Ce-141	0.059	< LLD	-	-	< LLD	0
	Ce-144	0.124	< LLD	-	-	< LLD	0

[a] GB = gross beta, GS = gamma scan.

[b] LLD = nominal lower limit of detection based on a 4.66 sigma counting error for background sample.

[c] Mean and range are based on detectable measurements only. Fraction of detectable measurements at specified locations is indicated in parentheses (F).

[d] Locations are specified: (1) by name, and/or station code and (2) by distance (miles) and direction relative to reactor site.

[e] 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 typical preoperational value for the medium or location.

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APPENDIX A

INTERLABORATORY AND INTRALABORATORY COMPARISON PROGRAM RESULTS

NOTE: Appendix A is updated four times a year. The complete appendix is included in March, June, September and December monthly progress reports only.

January, 2025 through December, 2025

Appendix A

Interlaboratory/ Intralaboratory Comparison Program Results

Microbac Laboratories Inc. - Northbrook, formerly Environmental Inc., Midwest Laboratory, has participated in interlaboratory comparison (crosscheck) programs since the formulation of its quality control program in December 1971. These programs are operated by agencies which supply operated by agencies which supply environmental type samples containing concentrations of radionuclides known to the issuing agency but not to participant laboratories. The purpose of such a program is to provide an independent check on a laboratory's analytical procedures and to alert it of any possible problems.

Participant laboratories measure the concentration of specified radionuclides and report them to the issuing agency. Several months later, the agency reports the known values to the participant laboratories and specifies control limits. Results consistently higher or lower than the known values or outside the control limits indicate a need to check the instruments or procedures used.

Results in Table A-1 were obtained through participation in the RAD PT Study Proficiency Testing Program administered by Environmental Resource Associates, serving as a replacement for studies conducted previously by the U.S. EPA Environmental Monitoring Systems Laboratory, Las Vegas, Nevada.

Table A-2 lists results for thermoluminescent dosimeters (TLDs), via irradiation and evaluation by the University of Wisconsin-Madison Radiation Calibration Laboratory at the University of Wisconsin Medical Radiation Research Center.

Table A-3 lists results of the analyses on intralaboratory "spiked" samples for the past twelve months. All samples are prepared using NIST traceable sources. Data for previous years available upon request.

Table A-4 lists results of the analyses on intralaboratory "blank" samples for the past twelve months. Data for previous years available upon request.

Table A-5 lists analytical results from the intralaboratory "duplicate" program for the past twelve months. Acceptance is based on a relative percent difference of 25% or the two sigma incertainties overlap, subject to matrix homogeneity.

The results in Table A-6 were obtained through participation in the Mixed Analyte Performance Evaluation Program.

Results in Table A-7 were obtained through participation in the MRAD PT Study Proficiency Testing Program administered by Environmental Resource Associates, serving as a replacement for studies conducted previously by the Environmental Measurement Laboratory Quality Assessment Program (EML).

Attachment A lists the laboratory acceptance criteria for various analyses.

Out-of-limit results are explained directly below the result.

Attachment A

ACCEPTANCE CRITERIA FOR INTRALABORATORY "SPIKED" SAMPLES

Analysis	Ratio of lab result to known value.
Gamma Emitters	0.8 to 1.2
Strontium-89, Strontium-90	0.8 to 1.2
Potassium-40	0.8 to 1.2
Gross alpha	0.5 to 1.5
Gross beta	0.8 to 1.2
Tritium	0.8 to 1.2
Radium-226, Radium-228	0.7 to 1.3
Plutonium	0.8 to 1.2
Iodine-129, Iodine-131	0.8 to 1.2
Nickel-63, Technetium-99, Uranium-238	0.7 to 1.3
Iron-55	0.8 to 1.2
Other Analyses	0.8 to 1.2

TABLE A-1. Interlaboratory Comparison Crosscheck program, Environmental Resource Associates (ERA)[a].

Lab Code	Analysis	Concentration (pCi/L) Reported Value	Assigned Value	Acceptance Limits	Acceptance
RAD-140 Study (study dates 01/13/25 - 02/27/25)					
ERDW-3283	Ba-133	88.7	89.7	71.5 - 108	Pass
ERDW-3283	Cs-134	35.3	38.4	25.4 - 51.4	Pass
ERDW-3283	Cs-137	155	157	123 - 191	Pass
ERDW-3283	Co-60	67.2	66.8	50.9 - 82.7	Pass
ERDW-3283	Zn-65	71.6	74.3	39.3 - 109	Pass
ERDW-3281	Gr. Alpha	49.4	72.2	55.3 - 89.1	Fail[b]
ERDW-3281	G. Beta	59.0	59.2	44.1 - 74.3	Pass
ERDW-3279	Ra-228	5.54	6.00	3.98 - 8.02	Pass
ERDW-3279	Uranium	67.1	63.6	56.6 - 70.6	Pass
ERDW-3285	H-3	11,884	11,400	9,340 - 13,500	Pass
ERA-032425M Study (study dates 03/24/25 - 04/04/25)					
ERDW-3786	Gr. Alpha	43.8	51.7	38.9 - 64.5	Pass
ERA-030525U Study (study dates 03/05/25 - 04/15/25)					
ERDW-3631	Ra-226	17.5	18.2	15.5 - 20.9	Pass
ERA-060325P Study (study dates 06/03/25 - 06/30/25)					
ERDW-4378	Ra-226	12.2	10.9	8.89 - 12.9	Pass
ERDW-4378	Ra-228	2.34	3.25	1.78 - 4.72	Pass
ERDW-4378	Uranium	52.4	49.6	44.0 - 55.2	Pass
ERA-060525P Study (study dates 06/05/25 - 06/23/25)					
ERDW-4417	Gr. Alpha	17.4	15.6	10.0 - 21.2	Pass
ERDW-4417	G. Beta	21.7	22.9	15.0 - 30.8	Pass
RAD-142 Study (study dates 07/07/25 - 08/21/25)					
ERDW-4671	Ba-133	30.1	30.1	17.9 - 42.3	Pass
ERDW-4671	Cs-134	58.5	65.6	49.8 - 81.4	Pass
ERDW-4671	Cs-137	156	152	118 - 186	Pass
ERDW-4671	Co-60	122.0	113.0	92.5 - 134	Pass
ERDW-4671	Zn-65	85.5	80.6	44.9 - 116	Pass
ERDW-4672	Gr. Alpha	24.1	33.8	24.6 - 43.0	Fail[b]
ERDW-4672	G. Beta	41.0	41.7	30.1 - 53.3	Pass
ERDW-4674	H-3	16,400	15,800	13,300 - 18,300	Pass

[a] Results obtained by Microbac Laboratories Inc. - Northbrook as a participant in the crosscheck program for proficiency testing in drinking water conducted by Environmental Resource Associates (ERA).

[b] The gross alpha failures of ERA studies RAD-140 and RAD-142 are believed to be due to inhomegeity of the solids in the sample matrices which is assumed to have a greater effect on the gross alpha results than on the gross beta results.

TABLE A-2. Thermoluminescent Dosimetry, (TLD, $CaSO_4$: Dy Cards).[a]

Lab Code	Irradiation Date	Description	Delivered Dose (mrem)	Reported[b] Dose (mrem)	Performance[c] Quotient (P)	
Environmental, Inc.		Group 1				
2024-25-1	1/6/2025	Spike 1	92.0	91.8	0.00	
2024-25-1	1/6/2025	Spike 2	92.0	89.7	-0.03	
2024-25-1	1/6/2025	Spike 3	92.0	92.0	0.00	
2024-25-1	1/6/2025	Spike 4	92.0	92.9	0.01	
2024-25-1	1/6/2025	Spike 5	92.0	91.8	0.00	
2024-25-1	1/6/2025	Spike 6	92.0	98.0	0.07	
2024-25-1	1/6/2025	Spike 7	92.0	94.6	0.03	
2024-25-1	1/6/2025	Spike 8	92.0	94.2	0.02	
2024-25-1	1/6/2025	Spike 9	92.0	95.4	0.04	
2024-25-1	1/6/2025	Spike 10	92.0	91.3	-0.01	
2024-25-1	1/6/2025	Spike 11	92.0	89.4	-0.03	
2024-25-1	1/6/2025	Spike 12	92.0	97.7	0.06	
2024-25-1	1/6/2025	Spike 13	92.0	94.1	0.02	
2024-25-1	1/6/2025	Spike 14	92.0	92.2	0.00	
2024-25-1	1/6/2025	Spike 15	92.0	92.9	0.01	
2024-25-1	1/6/2025	Spike 16	92.0	91.7	0.00	
2024-25-1	1/6/2025	Spike 17	92.0	87.4	-0.05	
2024-25-1	1/6/2025	Spike 18	92.0	94.7	0.03	
2024-25-1	1/6/2025	Spike 19	92.0	91.0	-0.01	
2024-25-1	1/6/2025	Spike 20	92.0	92.5	0.01	
Mean (Spike 1-20)				92.8	0.01	Pass[d]
Standard Deviation (Spike 1-20)				2.6	0.03	Pass[d]

a TLD's were irradiated by the University of Wisconsin-Madison Radiation Calibration Laboratory following ANSI N13.37 protocol from a known air kerma rate. TLD's were read and the results were submitted by Microbac Laboratories - Northbrook to the University of Wisconsin-Madison Radiation Calibration Laboratory for comparison to the delivered dose.

b Reported dose was converted from exposure (R) to Air Kerma (cGy) using a conversion of 0.876. Conversion from air kerma to ambient dose equivalent for Cs-137 at the reference dose point $H^*(10)K_a = 1.20$. mrem/cGy = 1000.

c Performance Quotient (P) is calculated as ((reported dose - conventionally true value) ÷ conventionally true value) where the conventionally true value is the delivered dose.

d Acceptance is achieved when neither the absolute value of the mean of the P values, nor the standard deviation of the P values exceed 0.15.

TABLE A-2. Thermoluminescent Dosimetry, (TLD, $CaSO_4$: Dy Cards).[a]

			mrem		
Lab Code	Irradiation Date	Description	Delivered Dose	Reported[b] Dose	Performance[c] Quotient (P)	
Environmental, Inc.		Group 2				
2024-25-2	1/6/2025	Spike 21	74.0	77.5	0.05	
2024-25-2	1/6/2025	Spike 22	74.0	77.6	0.05	
2024-25-2	1/6/2025	Spike 23	74.0	73.2	-0.01	
2024-25-2	1/6/2025	Spike 24	74.0	75.4	0.02	
2024-25-2	1/6/2025	Spike 25	74.0	75.3	0.02	
2024-25-2	1/6/2025	Spike 26	74.0	77.8	0.05	
2024-25-2	1/6/2025	Spike 27	74.0	73.1	-0.01	
2024-25-2	1/6/2025	Spike 28	74.0	74.0	0.00	
2024-25-2	1/6/2025	Spike 29	74.0	75.8	0.02	
2024-25-2	1/6/2025	Spike 30	74.0	76.5	0.03	
2024-25-2	1/6/2025	Spike 31	74.0	73.5	-0.01	
2024-25-2	1/6/2025	Spike 32	74.0	75.5	0.02	
2024-25-2	1/6/2025	Spike 33	74.0	76.5	0.03	
2024-25-2	1/6/2025	Spike 34	74.0	76.4	0.03	
2024-25-2	1/6/2025	Spike 35	74.0	75.1	0.01	
2024-25-2	1/6/2025	Spike 36	74.0	72.8	-0.02	
2024-25-2	1/6/2025	Spike 37	74.0	76.0	0.03	
2024-25-2	1/6/2025	Spike 38	74.0	74.9	0.01	
2024-25-2	1/6/2025	Spike 39	74.0	75.4	0.02	
2024-25-2	1/6/2025	Spike 40	74.0	70.8	-0.04	
Mean (Spike 21-40)				75.2	0.02	Pass[d]
Standard Deviation (Spike 21-40)				1.8	0.02	Pass[d]

a TLD's were irradiated by the University of Wisconsin-Madison Radiation Calibration Laboratory following ANSI N13.37 protocol from a known air kerma rate. TLD's were read and the results were submitted by Microbac Laboratories - Northbrook to the University of Wisconsin-Madison Radiation Calibration Laboratory for comparison to the delivered dose.

b Reported dose was converted from exposure (R) to Air Kerma (cGy) using a conversion of 0.876. Conversion from air kerma to ambient dose equivalent for Cs-137 at the reference dose point $H^*(10)K_a = 1.20$. mrem/cGy = 1000.

c Performance Quotient (P) is calculated as ((reported dose - conventionally true value) ÷ conventionally true value) where the conventionally true value is the delivered dose.

d Acceptance is achieved when neither the absolute value of the mean of the P values, nor the standard deviation of the P values exceed 0.15.

TABLE A-3. Intralaboratory "Spiked" Samples

Lab Code[b]	Reference Date	Analysis	Concentration[a] Laboratory results 2s, n=1[c]	Known Activity	Control Limits[d]	Acceptance	Ratio Lab/Known
SPDW-60670	1/20/25	Ra-228	11.9 ± 1.6	15.3	10.7 - 19.9	Pass	0.78
SPDW-60708	2/5/25	H-3	20,675 ± 456	22,100	17,680 - 26,520	Pass	0.94
SPDW-60787	3/10/25	H-3	21,002 ± 459	22,100	17,680 - 26,520	Pass	0.95
LCS-W-011525B	8/1/24	Co-57	699 ± 24	713	570 - 855	Pass	0.98
LCS-W-011525B	8/1/24	Cs-134	530 ± 8	602	482 - 723	Pass	0.88
LCS-W-011525B	8/1/24	Zn-65	543 ± 38	616	492 - 739	Pass	0.88
LCS-W-011525B	8/1/24	Mn-54	369 ± 21	343	274 - 411	Pass	1.08
LCS-W-011525B	8/1/24	Fe-59	1,825 ± 325	1,553	1,242 - 1863	Pass	1.18
LCS-W-011625	8/1/23	Mn-54	345 ± 28	343	274 - 412	Pass	1.01
LCS-W-011625	8/1/23	Cs-134	261 ± 15	305	244 - 366	Pass	0.86
LCS-W-011625	8/1/23	Cs-137	246 ± 11	235	188 - 282	Pass	1.05
LCS-W-011625	8/1/23	Co-57	542 ± 39	521	417 - 625	Pass	1.04
LCS-W-011625	8/1/23	Zn-65	527 ± 57	516	413 - 619	Pass	1.02
LCS-VE-012225A	8/1/24	Mn-54	104 ± 6	95.3	76.2 - 114	Pass	1.09
LCS-VE-012225A	8/1/24	Co-60	53.3 ± 3.7	54.3	43.4 - 65.2	Pass	0.98
LCS-VE-012225A	8/1/24	Cs-134	67.8 ± 3.5	78.0	62.4 - 93.6	Pass	0.87
LCS-VE-012225A	8/1/24	Cs-137	48.4 ± 3.3	51.6	41.3 - 61.9	Pass	0.94
LCS-VE-012225A	8/1/24	Zn-65	222 ± 13	247	198 - 296	Pass	0.90
LCS-VE-012225B	2/1/24	Co-57	72.3 ± 5.5	68.3	54.6 - 82.0	Pass	1.06
LCS-VE-012225B	2/1/24	Co-60	78.6 ± 3.5	79.9	63.9 - 95.9	Pass	0.98
LCS-VE-012225B	2/1/24	Cs-134	80.5 ± 3.8	99.1	79.3 - 119	Pass	0.81
LCS-VE-012225B	2/1/24	Cs-137	65.1 ± 3.3	69.4	55.5 - 83.3	Pass	0.94
LCS-VE-012225B	2/1/24	Zn-65	189 ± 17	217	174 - 260	Pass	0.87
LCS-W-012725A	4/8/24	Ba-133	64.9 ± 4.8	65.9	52.7 - 79.1	Pass	0.98
LCS-W-012725A	4/8/24	Cs-134	56.6 ± 4.7	57.8	46.2 - 69.4	Pass	0.98
LCS-W-012725A	4/8/24	Cs-137	195 ± 8	186	149 - 223	Pass	1.05
LCS-W-012725A	4/8/24	Co-60	104.5 ± 4.8	98.8	79.0 - 119	Pass	1.06
LCS-W-012725A	4/8/24	Zn-65	273 ± 42	240	192 - 288	Pass	1.14
LCS-W-012725B	4/8/24	Ba-133	61.7 7.1	65.9	52.7 - 79.1	Pass	0.94
LCS-W-012725B	4/8/24	Cs-134	49.6 6.4	57.8	46.2 - 69.4	Pass	0.86
LCS-W-012725B	4/8/24	Cs-137	189 ± 11	186	149 - 223	Pass	1.02
LCS-W-012725B	4/8/24	Co-60	98.3 7.1	98.8	79.0 - 119	Pass	0.99
LCS-W-012725B	4/8/24	Zn-65	213 ± 32	240	192 - 288	Pass	0.89
LCS-AP-012925	8/1/24	Co-60	10.6 ± 1.5	9.75	7.80 - 11.7	Pass	1.09
LCS-AP-012925	8/1/24	Cs-134	7.45 ± 0.84	9.02	7.22 - 10.8	Pass	0.83
LCS-AP-012925	8/1/24	Cs-137	7.75 ± 1.24	7.26	5.81 - 8.71	Pass	1.07

[a] Liquid sample results are reported in pCi/Liter, air filters (pCi/m3), charcoal (pCi/charcoal canister), and solid samples (pCi/kg).
[b] Laboratory codes : W & SPW (Water), MI (milk), AP (air filter), SO (soil), VE (vegetation), CH (charcoal canister), F (fish), U (urine).
[c] Results are based on single determinations.
[d] Acceptance criteria are listed in Attachment A of this report.

TABLE A-3. Intralaboratory "Spiked" Samples

Lab Code[b]	Reference Date	Analysis	Concentration[a] Laboratory results 2s, n=1[c]	Known Activity	Control Limits[d]	Acceptance	Ratio Lab/Known
LCS-SO-012925A	10/14/24	K-40	16,200 ± 473	14,175	11,340 - 17,010	Pass	1.14
LCS-SO-012925A	10/14/24	Mn-54	3,100 ± 73	3,051	2,441 - 3,661	Pass	1.02
LCS-SO-012925A	10/14/24	Co-57	8,490 ± 718	8,910	7,128 - 10,692	Pass	0.95
LCS-SO-012925A	10/14/24	Co-60	17,800 ± 95	18,900	15,120 - 22,680	Pass	0.94
LCS-SO-012925A	10/14/24	Cs-134	9,920 ± 83	11,259	9,007 - 13,511	Pass	0.88
LCS-SO-012925A	10/14/24	Cs-137	44,600 ± 182	44,550	35,640 - 53,460	Pass	1.00
LCS-SO-012925A	10/14/24	Zn-65	11,700 ± 216	11,205	8,964 - 13,446	Pass	1.04
LCS-SO-012925B	2/14/24	K-40	14,302 ± 1308	13,095	10,476 - 15,714	Pass	1.09
LCS-SO-012925B	2/14/24	Mn-54	9,368 ± 413	8,964	7,171 - 10,757	Pass	1.05
LCS-SO-012925B	2/14/24	Co-57	9,451 ± 213	10,827	8,662 - 12,992	Pass	0.87
LCS-SO-012925B	2/14/24	Co-60	17,653 ± 263	17,820	14,256 - 21,384	Pass	0.99
LCS-SO-012925B	2/14/24	Cs-134	8,989 ± 192	10,908	8,726 - 13,090	Pass	0.82
LCS-SO-012925B	2/14/24	Cs-137	42,415 ± 416	41,850	33,480 - 50,220	Pass	1.01
LCS-SO-012925B	2/14/24	Zn-65	18,205 ± 839	18,981	15,185 - 22,777	Pass	0.96
LCS-W-013025	8/1/24	Cs-134	545 ± 9	602	482 - 722	Pass	0.91
LCS-W-013025	8/1/24	Co-57	692 ± 12	713	570 - 856	Pass	0.97
LCS-W-013025	8/1/24	Fe-59	1,781 ± 170	1553	1,242 - 1864	Pass	1.15
LCS-W-013025	8/1/24	Co-60	390 ± 7	405	324 - 486	Pass	0.96
LCS-W-013025	8/1/24	Zn-65	652 ± 23	616	493 - 739	Pass	1.06
LCS-SO-021225	8/1/24	K-40	14,043 ± 1,654	14,175	11,340 - 17,010	Pass	0.99
LCS-SO-021225	8/1/24	Mn-54	3,144 ± 219	3,051	2,441 - 3,661	Pass	1.03
LCS-SO-021225	8/1/24	Co-57	8,547 ± 199	8,910	7,128 - 10,692	Pass	0.96
LCS-SO-021225	8/1/24	Co-60	18,084 ± 195	18,900	15,120 - 22,680	Pass	0.96
LCS-SO-021225	8/1/24	Cs-134	9,296 ± 161	11,259	9,007 - 13,511	Pass	0.83
LCS-SO-021225	8/1/24	Cs-137	44,134 ± 335	44,550	35,640 - 53,460	Pass	0.99
LCS-SO-021225	8/1/24	Zn-65	11,858 ± 450	11,205	8,964 - 13,446	Pass	1.06
LCS-VE-021225	8/1/25	Mn-54	98.5 ± 5	95.3	76.2 - 114	Pass	1.03
LCS-VE-021225	8/1/25	Co-60	58.3 ± 3	54.3	43.4 - 65.2	Pass	1.07
LCS-VE-021225	8/1/25	Cs-134	73.0 ± 3	78.0	62.4 - 93.6	Pass	0.94
LCS-VE-021225	8/1/25	Cs-137	56.1 ± 2	51.6	41.3 - 61.9	Pass	1.09
LCS-VE-021225	8/1/25	Zn-65	287 ± 13	247	198 - 296	Pass	1.16
LCS-SO-031225	8/1/24	K-40	15,335 ± 1276	14,175	11,340 - 17,010	Pass	1.08
LCS-SO-031225	8/1/24	Mn-54	3,335 ± 308	3,051	2,441 - 3,661	Pass	1.09
LCS-SO-031225	8/1/24	Co-57	7,901 ± 179	8,910	7,128 - 10,692	Pass	0.89
LCS-SO-031224	8/1/24	Co-60	18,579 ± 283	18,900	15,120 - 22,680	Pass	0.98
LCS-SO-031225	8/1/24	Cs-134	9,450 ± 257	11,259	9,007 - 13,511	Pass	0.84
LCS-SO-031225	8/1/24	Cs-137	44,894 ± 431	44,550	35,640 - 53,460	Pass	1.01
LCS-SO-031225	8/1/24	Zn-65	10,261 ± 627	11,205	8,964 - 13,446	Pass	0.92

[a] Liquid sample results are reported in pCi/Liter, air filters (pCi/m3), charcoal (pCi/charcoal canister), and solid samples (pCi/kg).
[b] Laboratory codes : W & SPW (Water), MI (milk), AP (air filter), SO (soil), VE (vegetation), CH (charcoal canister), F (fish), U (urine).
[c] Results are based on single determinations.
[d] Acceptance criteria are listed in Attachment A of this report.

TABLE A-3. Intralaboratory "Spiked" Samples

Lab Code[b]	Reference Date	Analysis	Concentration[a] Laboratory results 2s, n=1[c]	Known Activity	Control Limits[d]	Acceptance	Ratio Lab/Known
SPDW-60780	3/4/25	Gr. Alpha	36.2 ± 1.9	34.8	17.4 - 41.8	Pass	1.04
SPDW-60780	3/4/25	Gr. Beta	132 ± 2	137	109.9 - 164.9	Pass	0.96
SPDW-60815	3/21/25	H-3	21,670 ± 466	22,100	17,680 - 26,520	Pass	0.98
SPDW-60797	3/11/25	Th-230	63.2 ± 7.8	72.2	58 - 0,087	Pass	0.88
SPDW-60842	4/1/25	H-3	20,939 ± 460	22,100	17,680 - 26,520	Pass	0.95
SPDW-60860	4/8/25	H-3	20,388 ± 454	22,100	17,680 - 26,520	Pass	0.92
SPDW-60865	4/18/25	H-3	20,672 ± 457	22,100	17,680 - 26,520	Pass	0.94
SPDW-60869	4/13/25	Ra-228	6.30 ± 1.11	6.12	4.28 ± 7.96	Pass	1.03
SPDW-60880	5/7/25	H-3	21,535 ± 470	22,100	17,680 - 26,520	Pass	0.97
SPDW-60883	5/7/25	Sr-90	17.6 ± 1.1	15.4	12.3 - 18.5	Pass	1.14
LCS-W-05222025	1/13/25	Co-60	70.1 ± 6.2	66.8	53 - 0,080	Pass	1.05
LCS-W-05222025	1/13/25	Zn-65	80.3 ± 13.7	74.3	59 - 0,089	Pass	1.08
LCS-W-05222025	1/13/25	Ba-133	77.2 ± 6.8	89.7	72 - 0,108	Pass	0.86
LCS-W-05222025	1/13/25	Cs-134	35.5 ± 4.7	38.4	31 - 0,046	Pass	0.92
LCS-W-05222025	1/13/25	Cs-137	161 ± 10	157	126 - 0,188	Pass	1.03
LCS-SO-05222025	3/19/18	Cs-134	3,810 ± 280	4,210	3,368 - 5,052	Pass	0.90
LCS-SO-05222025	3/19/18	Cs-137	3,530 ± 87	4,210	3,368 - 5,052	Pass	0.84
LCS-SO-05222025	3/19/18	Pb-212	1,160 ± 62	1,240	992 - 1,488	Pass	0.94
LCS-SO-05222025	3/19/18	Pb-214	1,860 ± 77	1,850	1,480 - 2,220	Pass	1.01
LCS-SO-05222025	3/19/18	Ac-228	1,120 ± 360	1,240	992 - 1,488	Pass	0.90
LCS-W-052625	1/13/25	Zn-65	69.7 ± 8.6	74.3	59 - 89.2	Pass	0.94
LCS-W-052625	1/13/25	Ba-133	77.0 ± 4.4	89.7	72 - 108	Pass	0.86
LCS-W-052625	1/13/25	Cs-134	30.9 ± 2.8	38.4	30.7 - 46.1	Pass	0.80
LCS-W-052625	1/13/25	Cs-137	161 ± 6	157	126 - 188	Pass	1.03
LCS-W-052625	1/13/25	Co-60	70.6 ± 3.2	66.8	53.4 - 80.2	Pass	1.06
SPDW-60943	7/10/25	H-3	20,923 ± 461	22,100	17,680 - 26,520	Pass	0.95
SPDW-60946	7/18/25	H-3	20,730 ± 461	22,100	17,680 - 26,520	Pass	0.94
SPDW-60957	8/1/25	H-3	20,515 ± 460	22,100	17,680 - 26,520	Pass	0.93
SPDW-60976	8/19/25	H-3	19,131 ± 428	22,100	17,680 - 26,520	Pass	0.87
LCS-W-08/08/25	1/13/25	Ba-133	71.8 ± 4.7	89.7	71.8 - 107.6	Pass	0.80
LCS-W-08/08/25	1/13/25	Cs-134	35.7 ± 5.1	38.4	30.7 - 46.1	Pass	0.93
LCS-W-08/08/25	1/13/25	Cs-137	156 ± 7	157.0	125.6 - 188.4	Pass	0.99
LCS-W-08/08/25	1/13/25	Co-60	65.4 ± 3.7	67	53.4 - 80.2	Pass	0.98
LCS-W-08/08/25	1/13/25	Zn-65	70.7 ± 10.6	74.3	59.4 - 89.2	Pass	0.95
LCS-AP-0814/25	8/1/24	Cs-134	8.74 ± 1.57	9.03	7.22 - 10.8	Pass	0.97
LCS-AP-0814/25	8/1/24	Cs-137	6.32 ± 0.83	7.02	5.62 - 8.42	Pass	0.90
LCS-AP-0814/25	8/1/24	Co-60	8.97 ± 0.71	9.00	7.20 - 10.8	Pass	1.00
SPDW-5045	8/20/25	Sr-90	16.6 ± 1.1	15.4	12.3 - 18.5	Pass	1.08

[a] Liquid sample results are reported in pCi/Liter, air filters (pCi/filter), charcoal (pCi/charcoal canister), and solid samples (pCi/kg). vegetation (pCi/sample)

[b] Laboratory codes : W & SPW (Water), MI (milk), AP (air filter), SO (soil), VE (vegetation), CH (charcoal canister), F (fish), U (urine).

[c] Results are based on single determinations.

[d] Acceptance criteria are listed in Attachment A of this report.

TABLE A-3. Intralaboratory "Spiked" Samples

Lab Code[b]	Reference Date	Analysis	Concentration[a] Laboratory results 2s, n=1[c]	Known Activity	Control Limits[d]	Acceptance	Ratio Lab/Known
LCS-W-081325	1/13/25	Ba-133	84.7 ± 4.4	89.7	71.8 - 107.6	Pass	0.94
LCS-W-081325	1/13/25	Cs-134	34.8 ± 3.1	38.4	30.7 - 46.1	Pass	0.91
LCS-W-081325	1/13/25	Cs-137	151 ± 6	157	126 - 188	Pass	0.96
LCS-W-081325	1/13/25	Co-60	67.2 ± 4.1	66.8	53.4 - 80.2	Pass	1.01
LCS-W-081325	1/13/25	Zn-65	76.3 ± 10.6	74.3	59.4 - 89.2	Pass	1.03
SPDW-60989	9/2/25	H-3	19,720 ± 435	22,100	17,680 - 26,520	Pass	0.89
LCS-W-101725	10/17/25	H-3	6,776 ± 264	7,550	6,040 - 9,060	Pass	0.90
LCS-W-102325	10/23/25	H-3	7401 ± 285	7,550	6,040 - 9,060	Pass	0.98
LCS-W-103125	10/31/25	H-3	7,201 ± 273	7,550	6,040 - 9,060	Pass	0.95
LCS-AP-102925	9/22/25	Cs-134	293 ± 5	341	273 - 0,409	Pass	0.86
LCS-AP-102925	9/22/25	Cs-137	385 ± 6	379	303 - 0,455	Pass	1.02
LCS-AP-102925	9/22/25	Co-60	314 ± 4	322	258 - 0,386	Pass	0.98
LCS-AP-102925	9/22/25	Zn-65	207 ± 7	240	192 - 0,288	Pass	0.86
LCS-W-111025	8/1/25	Cs-134	189 ± 34	198	159 - 238	Pass	0.95
LCS-W-111025	8/1/25	Cs-137	172 ± 7	181	145 - 217	Pass	0.95
LCS-W-111025	8/1/25	Co-60	173 ± 5	196	157 - 235	Pass	0.88
LCS-W-111025	8/1/25	Mn-54	198 ± 8	215	172 - 258	Pass	0.92
LCS-W-111025	8/1/25	Zn-65	599 ± 18	624	499 - 749	Pass	0.96
LCS-W-121025	12/10/25	H-3	6,807 ± 265	7,550	6,040 - 9,060	Pass	0.90
LCS-W-121525	12/15/25	H-3	6,970 ± 269	7,550	6,040 - 9,060	Pass	0.92

[a] Liquid sample results are reported in pCi/Liter, air filters (pCi/filter), charcoal (pCi/charcoal canister), and solid samples (pCi/kg). vegetation (pCi/sample)

[b] Laboratory codes : W & SPW (Water), MI (milk), AP (air filter), SO (soil), VE (vegetation), CH (charcoal canister), F (fish), U (urine).

[c] Results are based on single determinations.

[d] Acceptance criteria are listed in Attachment A of this report.

TABLE A-4. Intralaboratory "Blank" Samples

Lab Code[b]	Sample Type	Collection Date	Analysis[c]	Concentration[a] Laboratory results (4.66σ) LLD	Activity[d]	Acceptance Criteria (4.66 σ)
SPDW-60669	Water	1/20/2025	Ra-228	0.76	0.22 ± 0.38	2
SPDW-60693	Water	2/4/2025	Sr-89	0.65	0.29 ± 0.56	5
SPDW-60693	Water	2/4/2025	Sr-90	0.64	0.18 ± 0.32	1
SPDW-60707	Water	2/5/2025	H-3	173	-10 ± 82	200
SPDW-60715	Water	2/11/2025	I-131	0.16	-0.06 ± 0.08	1
SPDW-60788	Water	3/10/2025	H-3	176	46 ± 90	200
SPDW-60788	Water	3/10/2025	H-3	176	46 ± 90	200
SPDW-60796	Water	3/11/2025	Th-228	1.20	-0.39 ± 0.57	2
SPDW-60796	Water	3/11/2025	Th-230	0.60	0.26 ± 0.51	2
SPDW-60796	Water	3/11/2025	Th-232	0.60	0.13 ± 0.44	2
SPDW-60814	Water	3/21/2025	H-3	177	6 ± 82	200
SPDW-60841	Water	4/1/2025	H-3	175	35 ± 89	200
SPDW-60868	Water	4/13/2025	Ra-228	0.63	-0.28 ± 0.25	2
SPDW-60868	Water	4/13/2025	Ra-228	0.63	-0.28 ± 0.25	2
SPDW-60875	Water	4/24/2025	I-131	0.20	0.02 ± 0.11	1
SPDW-60682	Water	5/7/2025	Sr-89	0.61	-0.36 ± 0.50	5
SPDW-60682	Water	5/7/2025	Sr-90	0.65	0.30 ± 0.34	1
SPDW-60864	Water	4/18/2025	H-3	173	105 ± 91	200
SPDW-60880	Water	5/7/2025	H-3	177	38 ± 90	200
SPDW-60942	Water	7/10/2025	H-3	175	-18 ± 81	200
SPDW-60945	Water	7/18/2025	H-3	177.36	-45.20 ± 85.32	200
SPDW-60956	Water	8/1/2025	H-3	185	-31 ± 90	200
SPDW-60956	Water	8/1/2025	H-3	163	24 ± 82	200
SPDW-5044	Water	8/20/2025	Sr-89	0.50	-0.02 ± 0.43	5
SPDW-5044	Water	8/20/2025	Sr-90	0.60	0.10 ± 0.29	1
SPDW-60983	Water	8/21/2025	I-131	0.16	-0.07 ± 0.08	1
SPDW-60975	Water	8/19/2025	H-3	166	38 ± 89	200
SPDW-60988	Water	9/2/2025	H-3	172	60 ± 86	200
MB-103125	Water	10/31/2025	H-3	173	-10 ± 85	200
MB-1013-BLK	Water	11/3/2025	Gr. Alpha	0.43	0.26 ± 0.48	1
MB-1041-BLK	Water	11/7/2025	Gr. Alpha	0.44	0.03 ± 0.48	1
MB-1041-BLK	Water	11/7/2025	Gr. Beta	0.55	-0.24 ± 0.60	1
MB-1042-BLK	Water	11/10/2025	Gr. Alpha	0.44	-0.30 ± 0.46	1

[a] Liquid sample results are reported in pCi/Liter, air filters (pCi/m^3), charcoal (pCi/charcoal canister), and solid samples (pCi/g).

[b] Laboratory codes : W & SPW (Water), MI (milk), AP (air filter), SO (soil), VE (vegetation), CH (charcoal canister), F (fish), U (urine).

[c] I-131(G); iodine-131 as analyzed by gamma spectroscopy.

[d] Activity reported is a net activity result.

TABLE A-4. Intralaboratory "Blank" Samples

Lab Code[b]	Sample Type	Collection Date	Analysis[c]	Concentration[a]		
				Laboratory results (4.66σ)		Acceptance
				LLD	Activity[d]	Criteria (4.66 σ)
MB-1091-BLK	Water	12/11/2025	Gr. Alpha	0.41	0.11 ± 0.45	1
MB-1091-BLK	Water	12/11/2025	Gr. Beta	0.51	-0.48 ± 0.54	1
MB-120825	Water	12/8/2025	I-131	0.25	0.15 ± 0.15	1
MB-121025	Water	12/10/2025	H-3	170	3 ± 79	200
MB-1098-BLK	Water	12/15/2025	Gr. Alpha	0.43	0.03 ± 0.47	1
MB-1098-BLK	Water	12/15/2025	Gr. Beta	0.55	-0.38 ± 0.58	1
MB-1116-BLK	Water	12/24/2025	Gr. Alpha	0.37	0.25 ± 0.42	1
MB-1116-BLK	Water	12/24/2025	Gr. Beta	0.48	0.20 ± 0.53	1
MB-1162-BLK	Water	12/30/2025	Gr. Alpha	0.94	0.25 ± 0.99	1
MB-1162-BLK	Water	12/30/2025	Gr. Beta	0.52	-0.01 ± 0.57	1

[a] Liquid sample results are reported in pCi/Liter, air filters (pCi/m^3), charcoal (pCi/charcoal canister), and solid samples (pCi/g).

[b] Laboratory codes : W & SPW (Water), MI (milk), AP (air filter), SO (soil), VE (vegetation), CH (charcoal canister), F (fish), U (urine).

[c] I-131(G); iodine-131 as analyzed by gamma spectroscopy.

[d] Activity reported is a net activity result.

TABLE A-5. Intralaboratory "Duplicate" Samples

			Concentration[a]				
Lab Code[b]	Collection Date	Analysis	First Result	Second Result	Averaged Result	RPD	Acceptance
AP-3356,3357	1/1/2025	Be-7	0.043 ± 0.004	0.037 ± 0.006	0.040 ± 0.004	15.4	Pass
AP-3377,3378	1/1/2025	Be-7	0.057 ± 0.009	0.055 ± 0.011	0.056 ± 0.007	4.7	Pass
U-3398,3399	1/2/2025	Beta (-K40)	6.93 ± 1.82	4.76 ± 1.79	5.84 ± 1.28	37.2	Pass [c]
AP-011325A,B	1/13/2025	Gr. Beta	0.023 ± 0.005	0.024 ± 0.005	0.024 ± 0.004	4.3	Pass
AP-020325A,B	2/3/2025	Gr. Beta	0.022 ± 0.004	0.018 ± 0.004	0.020 ± 0.003	20.0	Pass
AP-021725A,B	2/17/2025	Gr. Beta	0.035 ± 0.005	0.036 ± 0.005	0.036 ± 0.004	2.8	Pass
XW-3596,3597	2/20/2025	H-3	270 ± 101	325 ± 104	298 ± 72	18.5	Pass
SG-3588,3589	2/26/2025	Gr. Alpha	37.6 ± 3.9	24.7 ± 3.2	31.2 ± 2.5	41.4	Pass [d]
SG-3588,3589	2/26/2025	Gr. Beta	31.5 ± 1.8	30.1 ± 1.8	30.8 ± 1.3	4.5	Pass
SG-3588,3589	2/26/2025	Ra-226	7.38 ± 0.46	6.63 ± 0.27	7.01 ± 0.27	10.7	Pass
SG-3588,3589	2/26/2025	Ra-228	8.50 ± 0.46	7.60 ± 0.86	8.05 ± 0.49	11.2	Pass
WW-3724,3725	3/12/2025	H-3	199 ± 93	194 ± 93	197 ± 66	2.5	Pass
AP-031725A,B	3/17/2025	Gr. Beta	0.024 ± 0.005	0.030 ± 0.005	0.027 ± 0.004	22.2	Pass
SW-3770,3771	3/19/2025	H-3	13,111 ± 367	12,865 ± 363	12,988 ± 258	1.9	Pass
W-3814,3815	3/26/2025	H-3	159 ± 95	137 ± 94	148 ± 67	14.9	Pass
AP-040725A,B	4/7/2025	Gr. Beta	0.016 ± 0.004	0.018 ± 0.004	0.017 ± 0.003	11.8	Pass
SW-3770,3771	3/19/2025	H-3	13,111 ± 367	12,865 ± 363	12,988 ± 258	1.9	Pass
E-3814,3815	3/26/2025	H-3	159 ± 95	137 ± 94	148 ± 67	14.9	Pass
S-O5E0076-01,02	5/13/2025	Gr. Alpha	33.28 ± 3.39	29.62 ± 3.66	31.45 ± 4.99	11.6	Pass
S-O5E0076-01,02	5/13/2025	Gr. Beta	28.38 ± 1.82	28.50 ± 1.81	28.44 ± 2.57	0.4	Pass
S-O5E0076-01,02	5/13/2025	Ra-226	4.42 ± 0.12	4.13 ± 0.11	4.28 ± 0.16	6.8	Pass
S-O5E0076-01,02	5/13/2025	Ra-228	5.08 ± 0.18	4.31 ± 0.20	4.70 ± 0.27	16.4	Pass
LW-4571,4752	6/17/2025	H-3	104 ± 90	52 ± 87	78 ± 62	66.7	Pass [e]
AP-4734,4735	7/1/2025	Be-7	0.070 ± 0.008	0.078 ± 0.008	0.074 ± 0.006	11.0	Pass
VE-4614,4615	7/1/2025	K-40	3.56 ± 0.45	3.60 ± 0.31	3.58 ± 0.27	1.2	Pass
AP-062525A,B	6/25/2025	Gr. Beta	0.022 ± 0.003	0.022 ± 0.003	0.022 ± 0.004	2.7	Pass
AP-06/26/25A,B	6/26/2025	Gr. Beta	0.020 ± 0.004	0.022 ± 0.004	0.021 ± 0.005	10.7	Pass
AP-06/30/25A,B	6/30/2025	Gr. Beta	0.018 ± 0.004	0.020 ± 0.004	0.019 ± 0.006	10.7	Pass
AP-070125A,B	7/1/2025	Gr. Beta	0.023 ± 0.002	0.023 ± 0.002	0.023 ± 0.003	0.8	Pass
AP-070225A,B	7/2/2025	Gr. Beta	0.014 ± 0.002	0.012 ± 0.002	0.013 ± 0.003	17.4	Pass
AP-070325A,B	7/3/2025	Gr. Beta	0.024 ± 0.002	0.023 ± 0.002	0.023 ± 0.003	4.5	Pass
AP-070825A,B	7/8/2025	Gr. Beta	0.021 ± 0.003	0.022 ± 0.003	0.021 ± 0.004	1.5	Pass
AP-070925A,B	7/9/2025	Gr. Beta	0.017 ± 0.003	0.017 ± 0.003	0.017 ± 0.005	2.5	Pass
AP-071425A,B	7/14/2025	Gr. Beta	0.019 ± 0.004	0.022 ± 0.004	0.020 ± 0.006	11.4	Pass
AP-071525A,B	7/15/2025	Gr. Beta	0.027 ± 0.003	0.027 ± 0.003	0.027 ± 0.004	0.0	Pass
AP-071625A,B	7/16/2025	Gr. Beta	0.028 ± 0.003	0.030 ± 0.003	0.029 ± 0.005	7.6	Pass
AP-072125A,B	7/21/2025	Gr. Beta	0.021 ± 0.005	0.016 ± 0.004	0.018 ± 0.006	22.9	Pass
AP-072225A,B	7/22/2025	Gr. Beta	0.020 ± 0.002	0.016 ± 0.002	0.018 ± 0.003	20.6	Pass
AP-072325A,B	7/23/2025	Gr. Beta	0.019 ± 0.002	0.017 ± 0.002	0.018 ± 0.003	9.5	Pass

TABLE A-5. Intralaboratory "Duplicate" Samples

			Concentration[a]				
Lab Code[b]	Collection Date	Analysis	First Result	Second Result	Averaged Result	RPD	Acceptance
AP-0724/25A,B	7/24/2025	Gr. Beta	0.018 ± 0.002	0.018 ± 0.002	0.018 ± 0.003	0.6	Pass
AP-072525A,B	7/28/2025	Gr. Beta	0.024 ± 0.003	0.024 ± 0.003	0.024 ± 0.004	1.2	Pass
AP-072925A,B	7/29/2025	Gr. Beta	0.020 ± 0.002	0.019 ± 0.002	0.019 ± 0.003	5.2	Pass
AP-073025A,B	7/30/2025	Gr. Beta	0.024 ± 0.023	0.023 ± 0.004	0.023 ± 0.023	5.5	Pass
AP-073125A,B	7/31/2025	Gr. Beta	0.017 ± 0.002	0.016 ± 0.002	0.017 ± 0.003	3.4	Pass
AP-080425A,B	8/4/2025	Gr. Beta	0.019 ± 0.003	0.019 ± 0.003	0.019 ± 0.004	1.2	Pass
MI-4986,4987	8/4/2025	K-40	1204 ± 121	1078 ± 107	1141 ± 162	11.0	Pass
AP-080525A,B	8/5/2025	Gr. Beta	0.023 ± 0.002	0.022 ± 0.002	0.023 ± 0.003	6.6	Pass
AP-080625A,B	8/6/2025	Gr. Beta	0.018 ± 0.003	0.020 ± 0.003	0.019 ± 0.004	9.3	Pass
AP-081125A,B	8/11/2025	Gr. Beta	0.028 ± 0.005	0.028 ± 0.005	0.028 ± 0.007	0.3	Pass
AP-081225A,B	8/12/2025	Gr. Beta	0.036 ± 0.003	0.036 ± 0.003	0.036 ± 0.004	0.9	Pass
S-O5H0065-03,04	8/13/2025	Gr. Alpha	33.52 ± 4.14	26.32 ± 3.75	29.92 ± 5.59	24.1	Pass [d]
S-O5H0065-03,04	8/13/2025	Gr. Beta	34.38 ± 2.15	30.92 ± 1.56	32.65 ± 2.66	10.6	Pass
S-O5H0065-03,04	8/13/2025	Ra-226	7.22 ± 0.32	7.05 ± 0.31	7.14 ± 0.44	2.4	Pass
S-O5H0065-03,04	8/13/2025	Ra-228	7.04 ± 0.56	7.45 ± 0.58	7.25 ± 0.80	5.7	Pass
AP-081425A,B	8/14/2025	Gr. Beta	0.031 ± 0.003	0.032 ± 0.003	0.032 ± 0.004	4.2	Pass
AP-081825A,B	8/18/2025	Gr. Beta	0.026 ± 0.003	0.026 ± 0.003	0.026 ± 0.005	2.1	Pass
AP-081925A,B	8/19/2025	Gr. Beta	0.025 ± 0.002	0.029 ± 0.003	0.027 0.004	13.4	Pass
AP-082025A,B	8/20/2025	Gr. Beta	0.024 ± 0.003	0.021 ± 0.003	0.022 ± 0.004	13.0	Pass
AP-082625A,B	8/26/2025	Gr. Beta	0.022 ± 0.004	0.021 ± 0.004	0.022 ± 0.006	3.8	Pass
AP-090225A,B	9/2/2025	Gr. Beta	0.017 ± 0.004	0.017 ± 0.004	0.017 ± 0.006	1.7	Pass
AP-090325A,B	9/3/2025	Gr. Beta	0.022 ± 0.028	0.023 ± 0.003	0.023 ± 0.029	3.8	Pass
MI-5183,5184	9/9/2025	K-40	1318 ± 108	1291 ± 99	1305 ± 147	2.1	Pass
AP-090925A,B	9/9/2025	Gr. Beta	0.019 ± 0.002	0.020 ± 0.002	0.019 ± 0.003	8.1	Pass
AP-091025A,B	9/10/2025	Gr. Beta	0.016 ± 0.003	0.016 ± 0.003	0.016 ± 0.004	0.4	Pass
AP-091525A,B	9/15/2025	Gr. Beta	0.036 ± 0.004	0.034 ± 0.004	0.035 ± 0.005	4.2	Pass
AP-091625A,B	9/16/2025	Gr. Beta	0.053 ± 0.003	0.057 ± 0.003	0.055 ± 0.005	6.2	Pass
AP-091725A,B	9/17/2025	Gr. Beta	0.055 ± 0.005	0.050 ± 0.005	0.053 ± 0.007	8.7	Pass
AP-091825A,B	9/18/2025	Gr. Beta	0.062 ± 0.004	0.067 ± 0.004	0.065 ± 0.005	6.8	Pass
AP-092325A,B	9/23/2025	Gr. Beta	0.050 ± 0.003	0.052 ± 0.003	0.051 ± 0.005	4.8	Pass
AP-092425A,B	9/24/2025	Gr. Beta	0.037 ± 0.004	0.040 ± 0.004	0.038 ± 0.006	8.9	Pass
AP-093025A,B	9/30/2025	Gr. Beta	0.040 ± 0.004	0.042 ± 0.004	0.041 ± 0.005	5.5	Pass
AP-100625A,B	10/6/2025	Gr. Beta	0.056 ± 0.003	0.053 ± 0.005	0.055 ± 0.006	5.4	Pass
AP-100725A,B	10/7/2025	Gr. Beta	0.047 ± 0.003	0.043 ± 0.003	0.045 ± 0.004	8.2	Pass
AP-100825A,B	10/8/2025	Gr. Beta	0.061 ± 0.004	0.058 ± 0.038	0.059 ± 0.039	4.9	Pass
AP-101325A,B	10/13/2025	Gr. Beta	0.028 ± 0.005	0.034 ± 0.005	0.031 ± 0.007	20.1	Pass
AP-101425A,B	10/14/2025	Gr. Beta	0.021 ± 0.002	0.019 ± 0.002	0.020 ± 0.003	13.1	Pass
AP-101525A,B	10/15/2025	Gr. Beta	0.025 ± 0.004	0.023 ± 0.004	0.024 ± 0.005	9.2	Pass
AP-102125A,B	10/21/2025	Gr. Beta	0.022 ± 0.002	0.022 ± 0.002	0.022 ± 0.003	1.0	Pass
AP-102225A,B	10/22/2025	Gr. Beta	0.031 ± 0.003	0.030 ± 0.003	0.031 ± 0.004	5.0	Pass

TABLE A-5. Intralaboratory "Duplicate" Samples

			Concentration[a]				
Lab Code[b]	Collection Date	Analysis	First Result	Second Result	Averaged Result	RPD	Acceptance
AP-102825A,B	10/28/2025	Gr. Beta	0.013 ± 0.002	0.014 ± 0.002	0.014 ± 0.003	6.5	Pass
AP-102925A,B	10/29/2025	Gr, Beta	0.011 ± 0.002	0.011 ± 0.002	0.011 ± 0.004	1.6	Pass
AP-110325A.B	11/3/2025	Gr. Beta	0.019 ± 0.003	0.016 ± 0.003	0.018 ± 0.004	13.6	Pass
SG-O5K0028-03,04	11/5/2025	Gr. Alpha	55.64 ± 5.73	50.63 ± 5.82	53.14 ± 8.17	9.4	Pass
SG-O5K0028-03,04	11/5/2025	Gr. Beta	52.76 ± 2.76	53.15 ± 2.93	52.96 ± 4.03	0.7	Pass
SG-O5K0028-03,04	11/5/2025	Ra-226	11.3 ± 0.4	12.2 ± 0.3	11.8 ± 0.5	7.7	Pass
SG-O5K0028-03,04	11/5/2025	Ra-228	10.9 ± 0.6	11.3 ± 0.5	11.1 ± 0.8	3.6	Pass
AP-110525A.B	11/5/2025	Gr. Beta	0.024 ± 0.003	0.024 ± 0.003	0.024 ± 0.004	0.8	Pass
AP-110625A,B	11/6/2025	Gr. Beta	0.028 ± 0.003	0.027 ± 0.002	0.027 ± 0.004	5.8	Pass
AP-111025A,B	11/10/2025	Gr. Beta	0.022 ± 0.003	0.023 ± 0.003	0.023 ± 0.004	7.1	Pass
AP-111225A,B	11/12/2025	Gr. Beta	0.017 ± 0.002	0.017 ± 0.002	0.017 ± 0.003	0.2	Pass
AP-111425A,B	11/14/2025	Gr. Beta	0.018 ± 0.002	0.021 ± 0.002	0.020 ± 0.003	11.5	Pass
AP-111725A,B	11/17/2025	Gr. Beta	0.027 ± 0.005	0.028 ± 0.005	0.027 ± 0.007	7.1	Pass
AP-111825A,B	11/18/2025	Gr. Beta	0.027 ± 0.002	0.023 ± 0.002	0.025 ± 0.003	16.4	Pass
AP-111925A,B	11/19/2025	Gr. Beta	0.031 ± 0.004	0.032 ± 0.004	0.032 ± 0.006	0.5	Pass
AP-112025A,B	11/20/2025	Gr. Beta	0.023 ± 0.002	0.024 ± 0.002	0.024 ± 0.003	4.6	Pass
AP-112525A,B	11/25/2025	Gr. Beta	0.026 ± 0.003	0.026 ± 0.003	0.026 ± 0.004	0.2	Pass
AP-112625A,B	11/26/2025	Gr. Beta	0.045 ± 0.005	0.047 ± 0.005	0.046 ± 0.007	4.0	Pass
AP-120125A,B	12/1/2025	Gr. Beta	0.018 ± 0.003	0.020 ± 0.003	0.019 ± 0.004	9.2	Pass
AP-120325A,B	12/3/2025	Gr. Beta	0.025 ± 0.003	0.027 ± 0.003	0.026 ± 0.004	7.6	Pass
AP-120425A,B	12/4/2025	Gr. Beta	0.018 ± 0.001	0.018 ± 0.003	0.018 ± 0.003	3.2	Pass
AP-120825A,B	12/8/2025	Gr. Beta	0.019 ± 0.003	0.018 ± 0.003	0.018 ± 0.004	4.1	Pass
AP-121025A,B	12/10/2025	Gr. Beta	0.035 ± 0.003	0.032 ± 0.003	0.033 ± 0.005	7.7	Pass
AP-121125A,B	12/11/2025	Gr. Beta	0.026 ± 0.004	0.026 ± 0.004	0.026 ± 0.006	1.0	Pass
AP-121525A,B	12/15/2025	Gr. Beta	0.032 ± 0.005	0.031 ± 0.005	0.032 ± 0.007	2.4	Pass
AP-121625A,B	12/16/2025	Gr. Beta	0.023 ± 0.002	0.025 ± 0.002	0.024 ± 0.003	5.5	Pass
AP-121725A,B	12/17/2025	Gr. Beta	0.025 ± 0.003	0.022 ± 0.003	0.024 ± 0.004	12.7	Pass
AP-122225A,B	12/22/2025	Gr. Beta	0.035 ± 0.004	0.035 ± 0.004	0.035 ± 0.006	1.5	Pass
AP-122325A,B	12/23/2025	Gr. Beta	0.026 ± 0.004	0.030 ± 0.004	0.028 ± 0.006	17.1	Pass
AP-122925A,B	12/29/2025	Gr. Beta	0.035 ± 0.005	0.031 ± 0.048	0.033 ± 0.048	12.5	Pass
AP-123025A,B	12/30/2025	Gr. Beta	0.029 ± 0.002	0.028 ± 0.002	0.028 ± 0.003	4.4	Pass

Note: Duplicate analyses are performed on every twentieth sample received. Results are not listed for those analyses with activities that measure below the LLD.

[a] Results are reported in units of pCi/L, except for air filters (pCi/Filter or pCi/m3), food products, vegetation, soil and sediment (pCi/g).

[b] AP (Air Particulate), AV (Aquatic Vegetation), BS (Bottom Sediment), CF (Cattle Feed), CH (Charcoal Canister), DW (Drinking Water), E (Egg), F (Fish), G (Grass), LW (Lake Water), MI (Milk), P (Precipitation), PM (Powdered Milk), S (Solid), SG (Sludge), SO (Soil), SS (Shoreline Sediment), SW (Surface Water), SWT (Surface Water Treated), SWU (Surface Water Untreated), U (Urine), VE (Vegetation), W (Water), WW (Well Water).

[c] High solids in duplicate urine samples caused inhomogeneity of sample aliquots resulting in higher Relative Percent Difference (37.2%).

[d] Matrix inhomogeneity in sludge and solid samples caused higher relative percent difference in duplicate results.

[e] High Relative Percent Difference value (66.7%) caused by activity concentrations below the MDC's.

TABLE A-6. Department of Energy's Mixed Analyte Performance Evaluation Program (MAPEP).

			Concentration[a]			
Lab Code [b]	Reference Date	Analysis	Laboratory result	Known Activity	Acceptance Range [c]	Acceptance
MADW-3678	2/1/2025	Cs-134	-0.023 ± 0.098	0	NA [c]	Pass
MADW-3678	2/1/2025	Cs-137	7.3 ± 0.4	6.9	4.8 - 9.0	Pass
MADW-3678	2/1/2025	Co-57	30.9 ± 0.4	32.1	21.6 - 40.2	Pass
MADW-3678	2/1/2025	Co-60	0.31 ± 0.07	0	NA [c]	Pass
MADW-3678	2/1/2025	Mn-54	0.02 ± 0.07	0	NA [c]	Pass
MADW-3678	2/1/2025	Zn-65	26.3 ± 0.8	26.7	18.7 - 34.7	Pass
MADW-3678	2/1/2025	K-40	32.4 ± 2.3	30.3	21.2 - 39.4	Pass
MAAP-3670	2/1/2025	Cs-134	0.34 ± 0.07	0.340	0.238 - 0.442	Pass
MAAP-3670	2/1/2025	Cs-137	0.76 ± 0.12	0.678	0.475 - 0.881	Pass
MAAP-3670	2/1/2025	Co-57	0.74 ± 0.10	0	NA [c, d]	Fail
MAAP-3670	2/1/2025	Co-60	0.48 ± 0.10	0.486	0.340 - 0.632	Pass
MAAP-3670	2/1/2025	Mn-54	0.002 ± 0.041	0	NA [c]	Pass
MAAP-3670	2/1/2025	Zn-65	-0.16 ± 0.16	0	NA [c]	Pass
MAW-05I0013-01	8/1/2025	Gross Alpha	0.78 ± 0.06	0.96	0.29 - 1.63	Pass
MAW-05I0013-01	8/1/2025	Gross Beta	1.76 ± 0.05	1.90	0.95 - 2.85	Pass
MAW-O5I0013-02	8/1/2025	Cs-134	5.50 ± 0.16	7.34	5.14 - 9.54	Pass
MAW-O5I0013-02	8/1/2025	Cs-137	6.51 ± 0.24	6.70	4.7 - 8.7	Pass
MAW-O5I0013-02	8/1/2025	Co-57	0.003 ± 0.066	0	NA [c]	Pass
MAW-O5I0013-02	8/1/2025	Co-60	6.81 ± 0.16	7.24	NA [c]	Pass
MAW-O5I0013-02	8/1/2025	Mn-54	7.39 ± 0.24	7.95	5.57 - 10.34	Pass
MAW-O5I0013-02	8/1/2025	Zn-65	21.3 ± 0.5	23.1	16.2 - 30.0	Pass
MAW-O5I0013-02	8/1/2025	K-40	8.11 ± 0.93	0	NA [c]	Fail [e]
MAW-O5I0013-02	8/1/2025	Ni-63	14.0 ± 2.0	25.0	17.0 - 32.5	Fail [f]
MAW-O5I0013-02	8/1/2025	H-3	240 ± 10	276	193 - 359	Pass
MASO-O5I0013-04	8/1/2025	Cs-134	491 ± 8	613	429 - 797	Pass
MASO-O5I0013-04	8/1/2025	Cs-137	721 ± 11	686	480 - 892	Pass
MASO-O5I0013-04	8/1/2025	Co-57	1.23 ± 17.83	0	NA [c]	Pass
MASO-O5I0013-04	8/1/2025	Co-60	1136 ± 10	1144	801 - 1487	Pass
MASO-O5I0013-04	8/1/2025	Mn-54	846 ± 13	771	540 - 1002	Pass
MASO-O5I0013-04	8/1/2025	Zn-65	0.12 ± 6.20	0	NA [c]	Pass
MASO-O5I0013-04	8/1/2025	K-40	580 ± 39	492	344 - 640	Pass

TABLE A-6. Department of Energy's Mixed Analyte Performance Evaluation Program (MAPEP).

			Concentration[a]			
Lab Code [b]	Reference Date	Analysis	Laboratory result	Known Activity	Acceptance Range [c]	Acceptance
MAAP-O5I0013-05	8/1/2025	Gross Alpha	1.34 ± 0.08	1.24	0.37 - 2.11	Pass
MAAP-O5I0013-05	8/1/2025	Gross Beta	1.62 ± 0.05	1.75	0.88 - 2.63	Pass
MAVE-O5I0013-06	8/1/2025	Cs-134	-0.01 ± 0.04	0	NA [c]	Pass
MAVE-O5I0013-06	8/1/2025	Cs-137	0.63 ± 0.09	0.986	0.690 - 1.282	Fail [g]
MAVE-O5I0013-06	8/1/2025	Co-57	3.04 ± 0.12	4.47	3.13 - 5.81	Fail [g]
MAVE-O5I0013-06	8/1/2025	Co-60	1.49 ± 0.11	2.30	1.61 - 2.99	Fail [g]
MAVE-O5I0013-06	8/1/2025	Mn-54	2.13 ± 0.15	3.10	2.17 - 4.03	Fail [g]
MAVE-O5I0013-06	8/1/2025	Zn-65	5.88 ± 0.38	9.29	6.50 - 12.08	Fail [g]

[a] Results are reported in units of Bq/kg (soil), Bq/L (water) or Bq/total sample (filters, vegetation).

[b] Laboratory codes as follows: MAW (water), MADW (water), MAAP (air filter), MASO (soil) and MAVE (vegetation).

[c] MAPEP results are presented as the known values and expected laboratory precision (1 sigma, 1 determination) and control limits as defined by the MAPEP. A known value of "zero" indicates an analysis was included in the testing series as a "false positive". MAPEP does not provide an acceptance range.

[d] The false positive is believed to be due to interference from U-234 which has a gamma energy very close to Co-57 and for which the MAPEP study report confirmed to be present in the sample.

[e] False positive detections could have occurred due to a combination of an inadequate background subtraction for this sample geometry compounded by a very long analysis time.

[f] Failure is likely due to inadequate quench correction. Using the "Channels Ratio" quench correction method the lab result would have been 24.9 Bq/L which would have passed the study acceptance criteria.

[g] This sample aliquot weight was very low. It is believed that due to the low weight that the container may not have rested squarely on the detector resulting in lower results for all analytes. Reanalysis of this sample resulted in passing results for all analytes.

TABLE A-7. Interlaboratory Comparison Crosscheck Program, Environmental Resource Associates (ERA)[a].

MRAD-40 Study (Air Filter)

Lab Code	Date	Analysis	Concentration [a] Laboratory Result	ERA Value [b]	Acceptance Limits [c]	Acceptance
O5K0086-02	9/22/2025	Cs-134	302 ± 4	341	221 - 418	Pass
O5K0086-02	9/22/2025	Cs-137	437 ± 4	379	311 - 497	Pass
O5K0086-02	9/22/2025	Co-60	345 ± 4	322	274 - 409	Pass
O5K0086-02	9/22/2025	Mn-54	< 1.80	< 35.0	0.00 - 35.0	Pass
O5K0086-02	9/22/2025	Zn-65	240 ± 7	193	158.0 - 295	Pass
O5K0086-02	9/22/2025	U-234	66.2 ± 2.1	63.4	47.0 - 74.3	Pass
O5K0086-02	9/22/2025	U-238	66.8 ± 2.2	62.9	47.5 - 75.0	Pass
O5K0086-02	9/22/2025	Uranium-Total	136 ± 3.1	129	94.2 - 153	Pass
O5K0086-01	9/22/2025	Gross Alpha	22.4 ± 1.4	22.0	11.5 - 36.2	Pass
O5K0086-01	9/22/2025	Gross Beta	25.1 ± 1.7	40.5	24.6 - 61.2	Pass

[a] Results obtained by Microbac Laboratories - Northbrook as a participant in the crosscheck program for proficiency testing administered by Environmental Resource Associates, serving as a replacement for studies conducted previously by the Environmental Measurements Laboratory Quality Assessment Program (EML).

[b] The ERA Assigned values for the air filter standards are equal to 100% of the parameter present in the standard as determined by the gravimetric and/or volumetric measurements made during standard preparation as applicable.

[c] The acceptance limits are established per ERA's SOP for the Generation of Acceptance Limits™ as applicable.

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Appendix B

Data Reporting Conventions

APPENDIX B. DATA REPORTING CONVENTIONS

Data Reporting Conventions

1.0. All activities, except gross alpha and gross beta, are decay corrected to collection time or the end of the collection period.

2.0. Single Measurements

Each single measurement is reported as follows: $x \pm s$

where: x = value of the measurement;

$s = 2\sigma$ counting uncertainty (corresponding to the 95% confidence level).

In cases where the activity is less than the lower limit of detection L, it is reported as: $< L$, where L = the lower limit of detection based on 4.66σ uncertainty for a background sample.

3.0. Duplicate analyses

If duplicate analyses are reported, the convention is as follows. :

3.1 Individual results: For two analysis results; $x_1 \pm s_1$ and $x_2 \pm s_2$

Reported result: $x \pm s$; where $x = (1/2)(x_1 + x_2)$ and $s = (1/2)\sqrt{s_1^2 + s_2^2}$

3.2. Individual results: $< L_1$, $< L_2$ Reported result: $< L$, where L = lower of L_1 and L_2

3.3. Individual results: $x \pm s$, $< L$ Reported result: $x \pm s$ if $x \geq L$; $< L$ otherwise.

4.0. Computation of Averages and Standard Deviations

4.1 Averages and standard deviations listed in the tables are computed from all of the individual measurements over the period averaged; for example, an annual standard deviation would not be the average of quarterly standard deviations. The average $\bar{x}$ and standard deviation "s" of a set of n numbers $x_1, x_2 \ldots x_n$ are defined as follows:

$$\bar{x} = \frac{1}{n} \sum x \qquad s = \sqrt{\frac{\sum (x - \bar{x})^2}{n-1}}$$

4.2 Values below the highest lower limit of detection are not included in the average.

4.3 If all values in the averaging group are less than the highest LLD, the highest LLD is reported.

4.4 If all but one of the values are less than the highest LLD, the single value x and associated two sigma error is reported.

4.5 In rounding off, the following rules are followed:

4.5.1. If the number following those to be retained is less than 5, the number is dropped, and the retained numbers are kept unchanged. As an example, 11.443 is rounded off to 11.44.

4.5.2. If the number following those to be retained is equal to or greater than 5, the number is dropped and the last retained number is raised by 1. As an example, 11.445 is rounded off to 11.45.

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Appendix C

Maximum permissible concentrations of radioactivity
in air and water above natural background in unrestricted areas

APPENDIX C

Table C-1. Maximum permissible concentrations of radioactivity in air and water above natural background in unrestricted areas[a].

	Air (pCi/m^3)		Water (pCi/L)
Gross alpha	1×10^{-3}	Strontium-89	8,000
Gross beta	1	Strontium-90	500
Iodine-131[b]	2.8×10^{-1}	Cesium-137	1,000
		Barium-140	8,000
		Iodine-131	1,000
		Potassium-40 [c]	4,000
		Gross alpha	2
		Gross beta	10
		Tritium	1×10^6

[a] Taken from Table 2 of Appendix B to Code of Federal Regulations Title 10, Part 20, and appropriate footnotes. Concentrations may be averaged over a period not greater than one year.

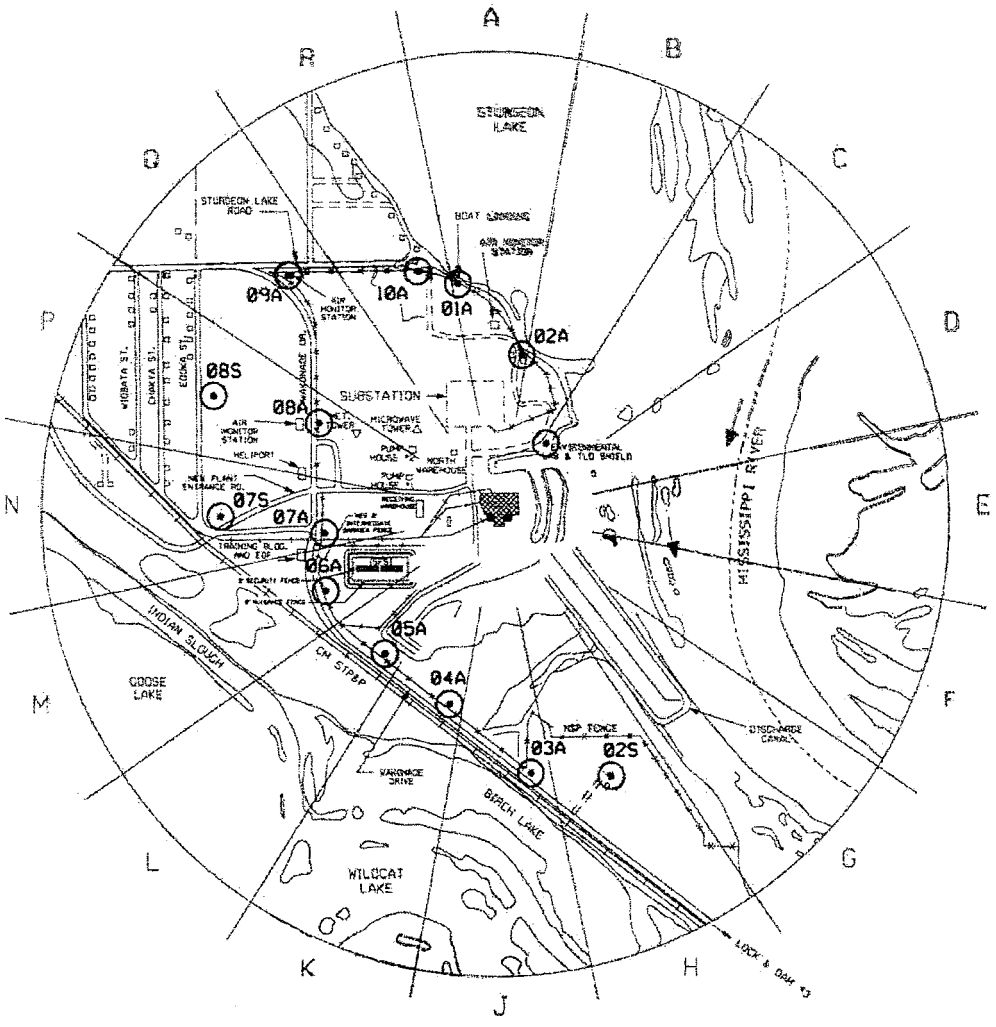
[b] Value adjusted by a factor of 700 to reduce the dose resulting from the air-grass-cow-milk-child pathway.

[c] A natural radionuclide.

APPENDIX D

Sample Collection and Analysis Program

TLD LOCATIONS
ONE MILE RADIUS

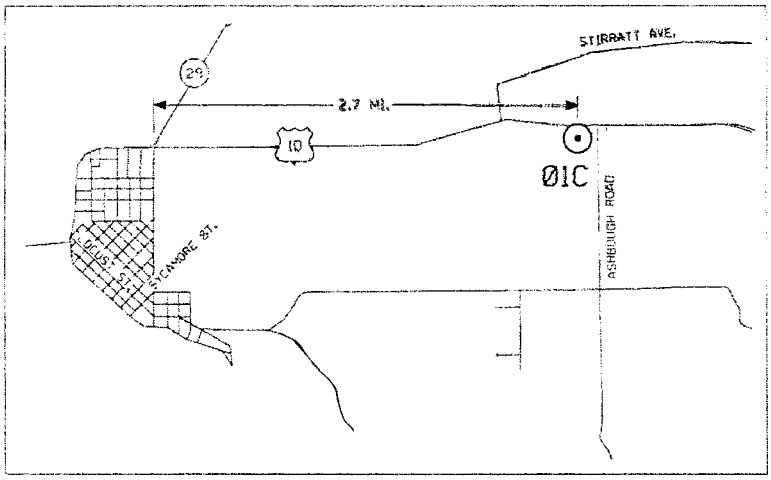


PLANT AREA ENLARGED PLAN [1.00 MILE RADIUS]
[NO SCALE]

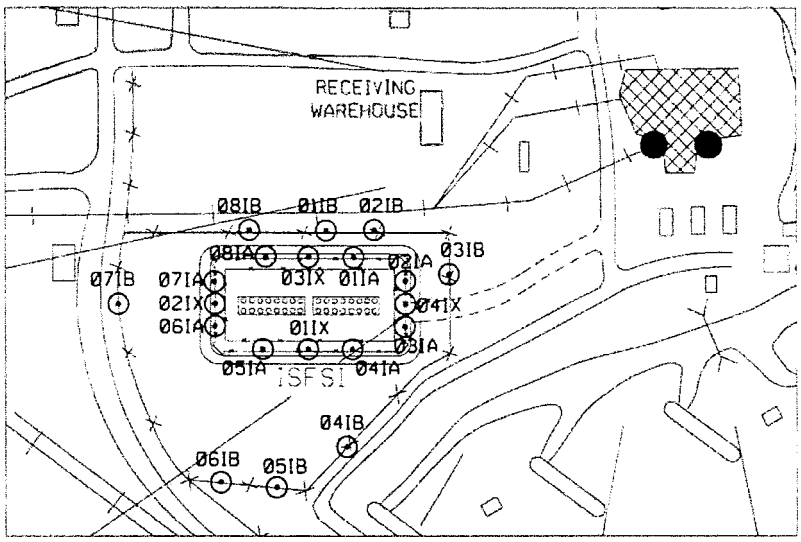
MONITORING LEGEND:

⊙ PRAIRIE ISLAND TLD POINTS

TLD LOCATIONS



CONTROL POINTS
PRESCOTT, WISCONSIN

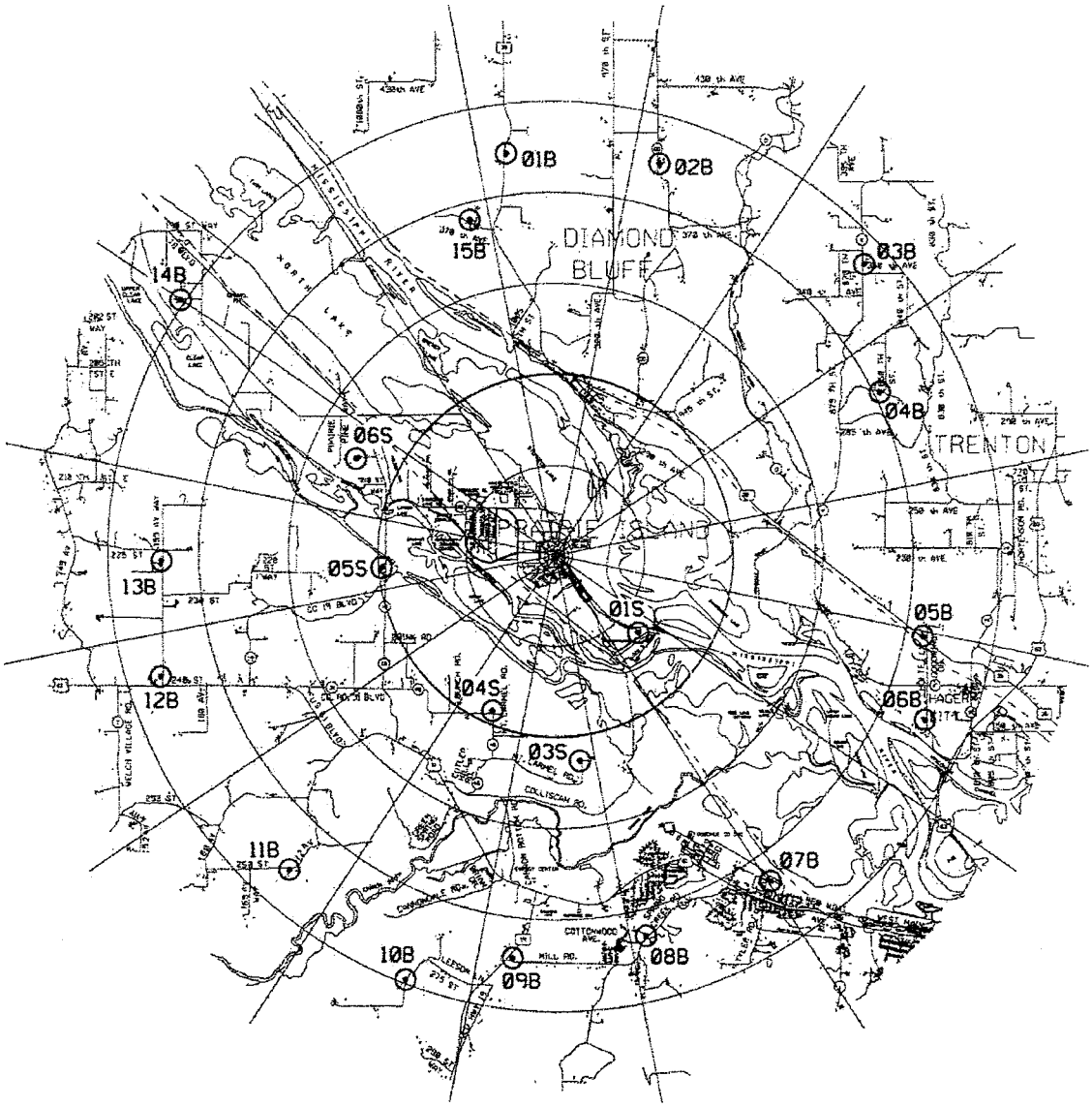


ISFSI AREA TLD LOCATIONS

MONITORING LEGEND:

⊙ PRAIRIE ISLAND TLD POINTS

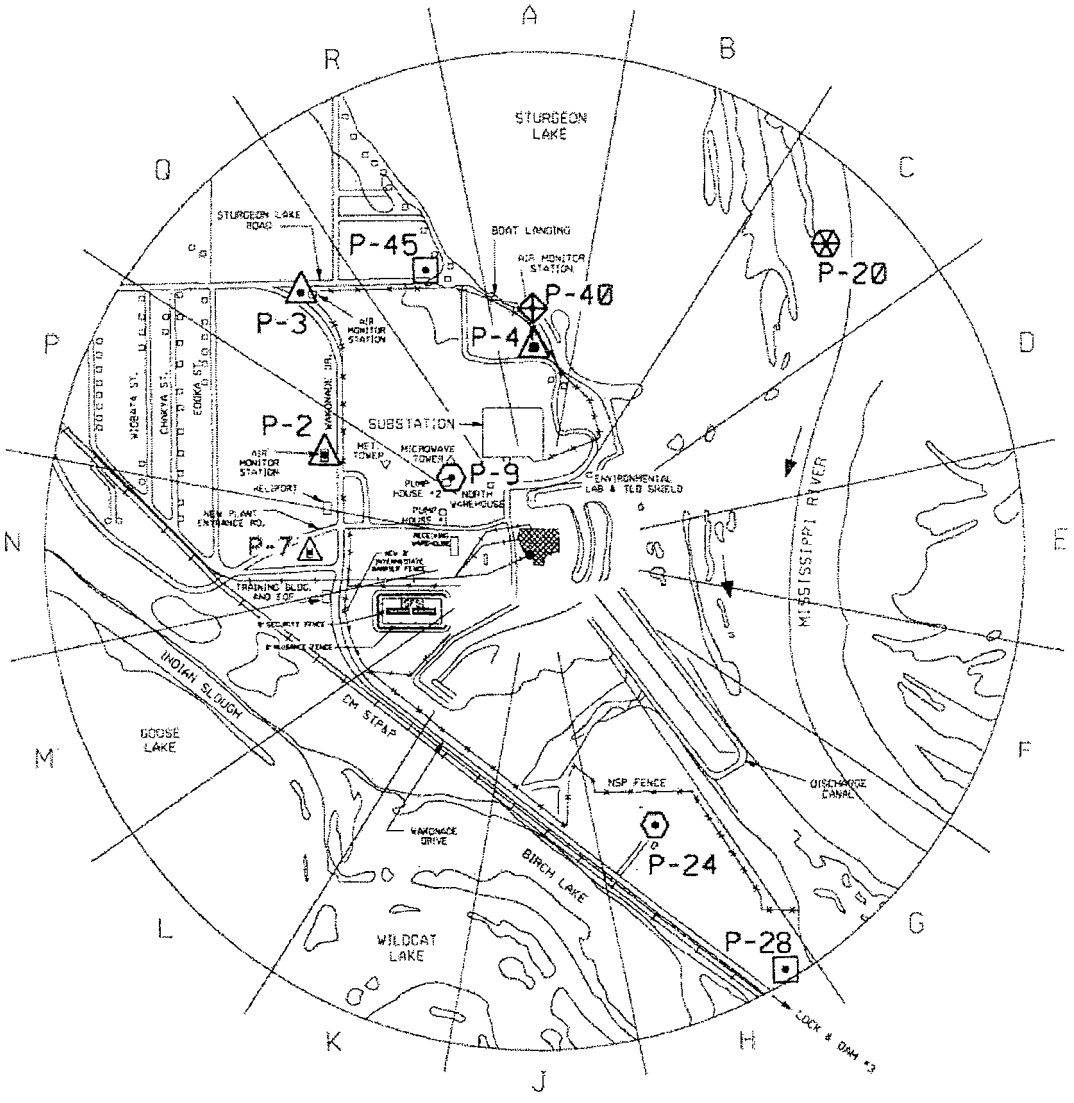
TLD LOCATIONS
FIVE MILE RADIUS



MONITORING LEGEND:

● PRAIRIE ISLAND TLD POINTS

ENVIRONMENTAL SAMPLING POINTS
ONE MILE RADIUS



PLANT AREA ENLARGED PLAN [1.00 MILE RADIUS]

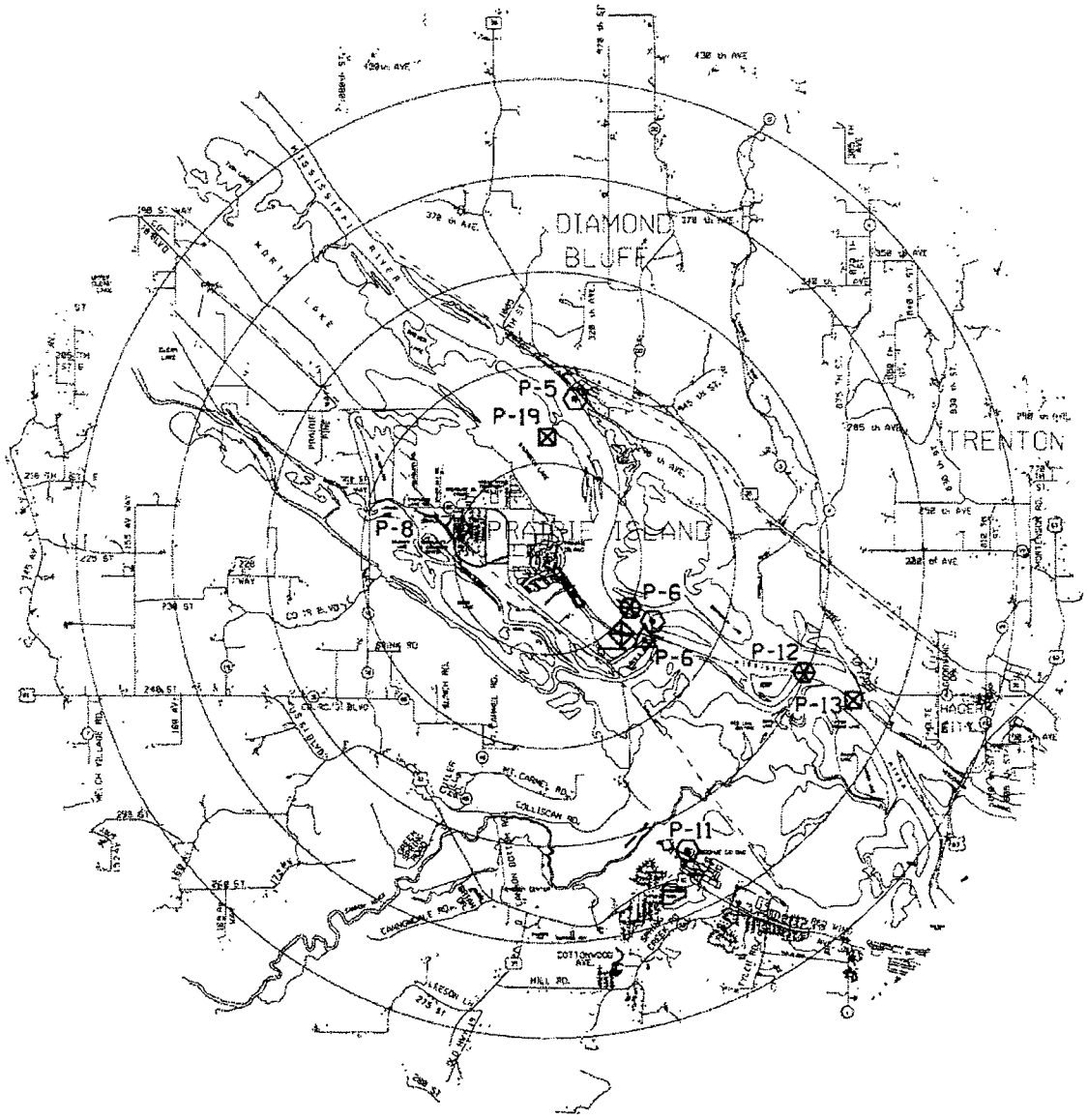
[NO SCALE]

MONITORING LEGEND

- AIR SAMPLING POINT ID NUMBERS P-1, P-2, P-3, P-4, P-6, P-7
- WATER SAMPLING POINT ID NUMBERS P-5, P-6, P-8, P-9, P-11, P-24, P-43
- VEGETATION / VEGETABLES ID NUMBERS P-28, P-38, P-45
- FISH SAMPLING POINT ID NUMBERS P-13, P-19
- INVERTEBRATES POINT ID NUMBERS P-6, P-40
- SEDIMENT SAMPLING POINT ID NUMBERS P-5, P-12, P-28

ENVIRONMENTAL SAMPLING POINTS

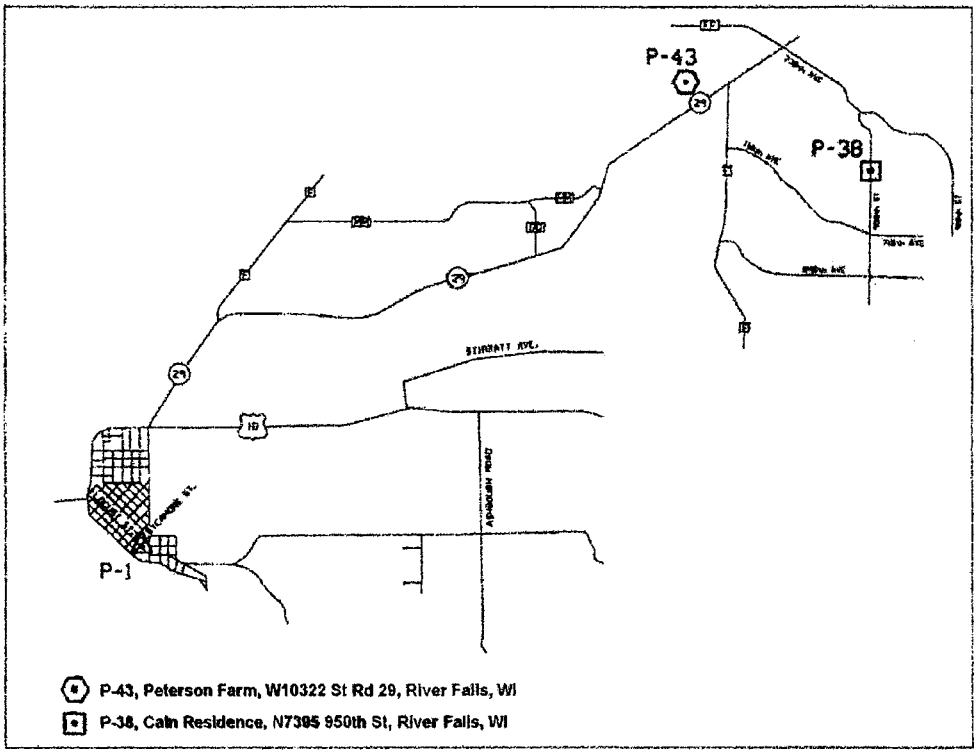
FIVE MILE RADIUS



MONITORING LEGEND

- AIR SAMPLING POINT ID NUMBERS P-1, P-2, P-3, P-4, P-6, P-7
- WATER SAMPLING POINT ID NUMBERS P-5, P-6, P-8, P-9, P-11, P-24, P-43
- VEGETATION / VEGETABLES ID NUMBERS P-28, P-38, P-45
- FISH SAMPLING POINT ID NUMBERS P-13, P-19
- INVERTEBRATES POINT ID NUMBERS P-6, P-40
- SEDIMENT SAMPLING POINT ID NUMBERS P-6, P-12, P-20

ENVIRONMENTAL SAMPLING POINTS



CONTROL POINTS
PRESCOTT, WISCONSIN

MONITORING LEGEND

- AIR SAMPLING POINT ID NUMBERS
  P-1, P-2, P-3, P-4, P-6, P-7
- WATER SAMPLING POINT ID NUMBERS
  P-5, P-6, P-8, P-9, P-11, P-43
- VEGETATION / VEGETABLES ID NUMBERS
  P-28, P-38, P-45

APPENDIX E

Special Well and

Surface Water Samples

1.0 INTRODUCTION

This appendix to the Radiological Environmental Monitoring Program Annual Report to the United States Nuclear Regulatory Commission summarizes and interprets results of the special well and surface water samples taken at the Prairie Island Nuclear Generating Plant, Red Wing, Minnesota, during the period January - December, 2025. This supplemental special sampling program was established in December of 1989 when higher than expected levels of tritium were detected in a nearby residence well sample.

Tabulations of the special sampling program individual analyses made during the year are included in this appendix. A summary table of tritium analyses is also included in this appendix.

2.0 SUMMARY

This special sampling program was established following the detection of tritium in a residence well water sample south of the PINGP during 1989. This program is described and the results for 2025 are summarized and discussed.

Program findings for 2025 detected low levels of tritium in nearby residence wells, ground water, surface samples, and storage tanks at or near the expected natural background levels with the exception of ground water sample wells MW-8 and P-10, precipitation samples from the Barrel Yard roof drain, and the septic system. The 2025 sample results (except for MW-8 and P-10, Barrel Yard, and the septic system) ranged from <19 pCi/L to 243 pCi/L. Sample well MW-8 ranged from 190 pCi/L to 1111 pCi/L. Sample well P-10 ranged from 33 to 494 pCi/L. Barrel Yard roof drain samples ranged from 532 pCi/L to 3214 pCi/L. The septic system ranged from 109 to 6270 pCi/L. All tritium results are far below the Environmental Protection Agency's drinking water standard of 20,000 pCi/L and present no harm to any members of the public.

None of the water samples monitored for gamma-emitting isotopes showed any activity greater than the LLD (lower limit of detection).

3.0 Special Tritium Sampling Program

3.1 Program Design and Data Interpretation

The purpose of this sampling program is to assess the impact of any tritium leaching into the environment (ground water system) from the PINGP. For this purpose, special water samples are collected and analyzed for tritium content.

3.2 Program Description

The sampling and analysis schedule for the special water sampling program is summarized in Table E-4.1 and briefly reviewed below. Table E-4.2 defines the additional sample locations and codes for the special water sampling program.

Special well, tank, and surface water samples were collected quarterly (spring, summer, fall) at seven locations, quarterly at one location, monthly at six locations, semi-annually at five locations, and annually at thirty-nine locations. The Peterson (P-43) and Hanson (SW-1) farm wells are used as control locations for these special samples.

To detect low levels of tritium at or below natural background levels, analyses of the samples have been contracted to a laboratory (University of Waterloo Laboratories) capable of detecting tritium concentrations down to 19 pCi/L. Waterloo Laboratories report tritium analyses results in Tritium Units (1 TU = 3.2 pCi/L). The tritium results in this report are indicated in pCi/L.

3.3 Program Execution

The special water sampling was executed as described in the preceding section.

3.4 Program Modifications

Changes to the program in 2025 include:

- Samples taken from monitoring wells P-10 and MW-8 were sent to Microbac for hard-to-detect nuclide analysis in accordance with American Nuclear Insurers recommendation.
- No samples were taken from the D5 or D6 Fuel Oil Storage Tank vaults because these areas were dry in 2025.
- Beginning in April 2025, septic samples were processed for tritium on site instead of at Waterloo Laboratories. This process continues to meet the NRC required LLD of 3000 pCi/L.

3.5 Results and Discussion

Results show tritium in well water and ground water samples at or near expected natural background levels except MW-8 and P-10 ground water sample wells. Table E-4.4 provides the complete data table of results for each period and sampling location.

The tritium level annual averages have shown a downward trend since the special sampling began in 1989.

Except for MW-8, P-10, Barrel Yard roof drain, and the septic system, the 2025 sample results are within the range of expected background tritium levels in shallow ground water and surface water due to tritium concentrations measured in precipitation. Sampling points in North America have shown tritium concentrations in precipitation ranging from 5 pCi/L to 157 pCi/L (Environmental Isotope Data No. 10; World Survey of Isotope Concentration in Precipitation (1988-1991)).

The higher-level results at the Suter residence and Birch Lake in 1989 were possibly due to seepage from the PINGP discharge canal water into the ground water. This is thought to occur due to the elevation difference between the Vermillion River and the discharge canal. The Suter residence is located between the discharge canal and Birch Lake, which connects to the Vermillion River. The PINGP discharge canal piping was lengthened during 1991, so that liquid discharges from the plant are released near the end of the discharge canal, diffused, and discharged to the Mississippi River. In 1992, the underground liquid discharge pipe from the plant to the discharge canal piping was replaced with a double walled leak detectable piping system. This year's sample results continue to indicate that these modifications have eliminated the suspected radioactive effluent flow into the local ground water.

The elevated tritium levels in sample wells MW-8 and P-10 in 2025 may be due to prior leakage from the PINGP liquid radwaste discharge pipe, discharge of turbine building sump water into the landlocked area, or discharge of heating steam condensate from the main warehouse in 1978/1979. The liquid radwaste discharge pipe was replaced in 1992 and the discharge to the landlocked area has been terminated, the last discharge took place on 11/14/09. The main warehouse heating system was repaired in 1979. The heating steam system has not been used in the outer plant buildings since the 2011 – 2012 heating season.

During 2025, there were no leaks or spills that warranted reporting to the Nuclear Regulatory Commission, State or Local officials.

The elevated tritium levels found in the septic system in October and November returned to a less than detectable level in December.

None of the water samples monitored for gamma-emitting isotopes showed any activity greater than the LLD.

Table E-4.1. Sample collection and analysis program for special well, storage tank, and surface water samples, Prairie Island Nuclear Generating Plant, 2025.

Medium	No.	Location codes and type [a]	Collection type and frequency [b]	Analysis type [c]
Well water Annual	25	P-8 post-treat, P-8 pre-treat, REMP P-6, REMP P-11, PIIC-22, PIIC-26, PIIC-28, PIIC-29, P-7, P-9, P-11, PZ-1, PZ-2, PZ-4, PZ-5, PZ-7, MW-6, P-26, P-30, SW-3, SW-4, SW-5, SW-7, SW-8, SW-9	G/A	H-3
Well water quarterly	1	P-24D	G/Q	H-3
Well water quarterly'	7	P-2, P-3, P-5, P-6, PZ-8, MW-4, MW-5	G/Q'	H-3
Well water monthly	5	P-43(C), SW-1(C), MW-7, MW-8, P-10	G/M	H-3
Surface water	9	S-1, S-2, S-3, S-4, S-5, S-6, S-7, S-10, P-31	G/A[d]	H-3
Storage Tank	5	11 CST, 21 CST, 22 CST, U1/2 Demin Hdr	G/S	H-3
Storage Tank	1	Septic System	G/M	H-3
Snow	5	S-6, S-7, S-8, S-9, P-43(C)	G/A	H-3

[a] Location codes are defined in table E-4.2. Control Stations are indicated by (C). All other stations are indicators.

[b] Collection type is codes as follows: G/ = grab. Collection frequency is coded as follows: M = monthly; Q = quarterly; Q' = quarterly (spring, summer, and fall); S= semiannually; A = annually.

[c] Analysis type is coded as follows: H-3 = tritium.

[d] Location S-6, S-7, and S-10 are sampled semi-annually, P-31 is sampled three times a year

Table E-4.2. Sampling locations for special well, storage tank, and surface water samples, Prairie Island Nuclear Generating Plant, 2025.

Code	Collection site	Type of sample [a]	Distance and direction from reactor
P-8	PI Community well post treat	DW	1.0 mi. @ 321°/WNW
P-8	PI Community well pre treat	DW	1.0 mi. @ 321°/WNW
REMP P-6	Lock & Dam #3 well	DW	1.6 mi. @ 129°/SE
REMP P-11	Red Wing Service Center	DW	3.3 mi @ 158°/SSE
PIIC-22	1773 Buffalo Slough Rd	DW	1 mi. @ 315°/NW
PIIC-26	1771 Buffalo Slough Rd	DW	1 mi. @ 315°/NW
PIIC-29	Buffalo Project	DW	4.3 mi @ 302°/WNW
P-24D	Suter residence	DW	0.6 mi. @ 158°/SSE
P-43	Peterson Farm (Control)	DW	13.9 mi. @ 355°/N
SW-1	Hanson Farm (Control)	DW	2.2 mi. @ 315°/NW
P-2	Sample well	WW	See map
P-3	Sample well	WW	See map
P-5	Sample well	WW	See map
P-6	Sample well	WW	See map
P-7	Sample well	WW	See map
P-10	Sample well	WW	See map
P-11	Sample well	WW	See map
PZ-1	Sample well	WW	See map
PZ-2	Sample well	WW	See map
PZ-4	Sample well	WW	See map
PZ-5	Sample well	WW	See map
PZ-7	Sample well	WW	See map
PZ-8	Sample well	WW	See map
MW-4	Sample well	WW	See map
MW-5	Sample well	WW	See map
MW-6	Sample well	WW	See map
MW-7	Sample well	WW	See map
MW-8	Sample well	WW	See map
P-26	PITC well	DW	0.4 mi. @ 258°/WSW
P-30	Environ lab well	DW	0.2 mi. @ 32°/NNE

Table E-4.2. Sampling locations for special well, storage tank, and surface water samples, Prairie Island Nuclear Generating Plant, 2025 (continued).

Code	Collection site	Type of sample [a]	Distance and direction from reactor
SW-3	Cooling Tower pump	WW	See map
SW-4	New Admin Bldg	DW	0.05 mi. @ 315˚/NW
SW-5	Plant Screenhouse well	WW	0.05 mi. @ 0˚/N
SW-6	SGR Building	DW	0.2 mi @ 310˚/NW
SW-7	Distribution Center	DW	0.35 mi @ 271˚/W
SW-8	Site Admin Building well	WW	0.2 mi @ 310˚/NW
SW-9	FLEX Building	WW	0.2 mi @ 238°/WSW
P-9	Plant well # 2	DW	0.3 mi. @ 306°/NW
S-1	Upstream Miss. River	SW	See map
S-2	Recirc/Intake canal	SW	See map
S-3	Cooling water canal	SW	See map
S-4	Discharge Canal (end)	SW	See map
S-5	Mid Discharge Canal	SW	See map
S-6	Roof Stormwater Runoff (also snow)	SW	0.05 mi. @ 0˚/N
S-7	Parking Lot Stormwater (also snow)	SW	0.3 mi @ 306˚/NW
S-8	P-10 area snow	SW	See map
S-9	MW-7/8 area snow	SW	See map
S-10	Barrel yard SW Storm Water Drain	SW	Outside Barrel yard
P-31	Birch Lake Seepage	SW	0.69 mi. @ 172°/S
11 CST	Storage Tank	ST	Turbine Building
21 CST	Storage Tank	ST	Turbine Building
22 CST	Storage Tank	ST	Turbine Building
Unit 1/2 demin hdr	Storage Tank	ST	Turbine Building
Septic System	Storage Tank	ST	Outside #1 Warehouse
D5 Vault	Concrete Vault	ST	Outside Turbine Bldg
D6 Vault	Concrete Vault	ST	Outside Turbine Bldg

[a] Sample codes: DW = Drinking Water: WW = Well Water; SW = Surface Water: ST = Storage Tank.

Table E-4.3 Radiation Environmental Monitoring Program Summary: Special well, storage tank, and surface water samples.

Name of Facility	Prairie Island Nuclear Power Station	Docket No.	50-282, 50-306
Location of Facility	Goodhue, Minnesota (County, State)	Reporting Period	January – December, 2025

Sample Type (Units)	Type and Number of Analyses [a]	LLD [b]	Indicator Locations Mean (F) [c] Range [c]	Location with Highest Annual Mean Location [d]	Location with Highest Annual Mean Mean (F) [c] Range [c]	Control Locations Mean (F) [c] Range [c]	Number Non-Routine Results [e]
Offsite Well Water (pCi/L)	H-3 13	19	39 (6/13) (20-79)	Suter Residence	79 (1/5) (79)	(See Control Below)	0
Onsite Well Water (pCi/L)	H-3 74	19	234 (58/74) (20-1111)	MW-8	730 (12/12) (190-1111)	(See Control Below)	14
Onsite Surface Water (pCi/L)	H-3 18	19	326 (13/18) (20-3214)	S-10	1873 (2/2) (532-3214)	(See Offsite Snow Control Below)	2
Onsite Storage Tank (pCi/L)	H-3 23	19	1153 (15/27) (30-6270)	Plant Septic	2659 (5/12) (109-6270)	(See Control Below)	3
Control (offsite well water)	H-3 24	19	none	SW-1	40 (2/12) (34-45)	30 (8/24) (20-45)	0
Control (offsite snow)	H-3 1	19	none	P-43	25 (1/1) (25)	25 (1/1) (25)	0

[a] H-3 = tritium
[b] LLD = Nominal lower limit of detection based on 4.66 sigma error for background sample. Value shown is highest for the period. LLD for Plant Septic was 19 for Jan – Mar, 8769 for Apr – May, and 2680 for Jun – Dec.
[c] Mean and range are based on detectable measurements only. Fraction of detectable measurements at specified locations is indicated in parentheses (F).
[d] Locations are specified by code.
[e] Non-routine results are those which exceed ten times the control station mean value.

Table E-4.4 Radiological Environmental Monitoring Program , Complete Data Table, 2025.

	SAMPLE DATES	JAN 2025	FEB 2025	MAR 2025	APR 2025	MAY 2025	JUN 2025	JUL 2025	AUG 2025	SEP 2025	OCT 2025	NOV 2025	DEC 2025
CODE	SAMPLE LOCATIONS	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L
	OFFSITE WELLS												
P-8 Post-treat	PI Comm. Well							<19					
P-8 Pre-treat	PI Comm. Well							<19					
REMP P-6	Lock & Dam #3 well							<19					
REMP P-11	Red Wing Service Center							36					
PIIC-22	1773 Buffalo Slough Rd							20					
PIIC-26	1771 Buffalo Slough Rd							32					
PIIC-28	1960 Larson Lane							32					
PIIC-29	Buffalo Project							34					
P-24D	Suter residence		<19			<19		<19	79			<19	
P-43	Peterson Farm (Control	20	25/25* *snow	<19	<19	38	<19	20	28	26	<19	<19	<19
SW-1	Hanson Farm (Control)	<19	45	<19	<19	<19	<19	34	<19	<19	<19	<19	<19

Table E-4.4 Radiological Environmental Monitoring Program , Complete Data Table, 2025 (continued).

	SAMPLE DATES	JAN 2025	FEB 2025	MAR 2025	APR 2025	MAY 2025	JUN 2025	JUL 2025	AUG 2025	SEP 2025	OCT 2025	NOV 2025	DEC 2025
CODE	SAMPLE LOCATIONS	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L
	ONSITE WELLS												
P-2	Sample well				<19			73				118	
P-3	Sample well				<19			26				37	
P-5	Sample well				43			89				88	
P-6	Sample well				29			<19				29	
P-7	Sample well							94					
P-10	Sample well	33	228	182	36	198	238	297	406	283	494	167	368
P-11	Sample well							61					
PZ-1	Sample well							<19					
PZ-2	Sample well							23					
PZ-4	Sample well							<19					
PZ-5	Sample well							35					
PZ-7	Sample well							<19					
PZ-8	Sample well				<19			35				<19	
MW-4	Sample well				<19			<19				21	
MW-5	Sample well				<19			29				23	
MW-6	Sample well							20					
MW-7	Sample well	118	115	80	26	<19	53	66	33	85	75	59	116
MW-8	Sample well	517	468	642	190	361	801	773	1111	1081	974	905	915
P-26	PITC well							29					
P-30	Env. lab well							<19					
SW-3	CT pump							43					
P-9	Plant well # 2							<19					
SW-4	New Admin							<19					
SW-5	Plnt Scrnhs							<19					
SW-7	Dist Center							36					

Table E-4.4 Radiological Environmental Monitoring Program , Complete Data Table, 2025 (continued).

	SAMPLE DATES	JAN 2025	FEB 2025	MAR 2025	APR 2025	MAY 2025	JUN 2025	JUL 2025	AUG 2025	SEP 2025	OCT 2025	NOV 2025	DEC 2025
CODE	SAMPLE LOCATIONS	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L
	ONSITE WELLS												
SW-8	Site Admin Bldg							<19					
SW-9	FLEX Bldg							24					

Table E-4.4 Radiological Environmental Monitoring Program , Complete Data Table, 2025 (continued).

	SAMPLE DATES	JAN 2025	FEB 2025	MAR 2025	APR 2025	MAY 2025	JUN 2025	JUL 2025	AUG 2025	SEP 2025	OCT 2025	NOV 2025	DEC 2025
CODE	SAMPLE LOCATIONS	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L
	ONSITE SURFACE WATER												
S-1	Mississippi River upstream							25					
S-2	Recirculation/Intake canal							50					
S-3	Cooling water canal							30					
S-4	Discharge Canal (end)							<19					
S-5	Discharge Canal (midway)							<19					
S-6	Stormwater runoff	51*			26						<19		
S-7	Parking Lot runoff	20*			26						22		
S-8	P-10 area snow	89*											
S-9	MW-7/8 area snow	131*											
S-10	Barrel Yard SW Storm Water Drain				3214						532		
P-31	Birch Lake Seepage			<19				24				<19	

* snow samples

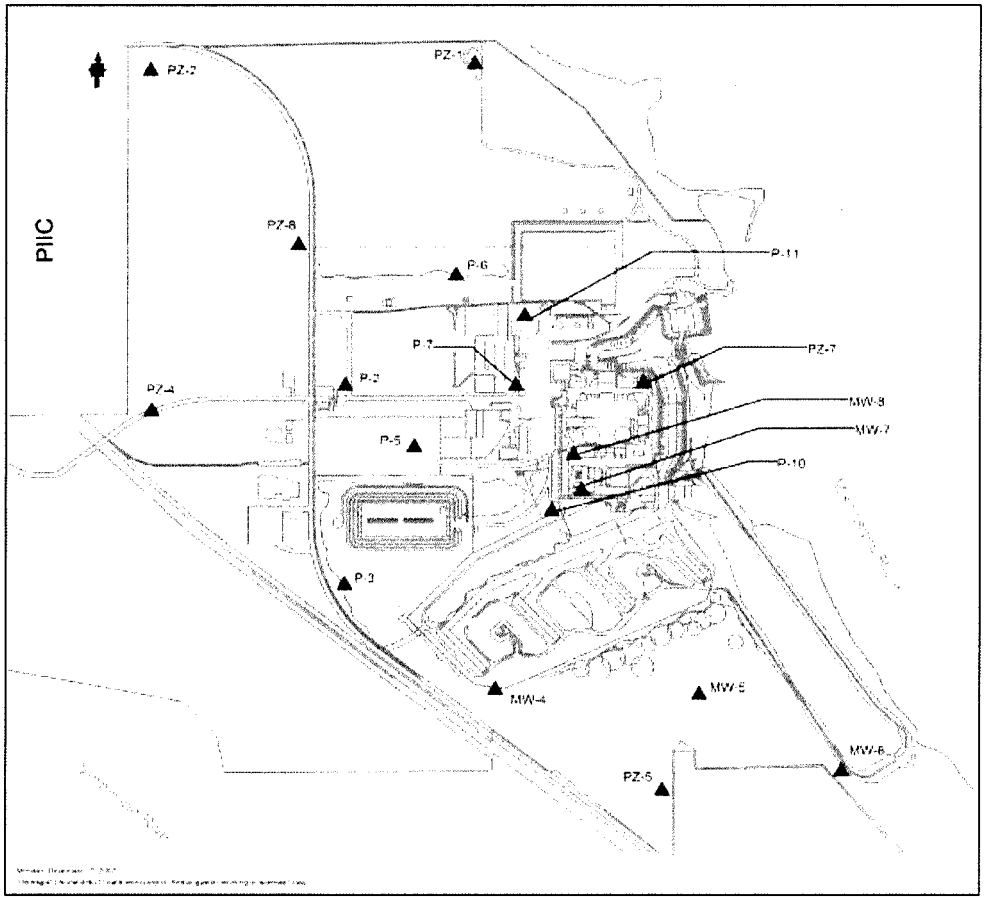
Table E-4.4 Radiological Environmental Monitoring Program , Complete Data Table, 2025 (continued).

	SAMPLE DATES	JAN 2025	FEB 2025	MAR 2025	APR 2025	MAY 2025	JUN 2025	JUL 2025	AUG 2025	SEP 2025	OCT 2025	NOV 2025	DEC 2025
CODE	SAMPLE LOCATIONS	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L
	ONSITE STORAGE TANKS												
11 CST	Storage tank				<19			36			30		
21 CST	Storage tank				60			34			<19		
22 CST	Storage tank				<19			<19			<19		
U1/U2 Demin Header	Storage tank				<19/<19			99/243			<19/44		
Septic System	Storage tank	570	109	136	<872	<879	<2180	<2210	<2210	<2490	6210	6270	<2680

Table E-4.5. Supplemental Data Table, results of the analyses for nickel-63 and strontium-90 on two samples.

Location	P-10 Well	MW-8 Well
Collection Date	04-23-25	04-25-25
Lab Code	PXW-4083	PXW-4084
Isotope	Concentration (µCi/mL)	
Ni-63	< 1.6 E-07	< 1.6 E-07
Sr-90	< 6.0 E-10	< 5.1 E-10

Less than (<), value is based on a 4.66 sigma counting error for the background sample. Analytical results relate only to the samples submitted to the Laboratory for testing, in the condition received by the laboratory.



Groundwater Monitoring Well Locations

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