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Acting Director Regulatory Affairs

April 28, 2025
000924

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

Subject: Docket Numbers 50-482 and 72-79: Wolf Creek Generating Station 2024
Annual Radioactive Effluent Release Report – Report 48

Commissioners and Staff:

The purpose of this letter is to transmit the enclosed Wolf Creek Generating Station (WCGS) Annual Radioactive Effluent Release Report. The report covers the period from January 1, 2024, through December 31, 2024. It is being submitted pursuant to Section 5.6.3 of the WCGS Technical Specifications.

In accordance with Section 5.5.1 of the WCGS Technical Specifications, a review was made of the following Wolf Creek Nuclear Operating Corporation (WCNOC) procedures AP 07B-003, "Offsite Dose Calculation Manual," Revision 10; AP 07B-004, "Offsite Dose Calculation Manual (Radiological Environmental Monitoring Program)," Revision 23; and AP 31A-100, "Solid Radwaste Process Control Program," Revision 9. Since no changes were made to these procedures during the last reporting period, the three procedures are not included with this submittal.

This letter contains no commitments. If you have any questions concerning this matter, please contact me at (620) 364-8831 x8261, or Dustin Hamman at (620) 364-4204.

Sincerely,

A handwritten signature in black ink, appearing to read "Josh K. T.", written over a light blue horizontal line.

Joshua K. Turner

Enclosure: Wolf Creek Generating Station 2024 Annual Radioactive Effluent Release
Report – Report 48

cc: A. N. Agrawal, w/e
S. S. Lee (NRC), w/e
J. D. Monninger (NRC), w/e
Senior Resident Inspector (NRC), w/e
WC Licensing Correspondence, w/e - RA 25-000924

Enclosure to 000924

**Wolf Creek Generating Station
2024 Annual Radioactive Effluent Release Report – Report 48
(77 pages)**



WOLF CREEK NUCLEAR OPERATING CORPORATION

2024 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

Wolf Creek Generating Station

Docket Numbers 50-482 and 72-79

Renewed Facility Operating License NPF-42

Report Number 48

WOLF CREEK NUCLEAR OPERATING CORPORATION

2024 ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

Introduction

This Annual Radioactive Effluent Release Report (ARERR) covers the operation of Wolf Creek Generating Station (WCGS) from January 1, 2024, through December 31, 2024. The ARERR includes a summary of the quantities of radioactive liquid and gaseous effluents and solid waste released from the unit in accordance with Technical Specification 5.6.3. The content of this ARERR is presented in the general format of Revision 1 of Regulatory Guide 1.21.

I. SUPPLEMENTAL INFORMATION

A. Regulatory Limits

The Offsite Dose Calculation Manual (ODCM) describes the methodology and parameters used in the calculation of offsite doses due to radioactive liquid and gaseous effluents. The following are limits required by the ODCM:

1. GASEOUS EFFLUENTS

The dose rate due to radioactive materials released in gaseous effluents from the site to areas at and beyond the site boundary shall be limited to the following:

For noble gases: a dose rate less than or equal to 500 mrem/yr to the whole body and a dose rate less than or equal to 3000 mrem/yr to the skin, and

For Iodine-131, Iodine-133, tritium and all radionuclides in particulate form with half-lives greater than 8 days: Less than or equal to 1500 mrem/yr to any organ.

The air dose due to noble gases released in gaseous effluents to areas at and beyond the site boundary shall be limited to the following:

During any calendar quarter: Less than or equal to 5 mrad for gamma radiation and less than or equal to 10 mrad for beta radiation, and

During any calendar year: Less than or equal to 10 mrad for gamma radiation and less than or equal to 20 mrad for beta radiation.

The dose to a member of the public from Iodine-131, Iodine-133, tritium and all radionuclides in particulate form with half-lives greater than 8 days in gaseous effluents released to areas at and beyond the site boundary shall be limited to the following:

During any calendar quarter: Less than or equal to 7.5 mrem to any organ, and

During any calendar year: Less than or equal to 15 mrem to any organ.

2. LIQUID EFFLUENTS

The concentration of radioactive material released in liquid effluents to unrestricted areas shall be limited to 10 times the limit specified in 10 CFR 20, Appendix B, Table 2, Column 2, for radionuclides other than dissolved or entrained noble gases. For dissolved or entrained noble gases, the concentration shall be limited to $2.00\text{E-}04$ $\mu\text{Ci/ml}$ total activity.

The dose or dose commitment to a member of the public from radioactive materials in liquid effluents released to unrestricted areas shall be limited:

During any calendar quarter to less than or equal to 1.5 mrems to the whole body and to less than or equal to 5 mrems to any organ, and

During any calendar year to less than or equal to 3 mrems to the whole body and to less than or equal to 10 mrems to any organ.

B. Effluent Concentration Limit (ECL)

The concentration of radioactive material released in liquid effluents to unrestricted areas shall be limited to 10 times the limit specified in 10 CFR 20, Appendix B, Table 2, Column 2, for radionuclides other than dissolved or entrained noble gases. For dissolved or entrained noble gases, the concentration shall be limited to 2.00E-04 $\mu\text{Ci/ml}$ total activity. The percent of ECL values are found in Appendix A, Table 4A.

C. Average Energy

Average energy of fission and activation gaseous effluents is not applicable. See ODCM section 3.1 for the methodology used in determining the release rate limits from noble gas releases.

D. Measurements and Approximations of Total Radioactivity

Measurements of total radioactivity were performed in accordance with the sampling and analysis requirements of Tables 2-1 and 3-1 of the ODCM (Enclosure I).

Gamma spectroscopy is used as the primary method in determining radionuclide composition and concentration of liquid and gaseous effluents. Liquid composites are sent off site for analysis of Sr-89, Sr-90, Fe-55, and Ni-63. Gaseous composites are also sent off site for Sr-89 and Sr-90 analysis. Liquid scintillation and scintillation alpha counters are used to measure tritium and gross alpha.

E. Batch Releases

1. LIQUID

Number of batch releases - 52

Total time period for batch release – 9,482 minutes

Maximum time period for a batch release – 1,012 minutes

Average time period for batch releases – 182.3 minutes

Minimum time period for a batch release – 55 minutes

Average stream flow during periods of release of effluent into a flowing stream-
Not applicable

2. GASEOUS

Number of batch releases - 83

Total time period for batch release – 101,039 minutes

Maximum time period for a batch release – 31,199 minutes

Average time period for batch releases – 1217.3 minutes

Minimum time period for a batch release - 16 minutes

F. Continuous Releases

1. GASES

Continuous gaseous release pathways include the Unit Vent and Radwaste Vent.

2. LIQUID

Continuous liquid release pathways include Steam Generator Blowdown, Lime Sludge Pond, Turbine Building Sump and Waste Water Treatment.

G. Abnormal Releases

There were no abnormal releases in 2024.

II. GASEOUS EFFLUENTS

An elevated release pathway does not exist at WCGS. All airborne releases are considered to be ground level releases. Appendix A, Table 1A contains the summation of all gaseous effluent discharges, while Table 1B shows the quarterly sums of curies discharged and is divided according to batch or continuous mode.

III. LIQUID EFFLUENTS

Summary information can be found in Appendix A, Tables 2A and 2B. Table 2A contains the summation of all liquid effluent discharges, while Table 2B reports the quarterly sums of total curies released and is divided according to batch or continuous mode.

IV. SOLID WASTE

Appendix A, Table 3 contains information on shipments of solid waste and irradiated fuel transported from the site during the period.

V. INDEPENDENT SPENT FUEL STORAGE INSTALLATION (ISFSI)

There are no radiological effluents released from the Matrix Horizontal Storage Module (HSM-MX). Direct dose from this installation is reported in the Annual Radiological Environmental Operating Report (AREOR).

The on-site dry cask ISFSI pad was considered within the site boundary until November 4, 2024, when it became part of the Protected Area Boundary (PAB).

Wolf Creek loaded its first ISFSI dry cask on the pad in January of 2022. Wolf Creek did not load any additional canisters in 2024. There are a total of eight canisters on the ISFSI Pad.

VI. RADIOLOGICAL IMPACT ON MAN

No ODCM dose limits were exceeded in 2024.

Dose calculations are performed for the limiting age group i.e., adult age group for the liquid pathway and the child age group for gaseous effluent organ doses. All calculations were performed in accordance with the methodology and parameters in the ODCM. A conservative error of thirty percent has been estimated in the effluent data for liquid and gaseous dose.

A. Dose Due to Liquid Effluents

The dose due to liquid effluents was calculated in accordance with the methodology and parameters in the ODCM and can be found in Appendix A, Tables 4B and 4C. Table 4C is included to show the correlation between curies released and the associated calculated maximum organ dose.

Wolf Creek ODCM methodology is used to calculate the maximum organ dose which assumes that an individual drinks the water and eats the fish from the discharge point. ODCM section 2.2 organ dose limits are used.

B. Dose Due to Gaseous Effluents

The dose due to gaseous effluents can be found in Appendix A, Tables 4D and 4E and is calculated in accordance with the methodology and parameters in the ODCM. Table 4E is included to show the correlation between curies released and the associated calculated maximum organ dose. The gaseous pathway dose determination is met by the ODCM methodology of assigning all gaseous pathways to a hypothetical individual residing at the highest annual X/Q and D/Q location, which assumes that an individual resides at the site boundary. This results in a conservative estimate of dose to a member of the public, rather than determining each pathway dose for each release condition. ODCM section 3.2.2 organ dose limits are used.

C. Dose to a Member of the Public from Activities Inside the Site Boundary

	Total Dose
Personnel making deliveries to the plant	2.91E-01 mrem
Public use of the cooling lake during times when fishing was allowed	3.71E-02 mrem
Workers at the William Allen White Building located outside the protected area boundary	6.27E-03 mrem
Pipe Fab Shop (nearest occupied building) *	1.00E+01 mrem
Dry Cask Storage Fence East *	2.19E+01 mrem
PA ISFSI South Fence*	2.31E+01 mrem

The plant delivery calculations were based on deliveries being made 3 hours per week for 50 weeks per year. The dose to anglers on the lake was based upon 2,796 hours (12 hours a day for 233 days, based on the number of days that the lake was open to anglers). The William Allen White Building occupancy was based on normal working hours of 2,000 per year. The Submersion, Inhalation and Ground Plane pathway doses were added to derive the total dose. All calculations were performed in accordance with the methodology and parameters in the ODCM.

*The Radiation Protection (RP) department monitors various locations and buildings in the vicinity of the ISFSI area to verify exposure is within regulatory limits in addition to the monitoring done by REMP. The calculated doses here are based on a conservative 2,000 working hours per year and do not subtract off background readings.

VII. METEOROLOGICAL DATA

Appendix B documents WCGS meteorological data for wind speed, wind direction and atmospheric stability.

VIII. ADDITIONAL INFORMATION

A. Unplanned Releases

CONDITION REPORTS (CR) 10036897, 10037910 AND 10039211 UNPLANNED RELEASE OF GAS DECAY TANK #8

On 9/26/2024 at 0800, the tank pressure for Gas Decay Tank (GDT) #8 was recorded by Chemistry as 24.5 psig. On 9/27/2024 at 0800, the reading was 21.5 psig. There were no other increases/decreases noted in the other GDTs, so the drop in pressure was considered an unplanned release. The trend for GHRE23, Waste Gas Ventilation Exhaust monitor, did not indicate any abnormalities. This indicated that the release of GDT #8 did not escape into the room but was released out the Radwaste Vent Exhaust, including the Radwaste Vent noble gas monitor, GHRE10B. No radiation monitor alarms were received and particulate and iodine counts the following week showed zero activity. A sample of GDT #8 had been taken 9/7/2024 for curie content due to leakby into the tank. This activity was used to generate a permit to account for the release. All results verified that the dose and total curies released did not exceed any Offsite Dose Calculation Manual (ODCM) limits. These values were included in the monthly, quarterly and yearly totals for gas releases.

Since 9/27/2024, GDT #8 experienced a slow decrease in tank pressure (down to 12.6 psig) over the next four months. These drops in pressure were also treated as unplanned releases and permits were generated to account for dose and curies released. Again, no ODCM limits were exceeded, and these values were included in the monthly, quarterly and yearly totals for gas releases.

A degraded rupture disk on the 'B' Recombiner was the cause of the system leak. There was a delay in work to make the necessary repairs due to GDT #8 inadvertently receiving an addition on more than one occasion in the fall of 2024. USAR Chapter 11.3 requires a 90-day holdup period after an addition to a GDT prior to releasing it. AP 07B-001, Radioactive Releases, was revised in 2025 to allow sampling and release of gas under 90 days. A USAR change was submitted based on the procedure change (see CR 10037118). GDT #8 was sampled for a planned release 3/10/2025 to make required repairs.

CR 10033342 BMRE52 RELEASE PERMIT NOT COMPLETED PRIOR TO RELEASE

While taking Radwaste Tank Level Logs on May 6, 2024, at 1315, the Chemistry technician found the Totalizer reading to be 883 gallons. Steam Generator blowdown was secured at the time, so a value of zero was expected. After doing some trending on NPIS, BMF0054 (SGBD DISCH TO LIQUID RADWST) was showing flow of approximately 135 KLBH on 5/5/2024 from 2105 to 2107. BMD0056 (SG B/D DISCH TO LIQ RW) showed to be in the open position from 2104 to 2107.

The required verifications and approvals were not obtained on release permit U1LC2024-032 (Steam Generator Blowdown to the Lake) prior to initiating the release. The

verifications include entering the setpoints, verifying the setpoints and authorization of the release by the Shift Manager. The permit also directs Operations to contact Chemistry at the initiation of a release to pull the required Offsite Dose Calculation Manual (ODCM) grab sample.

Chemistry later pulled a sample from the surge tank to use as a composite since the required ODCM composite at initiation was not pulled. This was a representative sample as the volume released was so small and came from the same tank. A trend shows BMD0016A (SG B/D DISCH TO B/D TK) to be closed during this timeframe. The sample was counted and found to not have any gamma activity.

The Rad Monitor, BMN0526 (STM GEN BLOWDOWN EFFLUENT), was functional during the release with setpoints entered from a previous permit. The current setpoints were entered and verified after the release. The setpoints were confirmed to be the same (they hadn't changed since the last release on a different permit). Trends showed no elevated readings.

B. ODCM

The ODCM is in the form of two separate procedures. They are AP 07B-003 (Offsite Dose Calculation Manual) and AP 07B-004 (Offsite Dose Calculation Manual - Radiological Environmental Monitoring Program). Both procedures are attached as enclosures.

C. Radwaste Treatment System Changes

There were no major changes made to the Liquid, Solid or Gaseous Radwaste Systems in 2024 that alter the capacity or handling of radioactive wastes or differ in the methods of treatment.

D. Annual Land Use Census Changes

Per the Annual Land Use Census, no changes were identified for the nearest occupied residence in each sector. Six changes were noted for the nearest garden producing broadleaf vegetation. There was one change regarding milk sample locations. One location was identified that milked animals for human consumption.

E. Liquid Holdup or Gas Storage Tanks

No limits were exceeded in 2024 for Technical Requirement 3.10.1 (Liquid Holdup Tanks) or Technical Surveillance Requirement 3.10.3.1 (Gas Storage Tanks).

F. Functionality of Effluent Monitoring Instrumentation

Effluent monitoring instrumentation returned to functional status within specified time.

G. Missed Samples

There were no missed samples in 2024.

H. NEI Groundwater Protection Industry Initiative

See Appendix C

I. Other

CR 00036059 CARBON-14

Regulation 10CFR50.36a requires nuclear power plants to report quantities of principal radionuclides in the annual radioactive effluent release report. In the early 1980s, the NRC decided that C-14 radionuclide would not be required to be reported because it would not make a significant contribution to dose. Since this time, technology has advanced both for effluent isotopic reduction and isotope detection and estimation. It is more likely the C-14 meets the definition of a principal radionuclide in accordance with the newly published Regulatory Guide 1.21 Revision 2 (June 2009).

The NRC allows the reporting of this isotope based on estimation methods. EPRI TR 1021106 developed an estimation method based on peer-reviewed research that incorporates parameters of Wolf Creek's reactor design to estimate the gross amount of C-14 produced annually. This value is fed into additional calculations, based on Regulatory Guide 1.109, Calculation of Annual Doses to Man From Routine Releases of Reactor Effluents For the Purpose of Evaluating Compliance with 10 CFR Part 50, Appendix I, to provide an estimation of annual dose. Based on the 2010 theoretical calculations and assuming the maximum percentage of inorganic C-14 compounds (30%), Wolf Creek has estimated the annual release of C-14 to be 10.7 curies. This will give maximum dose values of 4.60 mrem/yr child bone dose and 0.921 mrem/yr child total body dose. This is well below the 10CFR50, Appendix I, ALARA design objective of 15 mrem/yr. Additionally, this value is on par with the dose expected from naturally occurring radiocarbon.

CR 10032735 CONTAINMENT PURGE PERMIT REVIEW

It is the established practice for Containment purges released in a series to have the Authorization Section filled out for each permit when in series. The issue was discussed with CRS and Shift Manager. This CR was written to capture the departure from the normal practice. During the final review of permit U1GB2024-047, Containment Mini Purge, the Authorization Section of the permit was found to be incomplete. The purge was started on 3/27/24 using permit U1GB2024-046. STN SP-001 "Process Radiation Monitoring System Source Check" was completed SAT prior to this release in addition to Setpoint verifications and Shift Manager approval. The purge was needed beyond its expiration of 3/28/24 at 1428 so Containment was resampled, and a new permit was generated (U1GB2024-047). Permit U1GB2024-047 was a continuation of permit U1GB2024-046. The purge never stopped between permits and the 3/27/24 start dates and times were transferred from permit U1GB2024-046 to permit U1GB2024-047. No check sources were missed and the correct setpoints were entered. All Offsite Dose Calculation Manual (ODCM) requirements were met.

CR 10029788 LATE APPROVAL OF UNIT VENT RELEASE PERMIT

Unit Vent release permit U1GC2024-012 was issued for continuing the normal release and flow rate data recorded without the authorization section completed. The new permit

was placed in the release book before it was authorized. It is a continuous release and there were no changes made to the setpoints from the old permit to the new one. Gas, particulate and iodine counts used to generate the permit showed no activity. Technicians were coached to hand new permits directly to a Reactor Operator or the Control Room Supervisor.

CR 10034977 CONTAINMENT MINI PURGE NOT SECURED PRIOR TO PERMIT EXPIRATION

On 7/12/2024, Containment Mini Purge was operated after the purge permit had expired. The permit expired on 7/12/2024 at 13:00 and the purge was secured on 7/12/2024 at 13:16. The Containment Purge Exhaust Gas and Containment Atmosphere Gas channels were reviewed for the time that the purge was performed. These trends showed that the activity level remained well below the low setpoints of the permit. Additionally, the Shift Chemist was directed to sample containment gas. The sample pulled for preparation of the permit was $7.84\text{E-}07$ uCi/cc. The sample pulled after the permit expired was $6.22\text{E-}07$ uCi/cc. All time was accounted for and the post release calculations verified that the dose and total curies released did not exceed any Offsite Dose Calculation Manual (ODCM) limits.

Appendix A
(Effluent Tables)

TABLE 1A:
GASEOUS EFFLUENTS-SUMMATION OF ALL RELEASES

Unit	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Est. Total Error, %
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Fission & Activation Gases

<i>Total Release</i>	Ci	1.94E-01	3.99E-02	5.57E-02	6.91E-02	3.00E+01
<i>Average Release Rate for period</i>	μCi/sec	2.47E-02	5.07E-03	7.01E-03	8.70E-03	
<i>Percent of ODCM limit</i>	%	2.38E-03	5.17E-04	6.83E-04	8.07E-04	

Iodines

<i>Total Iodine-131</i>	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.00E+01
<i>Average Release Rate for period</i>	μCi/sec	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
<i>Percent of ODCM limit</i>	%	0.00E+00	0.00E+00	0.00E+00	0.00E+00	

Particulates

<i>Particulates with half-lives >8 days</i>	Ci	0.00E+00	5.94E-07	0.00E+00	0.00E+00	3.00E+01
<i>Average Release Rate for period</i>	μCi/sec	0.00E+00	7.55E-08	0.00E+00	0.00E+00	
<i>Percent of ODCM limit</i>	%	0.00E+00	4.22E-06	0.00E+00	0.00E+00	
<i>Gross alpha radioactivity</i>	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.00E+01

Tritium

<i>Total release</i>	Ci	3.61E+00	1.99E+01	1.10E+01	3.69E+00	3.00E+01
<i>Average Release Rate for period</i>	μCi/sec	4.60E-01	2.54E+00	1.39E+00	4.64E-01	
<i>Percent of ODCM limit</i>	%	3.41E-02	1.88E-01	1.04E-01	3.48E-02	

**TABLE 1B:
GASEOUS EFFLUENTS-GROUND LEVEL RELEASES-BATCH MODE**

Nuclides Released	Unit	Quarter 1	Quarter 2	Quarter 3	Quarter 4
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Fission gases

AR-41	Ci	1.84E-01	3.99E-02	5.25E-02	6.20E-02
KR-85	Ci	1.01E-02	0.00E+00	1.57E-03	3.80E-03
KR-87	Ci	<3.25E-02	<4.06E-01	<2.06E-03	<2.09E-03
KR-88	Ci	<3.78E-02	<4.72E-01	<2.39E-03	<2.43E-03
XE-133	Ci	3.27E-04	<3.40E-01	1.45E-03	3.04E-03
XE-133m	Ci	<6.87E-02	<8.58E-01	3.45E-05	7.79E-05
XE-135	Ci	<8.16E-03	<1.02E-01	8.84E-05	1.84E-04
XE-138	Ci	<8.41E-01	<1.05E+01	<5.32E-02	<5.40E-02
Total for period*	Ci	1.94E-01	3.99E-02	5.57E-02	6.91E-02

Iodines

I-131	Ci	<1.23E-06	<1.54E-05	<7.81E-08	<7.92E-08
I-133	Ci	<1.23E-04	<1.54E-03	<7.81E-06	<7.92E-06
Total for period*	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Particulates

CE-141	Ci	<1.23E-05	<1.54E-04	<7.81E-07	<7.92E-07
CE-144	Ci	<1.23E-05	<1.54E-04	<7.81E-07	<7.92E-07
CS-134	Ci	<1.23E-05	<1.54E-04	<7.81E-07	<7.92E-07
CS-137	Ci	<1.23E-05	<1.54E-04	<7.81E-07	<7.92E-07
CO-58	Ci	<1.23E-05	<1.54E-04	<7.81E-07	<7.92E-07
CO-60	Ci	<1.23E-05	<1.54E-04	<7.81E-07	<7.92E-07
FE-59	Ci	<1.23E-05	<1.54E-04	<7.81E-07	<7.92E-07
MN-54	Ci	<1.23E-05	<1.54E-04	<7.81E-07	<7.92E-07
MO-99	Ci	<1.23E-05	<1.54E-04	<7.81E-07	<7.92E-07
SR-89	Ci	<1.23E-05	<1.54E-04	<7.81E-07	<7.92E-07
SR-90	Ci	<1.23E-05	<1.54E-04	<7.81E-07	<7.92E-07
ZN-65	Ci	<1.23E-05	<1.54E-04	<7.81E-07	<7.92E-07
Total for period*	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Tritium	Ci	1.24E-01	2.17E+00	1.22E-01	6.82E-02
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Gross Alpha	Ci	<1.23E-05	<1.54E-04	<7.81E-07	<7.92E-07
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*Less than values are not included in the summation for the total release values.

**TABLE 1B:
GASEOUS EFFLUENTS-GROUND LEVEL RELEASES -CONTINUOUS MODE**

Nuclides Released	Unit	Quarter 1	Quarter 2	Quarter 3	Quarter 4
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Fission gases

KR-87	Ci	<6.72E+00	<7.03E+00	<6.78E+00	<6.74E+00
KR-88	Ci	<7.82E+00	<8.18E+00	<7.90E+00	<7.84E+00
XE-133	Ci	<5.62E+00	<5.89E+00	<5.68E+00	<5.64E+00
XE-133m	Ci	<1.42E+01	<1.49E+01	<1.43E+01	<1.43E+01
XE-135	Ci	<1.69E+00	<1.77E+00	<1.70E+00	<1.69E+00
XE-138	Ci	<1.74E+02	<1.82E+02	<1.75E+02	<1.74E+02
Total for period	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Iodines

I-131	Ci	<2.55E-04	<2.67E-04	<2.58E-04	<2.56E-04
I-133	Ci	<2.55E-02	<2.67E-02	<2.58E-02	<2.56E-02
Total for period	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Particulates

CE-141	Ci	<2.55E-03	<2.67E-03	<2.58E-03	<2.56E-03
CE-144	Ci	<2.55E-03	<2.67E-03	<2.58E-03	<2.56E-03
CS-134	Ci	<2.55E-03	<2.67E-03	<2.58E-03	<2.56E-03
CS-137	Ci	<2.55E-03	<2.67E-03	<2.58E-03	<2.56E-03
CO-58	Ci	<2.55E-03	5.94E-07	<2.58E-03	<2.56E-03
CO-60	Ci	<2.55E-03	<2.67E-03	<2.58E-03	<2.56E-03
FE-59	Ci	<2.55E-03	<2.67E-03	<2.58E-03	<2.56E-03
MN-54	Ci	<2.55E-03	<2.67E-03	<2.58E-03	<2.56E-03
MO-99	Ci	<2.55E-03	<2.67E-03	<2.58E-03	<2.56E-03
SR-89	Ci	<2.55E-03	<2.67E-03	<2.58E-03	<2.56E-03
SR-90	Ci	<2.55E-03	<2.67E-03	<2.58E-03	<2.56E-03
ZN-65	Ci	<2.55E-03	<2.67E-03	<2.58E-03	<2.56E-03
Total for period	Ci	0.00E+00	5.94E-07	0.00E+00	0.00E+00

Tritium	Ci	3.49E+00	1.78E+01	1.09E+01	3.62E+00
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Gross Alpha	Ci	<2.55E-03	<2.67E-03	<2.58E-03	<2.56E-03
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*Less than values are not included in the summation for the total release values.

**TABLE 2A:
LIQUID EFFLUENTS – SUMMATION OF ALL RELEASES**

Unit	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Est. Total Error, %
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FISSION AND ACTIVATION PRODUCTS

Total Release (not including tritium, gases, alpha)	Ci	5.22E-03	1.34E-02	3.88E-04	1.23E-03	3.00E+01
Average Diluted Concentration during period	μCi/ml	2.30E-11	8.06E-11	1.39E-12	4.52E-12	
Percent of Applicable Limit	%	1.04E-01	2.68E-01	7.75E-03	2.47E-02	

TRITIUM

Total Release	Ci	4.21E+02	9.15E+01	1.91E+02	1.11E+02	3.00E+01
Average Diluted Concentration during period	μCi/ml	1.86E-06	5.49E-07	6.83E-07	4.07E-07	
Percent of Applicable Limit	%	1.86E-01	5.49E-02	6.83E-02	4.07E-02	

DISSOLVED AND ENTRAINED GASES

Total Release	Ci	5.51E-03	6.44E-04	1.13E-03	1.92E-05	3.00E+01
Average Diluted Concentration during period	μCi/ml	2.43E-11	3.86E-12	4.06E-12	7.02E-14	
Percent of Applicable Limit	%	1.22E-05	1.93E-06	2.03E-06	3.51E-08	

GROSS ALPHA RADIOACTIVITY

Total Release	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.00E+01
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Volume of waste released (prior to dilution)	L	1.04E+08	7.56E+07	9.97E+07	7.95E+07	3.00E+01
Volume of dilution water used during period	L	2.26E+11	1.67E+11	2.80E+11	2.73E+11	3.00E+01

TABLE 2B: LIQUID EFFLUENTS – BATCH MODE

Nuclides Released	Unit	Quarter 1	Quarter 2	Quarter 3	Quarter 4
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Fission & Activation Products

AG-110M	Ci	3.19E-06	1.58E-06	0.00E+00	0.00E+00
CE-141	Ci	<4.66E-04	<4.39E-04	<2.39E-04	<1.19E-04
CE-144	Ci	<4.66E-04	<4.39E-04	<2.39E-04	<1.19E-04
CO-57	Ci	6.76E-06	2.79E-05	0.00E+00	7.33E-06
CO-58	Ci	1.09E-03	7.86E-03	2.89E-04	5.97E-04
CO-60	Ci	1.81E-04	2.89E-04	9.90E-05	5.16E-05
CR-51	Ci	0.00E+00	4.25E-04	0.00E+00	0.00E+00
CS-134	Ci	<4.66E-04	2.87E-06	<2.39E-04	<1.19E-04
CS-137	Ci	<4.66E-04	9.28E-05	<2.39E-04	<1.19E-04
FE-55	Ci	5.59E-04	5.17E-04	<4.77E-04	<2.37E-04
FE-59	Ci	<4.66E-04	3.95E-05	<2.39E-04	<1.19E-04
I-131	Ci	<9.32E-04	<8.77E-04	<4.77E-04	<2.37E-04
I-134	Ci	7.84E-06	0.00E+00	0.00E+00	0.00E+00
MN-54	Ci	6.87E-06	2.73E-06	<2.39E-04	<1.19E-04
MO-99	Ci	<4.66E-04	<4.39E-04	<2.39E-04	<1.19E-04
NB-95	Ci	0.00E+00	2.15E-05	0.00E+00	0.00E+00
NI-63	Ci	3.26E-03	4.03E-03	<4.77E-04	5.68E-04
SB-125	Ci	1.05E-04	1.05E-04	0.00E+00	9.78E-06
SR-89	Ci	<4.66E-05	<4.39E-05	<2.39E-05	<1.19E-05
SR-90	Ci	<4.66E-05	<4.39E-05	<2.39E-05	<1.19E-05
ZN-65	Ci	<4.66E-04	<4.39E-04	<2.39E-04	<1.19E-04
ZR-95	Ci	0.00E+00	3.86E-06	0.00E+00	0.00E+00
Total for period*	Ci	5.22E-03	1.34E-02	3.88E-04	1.23E-03

Dissolved & Entrained Gases

AR-41	Ci	<9.32E-03	4.61E-05	<4.77E-03	<2.37E-03
KR-85M	Ci	3.82E-06	4.04E-06	<4.77E-03	<2.37E-03
XE-133	Ci	4.79E-03	5.63E-04	1.03E-03	1.92E-05
XE-133M	Ci	2.89E-05	<8.77E-03	<4.77E-03	<2.37E-03
XE-135	Ci	6.83E-04	3.04E-05	9.99E-05	<2.37E-03
Total for period*	Ci	5.51E-03	6.44E-04	1.13E-03	1.92E-05

Tritium	Ci	4.19E+02	9.04E+01	1.89E+02	1.10E+02
Gross Alpha	Ci	<9.32E-05	<8.77E-05	<4.77E-05	<2.37E-05

*Less than values are not included in the summation for the total release values.

TABLE 2B: LIQUID EFFLUENTS – CONTINUOUS MODE

Nuclides Released	Unit	Quarter 1	Quarter 2	Quarter 3	Quarter 4
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Fission & Activation Products

CE-141	Ci	<5.15E-02	<3.74E-02	<4.97E-02	<3.97E-02
CE-144	Ci	<5.15E-02	<3.74E-02	<4.97E-02	<3.97E-02
CS-134	Ci	<5.15E-02	<3.74E-02	<4.97E-02	<3.97E-02
CS-137	Ci	<5.15E-02	<3.74E-02	<4.97E-02	<3.97E-02
CO-58	Ci	<5.15E-02	<3.74E-02	<4.97E-02	<3.97E-02
CO-60	Ci	<5.15E-02	<3.74E-02	<4.97E-02	<3.97E-02
FE-55	Ci	<1.03E-01	<7.47E-02	<9.93E-02	<7.93E-02
FE-59	Ci	<5.15E-02	<3.74E-02	<4.97E-02	<3.97E-02
I-131	Ci	<1.03E-01	<7.47E-02	<9.93E-02	<7.93E-02
MN-54	Ci	<5.15E-02	<3.74E-02	<4.97E-02	<3.97E-02
MO-99	Ci	<5.15E-02	<3.74E-02	<4.97E-02	<3.97E-02
NI-63	Ci	<1.03E-01	<7.47E-02	<9.93E-02	<7.93E-02
SR-89	Ci	<5.15E-03	<3.74E-03	<4.97E-03	<3.97E-03
SR-90	Ci	<5.15E-03	<3.74E-03	<4.97E-03	<3.97E-03
ZN-65	Ci	<5.15E-02	<3.74E-02	<4.97E-02	<3.97E-02
Total for period*	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Dissolved & Entrained Gases

Total for period*	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
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Tritium	Ci	1.86E+00	1.11E+00	1.68E+00	1.47E+00
Gross Alpha	Ci	<1.03E-02	<7.47E-03	<9.93E-03	<7.93E-03

*Less than values are not included in the summation for the total release values.

**TABLE 3:
SOLID WASTE AND IRRADIATED FUEL SHIPMENTS**

A. SOLID WASTE SHIPPED OFFSITE FOR BURIAL OR DISPOSAL (NOT IRRADIATED FUEL)

1. Type of Waste	Units	1-Year Period	Est. Total Error (%)
a. Spent resins, filter sludges, evaporator bottoms, etc.	m ³ *	7.65E+00	2.50E+01
	Ci	1.05E-02	
b. Dry compressible waste, contaminated equip., etc.	m ³ *	3.16E+02	2.50E+01
	Ci	1.13E+00	
c. Irradiated components, control rods, etc.	m ³ *	0.00E+00	2.50E+01
	Ci	0.00E+00	
d. Other	m ³ *	1.70E-02	2.50E+01
	Ci	7.30E-07	

*This is the volume sent offsite for volume reduction prior to disposal (waste volume).

2. Estimate of Major Nuclide Composition (by Type of Waste)
[Nuclides listed with % abundance greater than 10%]

- a. Spent resin, filter sludges, evaporator bottoms, etc.

<u>Nuclide</u>	<u>% Abundance</u>	<u>Curies</u>
Ni-63	10.46	1.09E-03
Fe-55	59.58	6.23E-03
Co-60	24.62	2.57E-03

- b. Dry active waste, contaminated equipment, etc.

<u>Nuclide</u>	<u>% Abundance</u>	<u>Curies</u>
Co-60	24.96	2.83E-01
Fe-55	59.71	6.77E-01
Ni-63	10.72	1.22E-01

- c. Irradiated components, control rods, etc. – None

- d. Other

<u>Nuclide</u>	<u>% Abundance</u>	<u>Curies</u>
Fe-55	49.06	3.58E-07
Ni-63	33.85	2.47E-07

3. Solid Waste Disposition

<u>Number of Shipments</u>	<u>Mode of Transportation</u>	<u>Destination</u>
2	Truck, Hittman Transport	Energy Solutions-Oak Ridge, TN
5	Truck, Specialty Transport	Waste Control Specialists-Andrews, TX

4. Class of Solid Waste

a. Class A – Corresponding to Waste Type 1.a, 1.b and 1.d

b. Class B –Corresponding to Waste Type 1.a

c. Class C –Corresponding to Waste Type 1.a

5. Type of Container

a. (General Design), Type A - corresponding to 1.a, 1.b and 1.d

b. (General Design) - corresponding to 1.b and 1.d

6. Solidification Agent

a. Not applicable

B. IRRADIATED FUEL SHIPMENTS (DISPOSITION)

No irradiated fuel shipments occurred during the 2024 period.

TABLE 4A: 2024 EFFLUENT CONCENTRATION LIMITS

<i>Nuclides</i>	<i>Curies</i>	<i>Average Diluted Concentration ($\mu\text{Ci/ml}$)</i>	<i>10 CFR 20 ECL ($\mu\text{Ci/ml}$)</i>	<i>% ECL</i>
<i>Tritium</i>	8.15E+02	8.62E-07	<i>1.00E-03</i>	8.62E-02
<i>Argon-41</i>	4.61E-05	4.88E-14	<i>2.00E-04</i>	2.44E-08
<i>Chromium-51</i>	4.25E-04	4.50E-13	<i>5.00E-04</i>	8.99E-08
<i>Manganese-54</i>	9.60E-06	1.02E-14	<i>3.00E-05</i>	3.38E-08
<i>Iron-55</i>	1.08E-03	1.14E-12	<i>1.00E-04</i>	1.14E-06
<i>Iron-59</i>	3.95E-05	4.18E-14	<i>1.00E-05</i>	4.18E-07
<i>Cobalt-57</i>	4.20E-05	4.44E-14	<i>6.00E-05</i>	7.40E-08
<i>Cobalt-58</i>	9.84E-03	1.04E-11	<i>2.00E-05</i>	5.20E-05
<i>Cobalt-60</i>	6.20E-04	6.56E-13	<i>3.00E-06</i>	2.19E-05
<i>Nickel-63</i>	7.86E-03	8.31E-12	<i>1.00E-04</i>	8.31E-06
<i>Zirconium-95</i>	3.86E-06	4.08E-15	<i>2.00E-05</i>	2.04E-08
<i>Niobium-95</i>	2.15E-05	2.27E-14	<i>3.00E-05</i>	7.58E-08
<i>Silver-110m</i>	4.77E-06	5.05E-15	<i>6.00E-06</i>	8.41E-08
<i>Antimony-125</i>	2.20E-04	2.33E-13	<i>3.00E-05</i>	7.76E-07
<i>Iodine-134</i>	7.84E-06	8.29E-15	<i>4.00E-04</i>	2.07E-09
<i>Xenon-133</i>	6.41E-03	6.78E-12	<i>2.00E-04</i>	3.39E-06
<i>Xenon-135</i>	8.13E-04	8.60E-13	<i>2.00E-04</i>	4.30E-07
<i>Xenon-133m</i>	2.89E-05	3.06E-14	<i>2.00E-04</i>	1.53E-08
<i>Cesium-134</i>	2.87E-06	3.04E-15	<i>9.00E-07</i>	3.37E-07
<i>Cesium-137</i>	9.28E-05	9.82E-14	<i>1.00E-06</i>	9.82E-06
<i>Krypton-85m</i>	7.86E-06	8.31E-15	<i>2.00E-04</i>	4.16E-09

TABLE 4B: 2024 LIQUID CUMULATIVE DOSE SUMMARY

	ODCM Calculated Dose (mrem)	ODCM Limit (mrem)	% of Limit
QUARTER 1 OF 2024			
Total Dose for Bone	1.37E-03	5.00E+00	2.74E-02
Total Dose for Liver	5.98E-02	5.00E+00	1.20E+00
Total Dose for Total Body	5.97E-02	1.50E+00	3.98E+00
Total Dose for Thyroid	5.97E-02	5.00E+00	1.19E+00
Total Dose for Kidney	5.97E-02	5.00E+00	1.19E+00
Total Dose for Lung	5.97E-02	5.00E+00	1.19E+00
Total Dose for GI-LLI	5.98E-02	5.00E+00	1.20E+00
QUARTER 2 OF 2024			
Total Dose for Bone	9.92E-03	5.00E+00	1.98E-01
Total Dose for Liver	7.19E-02	5.00E+00	1.44E+00
Total Dose for Total Body	7.15E-02	1.50E+00	4.77E+00
Total Dose for Thyroid	7.06E-02	5.00E+00	1.41E+00
Total Dose for Kidney	7.08E-02	5.00E+00	1.42E+00
Total Dose for Lung	7.07E-02	5.00E+00	1.41E+00
Total Dose for GI-LLI	7.33E-02	5.00E+00	1.47E+00
QUARTER 3 OF 2024			
Total Dose for Bone	0.00E+00	5.00E+00	0.00E+00
Total Dose for Liver	1.82E-02	5.00E+00	3.64E-01
Total Dose for Total Body	1.82E-02	1.50E+00	1.21E+00
Total Dose for Thyroid	1.82E-02	5.00E+00	3.64E-01
Total Dose for Kidney	1.82E-02	5.00E+00	3.64E-01
Total Dose for Lung	1.82E-02	5.00E+00	3.64E-01
Total Dose for GI-LLI	1.82E-02	5.00E+00	3.64E-01
QUARTER 4 OF 2024			
Total Dose for Bone	1.96E-04	5.00E+00	3.92E-03
Total Dose for Liver	8.23E-03	5.00E+00	1.65E-01
Total Dose for Total Body	8.23E-03	1.50E+00	5.49E-01
Total Dose for Thyroid	8.22E-03	5.00E+00	1.64E-01
Total Dose for Kidney	8.22E-03	5.00E+00	1.64E-01
Total Dose for Lung	8.22E-03	5.00E+00	1.64E-01
Total Dose for GI-LLI	8.24E-03	5.00E+00	1.65E-01
TOTALS FOR 2024			
Total Dose for Bone	1.15E-02	1.00E+01	1.15E-01
Total Dose for Liver	1.58E-01	1.00E+01	1.58E+00
Total Dose for Total Body	1.58E-01	3.00E+00	5.27E+00
Total Dose for Thyroid	1.57E-01	1.00E+01	1.57E+00
Total Dose for Kidney	1.57E-01	1.00E+01	1.57E+00
Total Dose for Lung	1.57E-01	1.00E+01	1.57E+00
Total Dose for GI-LLI	1.59E-01	1.00E+01	1.59E+00

**TABLE 4C:
LIQUID CUMULATIVE DOSE SUMMARY**

Quarter 1 Quarter 2 Quarter 3 Quarter 4 Total

Fission & Activation Products*

Total Release (Ci)	5.22E-03	1.34E-02	3.88E-04	1.23E-03	2.03E-02
Maximum Organ Dose (mrem)	1.37E-03	9.92E-03	1.39E-05	1.96E-04	1.15E-02
Organ Dose Limit (mrem)	5.00E+00	5.00E+00	5.00E+00	5.00E+00	1.00E+01
Percent of Limit	2.75E-02	1.98E-01	2.78E-04	3.93E-03	1.15E-01

Tritium

Total Release (Ci)	4.21E+02	9.15E+01	1.91E+02	1.11E+02	8.15E+02
Maximum Organ Dose (mrem)	5.97E-02	7.06E-02	1.82E-02	8.22E-03	1.57E-01
Organ Dose Limit (mrem)	5.00E+00	5.00E+00	5.00E+00	5.00E+00	1.00E+01
Percent of Limit	1.19E+00	1.41E+00	3.63E-01	1.64E-01	1.57E+00

Dissolved & Entrained Gases

Total Release (Ci)	5.51E-03	6.44E-04	1.13E-03	1.92E-05	7.30E-03
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Gross Alpha Radioactivity

Total Release (Ci)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
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*Does not include H-3, gases or alpha

TABLE 4D: 2024 GASEOUS CUMULATIVE DOSE SUMMARY

	ODCM Calculated Dose (mrem)	ODCM Limit (mrem)	% of Limit
QUARTER 1 OF 2024			
Total Dose for Bone	0.00E+00	7.50E+00	0.00E+00
Total Dose for Liver	2.55E-03	7.50E+00	3.40E-02
Total Dose for Total Body	2.55E-03	7.50E+00	3.40E-02
Total Dose for Thyroid	2.55E-03	7.50E+00	3.40E-02
Total Dose for Kidney	2.55E-03	7.50E+00	3.40E-02
Total Dose for Lung	2.55E-03	7.50E+00	3.40E-02
Total Dose for GI-LLI	2.55E-03	7.50E+00	3.40E-02
QUARTER 2 OF 2024			
Total Dose for Bone	1.28E-07	7.50E+00	1.71E-06
Total Dose for Liver	1.41E-02	7.50E+00	1.88E-01
Total Dose for Total Body	1.41E-02	7.50E+00	1.88E-01
Total Dose for Thyroid	1.41E-02	7.50E+00	1.88E-01
Total Dose for Kidney	1.41E-02	7.50E+00	1.88E-01
Total Dose for Lung	1.41E-02	7.50E+00	1.88E-01
Total Dose for GI-LLI	1.41E-02	7.50E+00	1.88E-01
QUARTER 3 OF 2024			
Total Dose for Bone	0.00E+00	7.50E+00	0.00E+00
Total Dose for Liver	7.81E-03	7.50E+00	1.04E-01
Total Dose for Total Body	7.81E-03	7.50E+00	1.04E-01
Total Dose for Thyroid	7.81E-03	7.50E+00	1.04E-01
Total Dose for Kidney	7.81E-03	7.50E+00	1.04E-01
Total Dose for Lung	7.81E-03	7.50E+00	1.04E-01
Total Dose for GI-LLI	7.81E-03	7.50E+00	1.04E-01
QUARTER 4 OF 2024			
Total Dose for Bone	0.00E+00	7.50E+00	0.00E+00
Total Dose for Liver	2.61E-03	7.50E+00	3.48E-02
Total Dose for Total Body	2.61E-03	7.50E+00	3.48E-02
Total Dose for Thyroid	2.61E-03	7.50E+00	3.48E-02
Total Dose for Kidney	2.61E-03	7.50E+00	3.48E-02
Total Dose for Lung	2.61E-03	7.50E+00	3.48E-02
Total Dose for GI-LLI	2.61E-03	7.50E+00	3.48E-02
TOTALS FOR 2024			
Total Dose for Bone	1.28E-07	1.50E+01	8.53E-07
Total Dose for Liver	2.71E-02	1.50E+01	1.81E-01
Total Dose for Total Body	2.71E-02	1.50E+01	1.81E-01
Total Dose for Thyroid	2.71E-02	1.50E+01	1.81E-01
Total Dose for Kidney	2.71E-02	1.50E+01	1.81E-01
Total Dose for Lung	2.71E-02	1.50E+01	1.81E-01
Total Dose for GI-LLI	2.71E-02	1.50E+01	1.81E-01

TABLE 4E: 2024 GASEOUS CUMULATIVE DOSE SUMMARY

	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Total
<i>Fission & Activation Gases</i>					
Total Release (Ci)	1.94E-01	3.99E-02	5.57E-02	6.91E-02	3.59E-01
Total Gamma Air Dose (mrad)	1.19E-04	2.59E-05	3.41E-05	4.03E-05	2.20E-04
Gamma Air Dose Limit (mrad)	5.00E+00	5.00E+00	5.00E+00	5.00E+00	1.00E+01
Percent of Gamma Air Dose Limit	2.38E-03	5.17E-04	6.83E-04	8.07E-04	2.20E-03
Total Beta Air Dose (mrad)	4.34E-05	9.12E-06	1.24E-05	1.50E-05	7.99E-05
Beta Air Dose Limit (mrad)	1.00E+01	1.00E+01	1.00E+01	1.00E+01	2.00E+01
Percent of Beta Air Dose Limit	4.34E-04	9.12E-05	1.24E-04	1.50E-04	3.99E-04
<i>Particulates</i>					
Total Particulates (Ci)	0.00E+00	5.94E-07	0.00E+00	0.00E+00	5.94E-07
Maximum Organ Dose (mrem)	0.00E+00	3.16E-07	0.00E+00	0.00E+00	3.16E-07
Organ Dose Limit (mrem)	7.50E+00	7.50E+00	7.50E+00	7.50E+00	1.50E+01
Percent of Limit	0.00E+00	4.22E-06	0.00E+00	0.00E+00	2.11E-06
<i>Tritium</i>					
Total Release (Ci)	3.61E+00	1.99E+01	1.10E+01	3.69E+00	3.83E+01
Maximum Organ Dose (mrem)	2.55E-03	1.41E-02	7.81E-03	2.61E-03	2.71E-02
Organ Dose Limit (mrem)	7.50E+00	7.50E+00	7.50E+00	7.50E+00	1.50E+01
Percent of Limit	3.41E-02	1.88E-01	1.04E-01	3.48E-02	1.81E-01
<i>Iodine</i>					
Total Release (Ci)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Maximum Organ Dose (mrem)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Organ Dose Limit (mrem)	7.50E+00	7.50E+00	7.50E+00	7.50E+00	1.50E+01
Percent of Limit	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

CALCULATIONS:

Gases:

1. The percent of ODCM limit for fission and activation gases is calculated using the following methodology: (The larger value calculated between Gamma and Beta air dose is listed as the % of ODCM Limit)

$$\% \text{ of ODCM Limit} = \frac{(\text{Quarterly Total Beta Airdose})(100)}{10 \text{ mrad}}$$

OR

$$\% \text{ of ODCM Limit} = \frac{(\text{Quarterly Total Gamma Airdose})(100)}{5 \text{ mrad}}$$

2. The percent of ODCM limit for iodine is calculated using the following methodology:

$$\% \text{ of ODCM Limit} = \frac{(\text{Total Curies of Iodine} - 131)(100)}{1 \text{ Curie}}$$

3. The percent of ODCM limit for particulates is calculated using the following methodology:

$$\% \text{ of ODCM Limit} = \frac{(\text{Highest Organ Dose due to Particulates})(100)}{7.5 \text{ mrem}}$$

4. The percent of ODCM limit for tritium is calculated using the following methodology (this type of methodology is used since the Wolf Creek ODCM ties release limits to doses rather than curie release rates:

$$\% \text{ of ODCM Limit} = \frac{(\text{Highest Organ Dose due to H} - 3)(100)}{7.5 \text{ mrem}}$$

5. Less than values for Noble Gases are calculated using the Lower Limit of Detection (LLD) values obtained at WCGS multiplied by the volume of air discharged during the respective quarter. For the Halogens and Particulates, the ODCM LLD values are used.

Liquids:

1. The Applicable Limit for fission and activation products at WCGS is 5 curies per year (reference 10CFR50, Appendix I, paragraph A.2). The percent of Applicable Limit is derived by the following:

$$\% \text{ of Applicable Limit} = \frac{(\text{Total Release Ci})(100)}{5 \text{ Ci}}$$

2. The percent of Applicable Limit for tritium is derived by the following formula:

$$\% \text{ of Applicable Limit} = \frac{(\text{Average Diluted Concentration})(100)}{(ECL^*)}$$

*The ECL can be found in 10CFR20, Appendix B, Table 2

3. The percent of Applicable Limit for dissolved and entrained gases is derived by the following formula:

$$\% \text{ of Applicable Limit} = \frac{(\text{Average Diluted Concentration})(100)}{(2.00E - 04^*)}$$

*From ODCM, section 2.1

4. Less than values are calculated using the Lower Limit of Detection (LLD) values listed in Table 2-1 of the ODCM multiplied by the volume of waste discharged during the respective quarter. The less than values are not included in the summation for the total release values.

Appendix B
Meteorological Data

HOURS AT EACH WIND SPEED AND DIRECTION

This section documents WCGS meteorological data for wind speed, wind direction, and atmospheric stability.

The meteorological data supplied in the following tables covers the period from January 1, 2024, through December 31, 2024, and indicates the number of hours at each wind speed and direction for each stability class. All gaseous releases at the WCGS are ground level releases.

Wolf Creek Generating station met Regulatory Guide 1.23 requirements for data recovery for all required instruments. Utilizing NPIS data, 90% or greater data recovery was achieved for all required sensors.

Hours At Each Wind Speed and Direction

Period of Record: JANUARY 1 THROUGH DECEMBER 31, 2024

Stability Class: A

Elevation: 10 Meters

Wind Direction Cardinals	Wind Speed (mph)						Total
	1-3	4-7	8-12	13-18	19-24	> 24	
N	4.75	17.75	45.00	11.25	2.50	0.00	81.25
NNE	8.75	44.25	50.00	7.50	1.00	0.00	111.50
NE	10.75	52.25	21.00	1.50	0.00	0.00	85.50
ENE	8.00	46.75	28.00	2.75	0.00	0.00	85.50
E	10.00	42.50	51.25	7.25	0.00	0.00	111.00
ESE	9.50	39.00	57.50	5.50	0.00	0.00	111.50
SE	16.00	49.00	44.50	15.75	2.75	1.25	129.25
SSE	14.75	70.25	70.00	36.75	5.50	0.50	197.75
S	11.25	61.50	105.50	97.00	19.00	5.75	300.00
SSW	7.25	33.75	54.00	62.50	18.50	0.00	176.00
SW	10.50	31.50	28.25	10.25	2.00	0.00	82.50
WSW	10.00	19.75	20.50	6.50	4.50	0.00	61.25
W	8.75	26.50	23.50	5.50	1.50	2.50	68.25
WNW	5.25	17.00	22.50	10.50	9.50	0.25	65.00
NW	4.00	18.75	59.25	22.75	11.25	1.25	117.25
NNW	5.00	20.00	49.25	31.50	8.00	0.75	114.50
Total	144.50	590.50	730.00	334.75	86.00	12.25	1898.00

Hours of Calm (<1.0 mph): 25.25

Hours At Each Wind Speed and Direction

Period of Record: JANUARY 1 THROUGH DECEMBER 31, 2024

Stability Class: B

Elevation: 10 Meters

Wind Direction Cardinals	Wind Speed (mph)						Total
	1-3	4-7	8-12	13-18	19-24	> 24	
N	0.75	4.50	10.25	9.25	0.25	0.00	25.00
NNE	2.25	10.00	10.50	5.25	0.25	0.00	28.25
NE	2.50	6.75	2.00	0.00	0.00	0.00	11.25
ENE	1.00	6.00	5.25	0.75	0.00	0.00	13.00
E	0.75	5.75	4.50	0.25	0.00	0.00	11.25
ESE	0.25	3.50	2.25	0.75	0.00	0.00	6.75
SE	1.00	5.00	5.00	1.75	0.25	0.00	13.00
SSE	1.50	9.50	15.25	7.50	1.00	0.00	34.75
S	0.75	15.75	17.75	15.75	3.50	2.75	56.25
SSW	0.50	2.50	15.00	12.50	2.25	0.25	33.00
SW	0.50	3.00	3.25	0.50	1.00	0.00	8.25
WSW	0.50	1.50	2.75	2.00	0.50	0.00	7.25
W	0.50	2.50	1.00	0.75	0.25	0.00	5.00
WNW	0.00	2.00	3.75	1.00	2.25	0.00	9.00
NW	0.50	2.00	10.50	7.00	2.25	0.25	22.50
NNW	0.75	3.50	15.75	10.50	1.50	0.00	32.00
Total	14.00	83.75	124.75	75.50	15.25	3.25	316.50

Hours of Calm (<1.0 mph): 4.50

Hours At Each Wind Speed and Direction

Period of Record: JANUARY 1 THROUGH DECEMBER 31, 2024

Stability Class: C

Elevation: 10 Meters

Wind Direction Cardinals	Wind Speed (mph)						Total
	1-3	4-7	8-12	13-18	19-24	> 24	
N	1.75	8.25	13.00	5.25	3.50	0.25	32.00
NNE	2.25	11.25	10.00	4.50	0.25	0.00	28.25
NE	3.25	6.00	2.75	0.25	0.00	0.00	12.25
ENE	2.00	5.50	3.75	0.25	0.00	0.00	11.50
E	1.25	5.25	7.00	0.00	0.00	0.00	13.50
ESE	0.50	3.25	3.25	0.25	0.00	0.00	7.25
SE	1.00	4.00	4.50	1.75	0.00	0.00	11.25
SSE	0.75	16.00	13.25	10.25	3.50	0.25	44.00
S	1.25	14.25	12.50	10.25	6.00	1.50	45.75
SSW	1.00	4.00	10.25	11.75	4.00	2.50	33.50
SW	0.00	2.75	3.75	1.00	0.00	0.00	7.50
WSW	1.00	2.25	1.50	1.00	0.25	0.00	6.00
W	1.50	2.25	2.50	2.50	1.25	0.00	10.00
WNW	0.25	2.50	2.75	4.75	3.25	0.25	13.75
NW	0.50	3.00	8.50	8.25	3.00	0.25	23.50
NNW	0.25	4.00	12.50	9.25	1.25	0.75	28.00
Total	18.50	94.50	111.75	71.25	26.25	5.75	328.00

Hours of Calm (<1.0 mph): 2.25

Hours At Each Wind Speed and Direction

Period of Record: JANUARY 1 THROUGH DECEMBER 31, 2024

Stability Class: D

Elevation: 10 Meters

Wind Direction Cardinals	Wind Speed (mph)						Total
	1-3	4-7	8-12	13-18	19-24	> 24	
N	9.00	46.50	79.00	46.00	10.50	1.25	192.25
NNE	14.75	58.00	61.25	13.75	2.00	0.25	150.00
NE	24.25	50.00	19.00	2.50	0.25	0.00	96.00
ENE	11.50	34.25	25.50	3.50	0.25	0.50	75.50
E	9.00	39.75	33.75	10.25	0.50	0.50	93.75
ESE	7.75	29.50	29.00	12.00	1.75	0.75	80.75
SE	4.50	22.00	35.50	19.75	4.25	0.50	86.50
SSE	5.50	36.50	82.75	80.00	8.75	4.25	217.75
S	7.25	40.50	114.00	94.50	25.00	13.25	294.50
SSW	8.50	30.75	81.00	49.00	37.50	5.50	212.25
SW	6.50	22.25	8.75	1.75	0.75	0.00	40.00
WSW	5.00	14.75	7.00	2.75	1.25	0.00	30.75
W	3.75	12.25	20.50	12.00	2.50	1.50	52.50
WNW	2.00	9.25	35.75	31.25	7.00	0.25	85.50
NW	3.25	25.25	49.75	42.25	11.00	1.25	132.75
NNW	6.50	47.75	81.25	81.25	14.75	3.50	235.00
Total	129.00	519.25	763.75	502.50	128.00	33.25	2075.75

Hours of Calm (<1.0 mph): 2.75

Hours At Each Wind Speed and Direction

Period of Record: JANUARY 1 THROUGH DECEMBER 31, 2024

Stability Class: E

Elevation: 10 Meters

Wind Direction Cardinals	Wind Speed (mph)						Total
	1-3	4-7	8-12	13-18	19-24	> 24	
N	21.00	42.25	49.75	8.50	1.00	0.00	122.50
NNE	34.75	56.00	24.00	2.25	0.00	0.00	117.00
NE	37.25	49.00	11.25	1.50	0.00	0.00	99.00
ENE	26.25	62.75	34.25	1.25	0.00	0.00	124.50
E	28.50	76.00	41.75	11.25	0.25	0.00	157.75
ESE	20.25	81.00	41.50	6.50	1.00	2.25	152.50
SE	12.00	88.25	59.00	19.25	4.75	0.50	183.75
SSE	9.00	129.75	177.25	73.25	7.50	2.50	399.25
S	8.75	99.75	93.25	64.00	36.75	14.25	316.75
SSW	10.50	46.00	51.25	16.00	1.00	0.00	124.75
SW	14.25	29.50	5.25	1.75	1.75	0.00	52.50
WSW	10.75	22.75	18.50	2.00	1.00	0.00	55.00
W	4.25	19.00	21.50	6.50	0.25	0.25	51.75
WNW	3.50	22.00	17.75	1.75	0.25	0.00	45.25
NW	3.00	34.25	31.00	5.50	0.00	0.50	74.25
NNW	10.50	68.50	49.25	5.75	1.00	0.00	135.00
Total	254.50	926.75	726.50	227.00	56.50	20.25	2211.50

Hours of Calm (<1.0 mph): 4.00

Hours At Each Wind Speed and Direction

Period of Record: JANUARY 1 THROUGH DECEMBER 31, 2024

Stability Class: F

Elevation: 10 Meters

Wind Direction Cardinals	Wind Speed (mph)						Total
	1-3	4-7	8-12	13-18	19-24	> 24	
N	16.00	58.25	5.50	0.25	0.00	0.00	80.00
NNE	37.50	36.75	2.50	0.00	0.00	0.00	76.75
NE	31.00	21.50	0.00	0.00	0.00	0.00	52.50
ENE	19.25	51.25	1.50	0.00	0.00	0.00	72.00
E	22.25	62.25	3.75	0.25	0.00	0.00	88.50
ESE	23.00	93.00	4.00	0.50	0.00	0.00	120.50
SE	15.25	89.25	15.00	0.25	0.00	0.00	119.75
SSE	9.75	86.75	25.50	6.75	0.25	0.00	129.00
S	6.25	31.00	9.50	3.50	0.50	0.00	50.75
SSW	7.50	18.25	7.00	0.25	0.00	0.00	33.00
SW	9.25	8.25	0.00	0.00	0.00	0.00	17.50
WSW	12.00	8.25	0.00	0.00	0.00	0.00	20.25
W	6.50	10.00	1.25	0.00	0.00	0.00	17.75
WNW	4.75	6.00	2.50	0.00	0.00	0.00	13.25
NW	10.75	27.50	5.75	0.00	0.00	0.00	44.00
NNW	16.75	51.00	10.50	0.00	0.00	0.00	78.25
Total	247.75	659.25	94.25	11.75	0.75	0.00	1013.75

Hours of Calm (<1.0 mph): 2.75

Hours At Each Wind Speed and Direction

Period of Record: JANUARY 1 THROUGH DECEMBER 31, 2024

Stability Class: G

Elevation: 10 Meters

Wind Direction Cardinals	Wind Speed (mph)						Total
	1-3	4-7	8-12	13-18	19-24	> 24	
N	21.75	30.00	1.50	0.00	0.00	0.00	53.25
NNE	59.75	63.25	0.50	0.00	0.00	0.00	123.50
NE	49.75	18.25	0.50	0.00	0.00	0.00	68.50
ENE	24.50	56.25	0.75	0.00	0.00	0.00	81.50
E	39.25	74.75	1.50	0.50	0.00	0.00	116.00
ESE	36.75	59.25	0.00	0.00	0.00	0.00	96.00
SE	21.25	68.00	2.25	0.00	0.00	0.00	91.50
SSE	10.25	42.75	3.50	0.00	0.00	0.00	56.50
S	6.00	7.25	2.25	0.50	0.00	0.00	16.00
SSW	5.25	2.25	0.50	0.00	0.00	0.00	8.00
SW	7.50	3.75	0.25	0.00	0.00	0.00	11.50
WSW	8.00	1.75	0.00	0.00	0.00	0.00	9.75
W	3.75	1.00	0.00	0.00	0.00	0.00	4.75
WNW	8.50	1.75	0.00	0.00	0.00	0.00	10.25
NW	16.75	9.50	0.25	0.00	0.00	0.00	26.50
NNW	23.25	28.00	1.00	0.00	0.00	0.00	52.25
Total	342.25	467.75	14.75	1.00	0.00	0.00	825.75

Hours of Calm (<1.0 mph): 10.00

Hours At Each Wind Speed and Direction

Period of Record: JANUARY 1 THROUGH DECEMBER 31, 2024

Stability Class: ALL

Elevation: 10 Meters

Wind Direction Cardinals	Wind Speed (mph)						Total
	1-3	4-7	8-12	13-18	19-24	> 24	
N	75.00	207.50	204.00	80.50	17.75	1.50	586.25
NNE	160.00	279.50	158.75	33.25	3.50	0.25	635.25
NE	158.75	203.75	56.50	5.75	0.25	0.00	425.00
ENE	92.50	262.75	99.00	8.50	0.25	0.50	463.50
E	111.00	306.25	143.50	29.75	0.75	0.50	591.75
ESE	98.00	308.50	137.50	25.50	2.75	3.00	575.25
SE	71.00	325.50	165.75	58.50	12.00	2.25	635.00
SSE	51.50	391.50	387.50	214.50	26.50	7.50	1079.00
S	41.50	270.00	354.75	285.50	90.75	37.50	1080.00
SSW	40.50	137.50	219.00	152.00	63.25	8.25	620.50
SW	48.50	101.00	49.50	15.25	5.50	0.00	219.75
WSW	47.25	71.00	50.25	14.25	7.50	0.00	190.25
W	29.00	73.50	70.25	27.25	5.75	4.25	210.00
WNW	24.25	60.50	85.00	49.25	22.25	0.75	242.00
NW	38.75	120.25	165.00	85.75	27.50	3.50	440.75
NNW	63.00	222.75	219.50	138.25	26.50	5.00	675.00
Total	1150.50	3341.75	2565.75	1223.75	312.75	74.75	8669.25

Hours of Calm (<1.0 mph): 51.50

Maximum Hours of Invalid Data: 63.25

Appendix C

ONSITE GROUNDWATER PROTECTION PROGRAM MONITORING

ONSITE GROUNDWATER PROTECTION PROGRAM MONITORING

Objective

The objective of onsite groundwater protection program monitoring is to ensure timely detection of inadvertent radiological releases to ground water. At the Wolf Creek Generating Station (WCGS), some background tritium influences from lake water reuse are normal and expected.

Basis

The onsite groundwater protection program monitoring sample results are being reported in the Radioactive Effluent Release Report per guidance received in association with the Nuclear Energy Institute (NEI) Groundwater Protection Industry Initiative. The following information is also being reported in association with the NEI Groundwater Protection Industry Initiative:

1. Describe any onsite licensed radioactive material releases or spills that were voluntarily communicated to State/Local officials during the calendar year. - None
2. Describe any onsite groundwater sample results that exceeded the reporting thresholds that were voluntarily communicated to State/Local officials during the calendar year. – None

There were no radioactive material releases, spills, or reporting level exceedances reported to State/Local officials during 2024.

Onsite Groundwater Protection Program Monitoring Description

In March of 2006, WCGS established an onsite groundwater protection monitoring program. During 2008, thirteen monitoring wells were added to the onsite groundwater protection monitoring program. The onsite groundwater protection program monitoring is implemented via procedure AI 07-007, *Onsite Groundwater Protection Program Monitoring*. During 2018 an additional 5 wells were installed. In October of 2019, the AUX location, a dewatering well located on the East side of the Auxiliary Building, was removed from the monitoring program due to being a subsurface dewatering well and is reported with subsurface water results. The onsite groundwater samples were collected by a WCGS Environmental technician and analyzed by Microbac Laboratories, Inc. Onsite groundwater samples were collected quarterly when available, and were analyzed by gamma isotopic analysis, radiochemical analysis for I-131, and tritium analysis. The vendor lab (Microbac Laboratories, Inc.) participated in an interlaboratory comparison program. The following tables describe the sample locations, the lower limits of detection and the reporting levels for radioactivity detected.

Sample Location	Sample Location Description
EAST ESW-W	Essential Service Water Dewatering Well, East Group, West well, located southeast of the reactor
MW-01A	Monitoring Well, shallow depth, located northeast of the reactor (control sample location)
MW-01B	Monitoring Well, mid-range depth, located northeast of the reactor (control sample location)
MW-01C	Monitoring Well, deep depth, located northeast of the reactor (control sample location)
MW-02A	Monitoring Well, shallow depth, located northwest of the reactor
MW-02B	Monitoring Well, mid-range depth, located northwest of the reactor
MW-03A	Monitoring Well, shallow depth, located southwest of the reactor
MW-03B	Monitoring Well, mid-range depth, located southwest of the reactor
MW-03C	Monitoring Well, deep depth, located southwest of the reactor
MW-05C	Monitoring Well, deep depth, located south of the reactor
MW-11A	Monitoring Well, shallow depth, located southwest of the reactor
MW-11B	Monitoring Well, mid-range depth, located southwest of the reactor
MW-12A	Monitoring Well, shallow depth, located south of the reactor
MW-12B	Monitoring Well, mid-range depth, located south of the reactor
MW-13	Monitoring Well, mid-range depth, located south of the reactor
MW-14	Monitoring Well, mid-range depth, located southeast of the reactor
MW-15	Monitoring Well, mid-range depth, located southeast of the reactor
MW-16	Monitoring Well, mid-range depth, located southeast of the reactor
MW-17	Monitoring Well, mid-range depth, located southeast of the reactor
WEST ESW-W	Essential Service Water Dewatering Well, West Group, West well, located south of the reactor

Onsite Groundwater Lower Limits of Detection

Analysis	(pCi/L)	Analysis	(pCi/L)
H-3	2,000	Zr-Nb-95	15
Mn-54	15	I-131	1
Co-58	15	Cs-134	15
Fe-59	30	Cs-137	18
Co-60	15	Ba-La-140	15
Zn-65	30		

Reporting Levels for Radioactivity Detected in Onsite Groundwater

Analysis	(pCi/L)	Analysis	(pCi/L)
H-3	20,000	Zr-Nb-95	400
Mn-54	1,000	I-131	2
Co-58	1,000	Cs-134	30
Fe-59	400	Cs-137	50
Co-60	300	Ba-La-140	200
Zn-65	300		

Discussion of Results

Low levels of tritium were detected in an Essential Service Water dewatering well (EAST ESW-W), MW-12A, and, MW-15, all within areas of backfill during plant construction. Overall, our numbers were below our LLD's. This has been attributed to the Plant's reuse of tritiated lake water and is consistent with gaseous tritium deposition during normal operation. Lake water is used for plant cooling, which includes Essential Service Water, and the Fire Protection System.

The monitoring well sample with the highest level of tritium detected (209 +/- 93 pCi/L) was collected on 3-27-24 from the MW-12A location. The measured monitoring well tritium levels are significantly lower than the tritium levels routinely detected in surface water collected from Coffey County Lake (2024 range was 10,663 to 15,030 pCi/L).

The tritium activity was the only activity detected in the onsite groundwater samples. LLD's were met, and sample analysis results were below the applicable reporting levels.

Subsurface Water

Due to Industry Operating Experience, the WCGS started collecting and analyzing subsurface water during 2010. Subsurface water monitoring is a portion of the Groundwater Protection Program and is implemented via procedure AI 07-007, *Onsite Groundwater Protection Program Monitoring*. The definitions for subsurface water include:

1. Water that is encountered below grade while excavating, trenching, or drilling outside of the Radiologically Controlled Area and within the area displayed in Figure 1 (of AI 07-007). This excludes recent rainfall build-up in open excavation trenches.
2. Water that is encountered below grade or water that needs to be removed that is outside of a building, outside of the Radiologically Controlled Area and within the area displayed in Figure 1 (of AI 07-007). Examples include electrical vaults, piping vaults, valve pits, manholes, concrete pits, etc. Excludes removing water from power block sumps, sanitary sewers, spill containment berms or from within buildings.

The subsurface water samples were analyzed by the WCGS Chemistry Laboratory and the results were reviewed by Environmental Management and Chemistry. The subsurface water samples were analyzed for tritium and gamma activity. The following table identifies the sample dates, sample locations, and the analysis results.

Date	Location Description	Tritium (pCi/L)
01/25/24	CW-3 (1CW0008C) Manhole near the Radwaste Building	8,281
02/19/24	EMH137 between Charles Evans Building and Containment	9,956
03/23/24	Dewatering Well #1 (1DW0001) - East of the Turbine Building	8,554
03/23/24	Dewatering Well #2 (1DW0002) - East of the Turbine Building	15,551
03/23/24	Dewatering Well #3 (1DW0003) – West of Turbine Building	5,047
03/23/24	Dewatering Well #5 (1DWV005)- West of the Hot Machine	<1,910
03/23/24	Dewatering Well #7 (1DW0007) - SW of Com. Corridor	2,911
05/28/24	EMH105 Between OAB and Turbine Building	<1,992
07/22/24	CW-3 (1CW0008C) Manhole near the Radwaste Building	2,550
08/21/24	Dewatering Well #1 (1DW0001) - East of the Turbine Building	9,981
08/21/24	Dewatering Well #2 (1DW0002) - East of the Turbine Building	9,993
08/21/24	Dewatering Well #7 (1DW0007) - SW of Com. Corridor	3,225
10/07/24	EMH106 West Charles Evans between fence	2,014
11/04/24	EMH106 West Charles Evans between fence	2,713
11/04/24	EMH119 NW Turbine building near transformers	2,020

Highest detected tritium measured was 15,551 pCi/L in a sample collected on 03/23/24 from manhole Dewatering Well #2 (1DW0002) located east of the Turbine Building. Gamma activity was not detected in the 03/23/24 subsurface water sample. Again, the detected tritium activity is likely due to the Plant's reuse of tritiated lake water. Lake water is used for plant cooling, which includes Essential Service Water (ESW), and the Fire Protection System. The measured tritium levels from subsurface water monitoring were lower than the onsite groundwater tritium reporting level of 20,000 pCi/L.

Conclusion

Based upon the results of the water samples that were analyzed in association with the Onsite Groundwater Protection Program, no inadvertent radiological releases to ground water were identified.

**Onsite Groundwater Results
Concentration (pCi/L)**

LOCATION	DATE	NUCLIDE	ACTIVITY	SIGN	ERROR	NOTE
EAST ESW-W	27-Mar-24	MN-54		<	2.4	
EAST ESW-W	27-Mar-24	CO-58		<	1.6	
EAST ESW-W	27-Mar-24	FE-59		<	4	
EAST ESW-W	27-Mar-24	CO-60		<	1.7	
EAST ESW-W	27-Mar-24	ZN-65		<	5.1	
EAST ESW-W	27-Mar-24	ZR-NB-95		<	2.8	
EAST ESW-W	27-Mar-24	I-131		<	0.447	
EAST ESW-W	27-Mar-24	CS-134		<	2.7	
EAST ESW-W	27-Mar-24	CS-137		<	3	
EAST ESW-W	27-Mar-24	BA-LA-140		<	5.3	
EAST ESW-W	27-Mar-24	H-3	192	+/-	92	
EAST ESW-W	19-Jun-24	MN-54		<	3.3	
EAST ESW-W	19-Jun-24	CO-58		<	2.4	
EAST ESW-W	19-Jun-24	FE-59		<	4.2	
EAST ESW-W	19-Jun-24	CO-60		<	3.7	
EAST ESW-W	19-Jun-24	ZN-65		<	8	
EAST ESW-W	19-Jun-24	ZR-NB-95		<	3.2	
EAST ESW-W	19-Jun-24	I-131		<	0.263	
EAST ESW-W	19-Jun-24	CS-134		<	2.9	
EAST ESW-W	19-Jun-24	CS-137		<	2.5	
EAST ESW-W	19-Jun-24	BA-LA-140		<	2.3	
EAST ESW-W	19-Jun-24	H-3		<	185	
EAST ESW-W	12-Sep-24	MN-54		<	6.4	

EAST ESW-W	12-Sep-24	CO-58		<	6.9	
EAST ESW-W	12-Sep-24	FE-59		<	8.1	
EAST ESW-W	12-Sep-24	CO-60		<	4.9	
EAST ESW-W	12-Sep-24	ZN-65		<	7.4	
EAST ESW-W	12-Sep-24	ZR-NB-95		<	5.6	
EAST ESW-W	12-Sep-24	I-131		<	0.373	
EAST ESW-W	12-Sep-24	CS-134		<	6.4	
EAST ESW-W	12-Sep-24	CS-137		<	4.6	
EAST ESW-W	12-Sep-24	BA-LA-140		<	5.8	
EAST ESW-W	12-Sep-24	H-3		<	180	
EAST ESW-W	24-Oct-24	MN-54		<	3.8	
EAST ESW-W	24-Oct-24	CO-58		<	2.7	
EAST ESW-W	24-Oct-24	FE-59		<	5.5	
EAST ESW-W	24-Oct-24	CO-60		<	3.1	
EAST ESW-W	24-Oct-24	ZN-65		<	6.5	
EAST ESW-W	24-Oct-24	ZR-NB-95		<	3.1	
EAST ESW-W	24-Oct-24	I-131		<	0.439	
EAST ESW-W	24-Oct-24	CS-134		<	3.4	
EAST ESW-W	24-Oct-24	CS-137		<	3.6	
EAST ESW-W	24-Oct-24	BA-LA-140		<	2.6	
EAST ESW-W	24-Oct-24	H-3		<	185	
MW-01A	27-Mar-24	MN-54		<	3.6	
MW-01A	27-Mar-24	CO-58		<	4	
MW-01A	27-Mar-24	FE-59		<	3.5	
MW-01A	27-Mar-24	CO-60		<	4	
MW-01A	27-Mar-24	ZN-65		<	7.6	

MW-01A	27-Mar-24	ZR-NB-95		<	3.9	
MW-01A	27-Mar-24	I-131		<	0.425	
MW-01A	27-Mar-24	CS-134		<	3.7	
MW-01A	27-Mar-24	CS-137		<	4.3	
MW-01A	27-Mar-24	BA-LA-140		<	2.9	
MW-01A	27-Mar-24	H-3		<	175	
MW-01A	19-Jun-24	MN-54		<	2.3	
MW-01A	19-Jun-24	CO-58		<	3.8	
MW-01A	19-Jun-24	FE-59		<	6.5	
MW-01A	19-Jun-24	CO-60		<	4.7	
MW-01A	19-Jun-24	ZN-65		<	7.5	
MW-01A	19-Jun-24	ZR-NB-95		<	3.9	
MW-01A	19-Jun-24	I-131		<	0.437	
MW-01A	19-Jun-24	CS-134		<	4.2	
MW-01A	19-Jun-24	CS-137		<	4.8	
MW-01A	19-Jun-24	BA-LA-140		<	1.8	
MW-01A	19-Jun-24	H-3		<	185	
MW-01A	12-Sep-24	MN-54		<	3.8	
MW-01A	12-Sep-24	CO-58		<	3.1	
MW-01A	12-Sep-24	FE-59		<	7.4	
MW-01A	12-Sep-24	CO-60		<	3.4	
MW-01A	12-Sep-24	ZN-65		<	2.2	
MW-01A	12-Sep-24	ZR-NB-95		<	3.1	
MW-01A	12-Sep-24	I-131		<	0.304	
MW-01A	12-Sep-24	CS-134		<	4.8	
MW-01A	12-Sep-24	CS-137		<	6.2	

MW-01A	12-Sep-24	BA-LA-140		<	2	
MW-01A	12-Sep-24	H-3		<	186	
MW-01A	24-Oct-24	MN-54		<	2.7	
MW-01A	24-Oct-24	CO-58		<	2.4	
MW-01A	24-Oct-24	FE-59		<	6.1	
MW-01A	24-Oct-24	CO-60		<	5.5	
MW-01A	24-Oct-24	ZN-65		<	6.2	
MW-01A	24-Oct-24	ZR-NB-95		<	2.7	
MW-01A	24-Oct-24	I-131		<	0.391	
MW-01A	24-Oct-24	CS-134		<	4.4	
MW-01A	24-Oct-24	CS-137		<	5.5	
MW-01A	24-Oct-24	BA-LA-140		<	3.5	
MW-01A	24-Oct-24	H-3		<	185	
MW-01B	27-Mar-24	MN-54		<	3.5	
MW-01B	27-Mar-24	CO-58		<	5.9	
MW-01B	27-Mar-24	FE-59		<	3.7	
MW-01B	27-Mar-24	CO-60		<	3.4	
MW-01B	27-Mar-24	ZN-65		<	6.3	
MW-01B	27-Mar-24	ZR-NB-95		<	7.5	
MW-01B	27-Mar-24	I-131		<	0.487	
MW-01B	27-Mar-24	CS-134		<	6	
MW-01B	27-Mar-24	CS-137		<	5.2	
MW-01B	27-Mar-24	BA-LA-140		<	6.3	
MW-01B	27-Mar-24	H-3		<	175	
MW-01B	19-Jun-24	MN-54		<	6.1	
MW-01B	19-Jun-24	CO-58		<	7.6	

MW-01B	19-Jun-24	FE-59		<	11.7	
MW-01B	19-Jun-24	CO-60		<	3.2	
MW-01B	19-Jun-24	ZN-65		<	8.4	
MW-01B	19-Jun-24	ZR-NB-95		<	5.8	
MW-01B	19-Jun-24	I-131		<	0.373	
MW-01B	19-Jun-24	CS-134		<	8.1	
MW-01B	19-Jun-24	CS-137		<	6.3	
MW-01B	19-Jun-24	BA-LA-140		<	3.5	
MW-01B	19-Jun-24	H-3		<	185	
MW-01B	12-Sep-24	MN-54		<	5.3	
MW-01B	12-Sep-24	CO-58		<	5.4	
MW-01B	12-Sep-24	FE-59		<	5.4	
MW-01B	12-Sep-24	CO-60		<	5.6	
MW-01B	12-Sep-24	ZN-65		<	8.5	
MW-01B	12-Sep-24	ZR-NB-95		<	5.6	
MW-01B	12-Sep-24	I-131		<	0.464	
MW-01B	12-Sep-24	CS-134		<	7.5	
MW-01B	12-Sep-24	CS-137		<	7.8	
MW-01B	12-Sep-24	BA-LA-140		<	7.1	
MW-01B	12-Sep-24	H-3		<	180	
MW-01B	24-Oct-24	MN-54		<	8.3	
MW-01B	24-Oct-24	CO-58		<	7.3	
MW-01B	24-Oct-24	FE-59		<	9.5	
MW-01B	24-Oct-24	CO-60		<	5.8	
MW-01B	24-Oct-24	ZN-65		<	10.5	
MW-01B	24-Oct-24	ZR-NB-95		<	4.3	

MW-01B	24-Oct-24	I-131		<	0.406	
MW-01B	24-Oct-24	CS-134		<	6.7	
MW-01B	24-Oct-24	CS-137		<	6.3	
MW-01B	24-Oct-24	BA-LA-140		<	5.6	
MW-01B	24-Oct-24	H-3		<	185	
MW-01C	27-Mar-24	MN-54		<	4.7	
MW-01C	27-Mar-24	CO-58		<	4.6	
MW-01C	27-Mar-24	FE-59		<	8.3	
MW-01C	27-Mar-24	CO-60		<	5.3	
MW-01C	27-Mar-24	ZN-65		<	11.4	
MW-01C	27-Mar-24	ZR-NB-95		<	4.1	
MW-01C	27-Mar-24	I-131		<	0.484	
MW-01C	27-Mar-24	CS-134		<	6.7	
MW-01C	27-Mar-24	CS-137		<	6.6	
MW-01C	27-Mar-24	BA-LA-140		<	3	
MW-01C	27-Mar-24	H-3		<	175	
MW-01C	19-Jun-24	MN-54		<	2.6	
MW-01C	19-Jun-24	CO-58		<	3.1	
MW-01C	19-Jun-24	FE-59		<	4.4	
MW-01C	19-Jun-24	CO-60		<	2.8	
MW-01C	19-Jun-24	ZN-65		<	2.8	
MW-01C	19-Jun-24	ZR-NB-95		<	2.7	
MW-01C	19-Jun-24	I-131		<	0.366	
MW-01C	19-Jun-24	CS-134		<	4	
MW-01C	19-Jun-24	CS-137		<	3	
MW-01C	19-Jun-24	BA-LA-140		<	2.2	

MW-01C	19-Jun-24	H-3		<	185	
MW-01C	12-Sep-24	MN-54		<	3.6	
MW-01C	12-Sep-24	CO-58		<	2.9	
MW-01C	12-Sep-24	FE-59		<	5.2	
MW-01C	12-Sep-24	CO-60		<	2.7	
MW-01C	12-Sep-24	ZN-65		<	6.8	
MW-01C	12-Sep-24	ZR-NB-95		<	2.8	
MW-01C	12-Sep-24	I-131		<	0.42	
MW-01C	12-Sep-24	CS-134		<	4.5	
MW-01C	12-Sep-24	CS-137		<	3.8	
MW-01C	12-Sep-24	BA-LA-140		<	3.1	
MW-01C	12-Sep-24	H-3		<	180	
MW-01C	24-Oct-24	MN-54		<	2.9	
MW-01C	24-Oct-24	CO-58		<	3.2	
MW-01C	24-Oct-24	FE-59		<	6.3	
MW-01C	24-Oct-24	CO-60		<	1.9	
MW-01C	24-Oct-24	ZN-65		<	6.3	
MW-01C	24-Oct-24	ZR-NB-95		<	4.3	
MW-01C	24-Oct-24	I-131		<	0.437	
MW-01C	24-Oct-24	CS-134		<	3.9	
MW-01C	24-Oct-24	CS-137		<	3.3	
MW-01C	24-Oct-24	BA-LA-140		<	3.3	
MW-01C	24-Oct-24	H-3		<	185	
MW-02A	27-Mar-24	MN-54		<	1.6	
MW-02A	27-Mar-24	CO-58		<	1.4	
MW-02A	27-Mar-24	FE-59		<	3.5	

MW-02A	27-Mar-24	CO-60		<	1.7	
MW-02A	27-Mar-24	ZN-65		<	4.3	
MW-02A	27-Mar-24	ZR-NB-95		<	1.7	
MW-02A	27-Mar-24	I-131		<	0.44	
MW-02A	27-Mar-24	CS-134		<	2.6	
MW-02A	27-Mar-24	CS-137		<	3.1	
MW-02A	27-Mar-24	BA-LA-140		<	4.9	
MW-02A	27-Mar-24	H-3		<	175	
MW-02A	19-Jun-24	MN-54		<	2.5	
MW-02A	19-Jun-24	CO-58		<	2.2	
MW-02A	19-Jun-24	FE-59		<	3.8	
MW-02A	19-Jun-24	CO-60		<	1.6	
MW-02A	19-Jun-24	ZN-65		<	4.1	
MW-02A	19-Jun-24	ZR-NB-95		<	2.7	
MW-02A	19-Jun-24	I-131		<	0.329	
MW-02A	19-Jun-24	CS-134		<	3.1	
MW-02A	19-Jun-24	CS-137		<	4.2	
MW-02A	19-Jun-24	BA-LA-140		<	3.4	
MW-02A	19-Jun-24	H-3		<	185	
MW-02A	12-Sep-24	MN-54		<	2.6	
MW-02A	12-Sep-24	CO-58		<	3.2	
MW-02A	12-Sep-24	FE-59		<	4	
MW-02A	12-Sep-24	CO-60		<	2.5	
MW-02A	12-Sep-24	ZN-65		<	3.7	
MW-02A	12-Sep-24	ZR-NB-95		<	3.8	
MW-02A	12-Sep-24	I-131		<	0.32	

MW-02A	12-Sep-24	CS-134		<	3.1	
MW-02A	12-Sep-24	CS-137		<	3.2	
MW-02A	12-Sep-24	BA-LA-140		<	4.4	
MW-02A	12-Sep-24	H-3		<	180	
MW-02A	24-Oct-24	MN-54		<	2	
MW-02A	24-Oct-24	CO-58		<	2.2	
MW-02A	24-Oct-24	FE-59		<	4.8	
MW-02A	24-Oct-24	CO-60		<	2.1	
MW-02A	24-Oct-24	ZN-65		<	3.7	
MW-02A	24-Oct-24	ZR-NB-95		<	2.5	
MW-02A	24-Oct-24	I-131		<	0.429	
MW-02A	24-Oct-24	CS-134		<	3.5	
MW-02A	24-Oct-24	CS-137		<	4.1	
MW-02A	24-Oct-24	BA-LA-140		<	2.9	
MW-02A	24-Oct-24	H-3		<	185	
MW-02B	27-Mar-24	MN-54		<	1.8	
MW-02B	27-Mar-24	CO-58		<	2	
MW-02B	27-Mar-24	FE-59		<	3.8	
MW-02B	27-Mar-24	CO-60		<	2	
MW-02B	27-Mar-24	ZN-65		<	5.4	
MW-02B	27-Mar-24	ZR-NB-95		<	3.1	
MW-02B	27-Mar-24	I-131		<	0.466	
MW-02B	27-Mar-24	CS-134		<	2.8	
MW-02B	27-Mar-24	CS-137		<	3	
MW-02B	27-Mar-24	BA-LA-140		<	2.9	
MW-02B	27-Mar-24	H-3		<	175	

MW-02B	19-Jun-24	MN-54		<	3.1	
MW-02B	19-Jun-24	CO-58		<	3.9	
MW-02B	19-Jun-24	FE-59		<	3.7	
MW-02B	19-Jun-24	CO-60		<	4.9	
MW-02B	19-Jun-24	ZN-65		<	3.8	
MW-02B	19-Jun-24	ZR-NB-95		<	3.7	
MW-02B	19-Jun-24	I-131		<	0.42	
MW-02B	19-Jun-24	CS-134		<	4.5	
MW-02B	19-Jun-24	CS-137		<	6.2	
MW-02B	19-Jun-24	BA-LA-140		<	4.3	
MW-02B	19-Jun-24	H-3		<	185	
MW-02B	12-Sep-24	MN-54		<	3.8	
MW-02B	12-Sep-24	CO-58		<	1.4	
MW-02B	12-Sep-24	FE-59		<	5.3	
MW-02B	12-Sep-24	CO-60		<	3.6	
MW-02B	12-Sep-24	ZN-65		<	3.9	
MW-02B	12-Sep-24	ZR-NB-95		<	2.8	
MW-02B	12-Sep-24	I-131		<	0.311	
MW-02B	12-Sep-24	CS-134		<	3.7	
MW-02B	12-Sep-24	CS-137		<	5.3	
MW-02B	12-Sep-24	BA-LA-140		<	2.9	
MW-02B	12-Sep-24	H-3		<	180	
MW-02B	24-Oct-24	MN-54		<	3.9	
MW-02B	24-Oct-24	CO-58		<	2	
MW-02B	24-Oct-24	FE-59		<	4.7	
MW-02B	24-Oct-24	CO-60		<	1.8	

MW-02B	24-Oct-24	ZN-65		<	3.9	
MW-02B	24-Oct-24	ZR-NB-95		<	3.2	
MW-02B	24-Oct-24	I-131		<	0.389	
MW-02B	24-Oct-24	CS-134		<	3	
MW-02B	24-Oct-24	CS-137		<	3.6	
MW-02B	24-Oct-24	BA-LA-140		<	2.9	
MW-02B	24-Oct-24	H-3		<	185	
MW-03A	27-Mar-24	MN-54		<	1.6	Duplicate
MW-03A	27-Mar-24	MN-54		<	1.7	
MW-03A	27-Mar-24	CO-58		<	3.1	
MW-03A	27-Mar-24	CO-58		<	1.3	Duplicate
MW-03A	27-Mar-24	FE-59		<	2.8	Duplicate
MW-03A	27-Mar-24	FE-59		<	6.5	
MW-03A	27-Mar-24	CO-60		<	1.8	Duplicate
MW-03A	27-Mar-24	CO-60		<	2.8	
MW-03A	27-Mar-24	ZN-65		<	3.3	Duplicate
MW-03A	27-Mar-24	ZN-65		<	3.7	
MW-03A	27-Mar-24	ZR-NB-95		<	3	
MW-03A	27-Mar-24	ZR-NB-95		<	1.9	Duplicate
MW-03A	27-Mar-24	I-131		<	0.465	Duplicate
MW-03A	27-Mar-24	I-131		<	0.493	
MW-03A	27-Mar-24	CS-134		<	1.3	Duplicate
MW-03A	27-Mar-24	CS-134		<	2.8	
MW-03A	27-Mar-24	CS-137		<	2.8	
MW-03A	27-Mar-24	CS-137		<	1.7	Duplicate
MW-03A	27-Mar-24	BA-LA-140		<	3.6	

MW-03A	27-Mar-24	BA-LA-140		<	2.6	Duplicate
MW-03A	27-Mar-24	H-3		<	175	Duplicate
MW-03A	27-Mar-24	H-3		<	175	
MW-03A	19-Jun-24	MN-54		<	2.3	Duplicate
MW-03A	19-Jun-24	MN-54		<	5.3	
MW-03A	19-Jun-24	CO-58		<	3.7	Duplicate
MW-03A	19-Jun-24	CO-58		<	5.9	
MW-03A	19-Jun-24	FE-59		<	3.3	Duplicate
MW-03A	19-Jun-24	FE-59		<	7.4	
MW-03A	19-Jun-24	CO-60		<	3.3	
MW-03A	19-Jun-24	CO-60		<	4.7	Duplicate
MW-03A	19-Jun-24	ZN-65		<	2.5	Duplicate
MW-03A	19-Jun-24	ZN-65		<	5.1	
MW-03A	19-Jun-24	ZR-NB-95		<	5.6	
MW-03A	19-Jun-24	ZR-NB-95		<	3.8	Duplicate
MW-03A	19-Jun-24	I-131		<	0.409	
MW-03A	19-Jun-24	I-131		<	0.433	Duplicate
MW-03A	19-Jun-24	CS-134		<	3.4	Duplicate
MW-03A	19-Jun-24	CS-134		<	8.7	
MW-03A	19-Jun-24	CS-137		<	4.4	Duplicate
MW-03A	19-Jun-24	CS-137		<	5.6	
MW-03A	19-Jun-24	BA-LA-140		<	3.8	
MW-03A	19-Jun-24	BA-LA-140		<	2.4	Duplicate
MW-03A	19-Jun-24	H-3		<	185	Duplicate
MW-03A	19-Jun-24	H-3		<	185	
MW-03A	12-Sep-24	MN-54		<	4.4	

MW-03A	12-Sep-24	CO-58		<	4.8	
MW-03A	12-Sep-24	FE-59		<	14.4	
MW-03A	12-Sep-24	CO-60		<	6.1	
MW-03A	12-Sep-24	ZN-65		<	9.7	
MW-03A	12-Sep-24	ZR-NB-95		<	5.7	
MW-03A	12-Sep-24	I-131		<	0.29	
MW-03A	12-Sep-24	CS-134		<	7.6	
MW-03A	12-Sep-24	CS-137		<	7.2	
MW-03A	12-Sep-24	BA-LA-140		<	7	
MW-03A	12-Sep-24	H-3		<	180	
MW-03A	24-Oct-24	MN-54		<	5.6	
MW-03A	24-Oct-24	CO-58		<	7.3	
MW-03A	24-Oct-24	FE-59		<	8.8	
MW-03A	24-Oct-24	CO-60		<	6.5	
MW-03A	24-Oct-24	ZN-65		<	7.5	
MW-03A	24-Oct-24	ZR-NB-95		<	6.5	
MW-03A	24-Oct-24	I-131		<	0.404	
MW-03A	24-Oct-24	CS-134		<	5.9	
MW-03A	24-Oct-24	CS-137		<	3.2	
MW-03A	24-Oct-24	BA-LA-140		<	6.9	
MW-03A	24-Oct-24	H-3		<	185	
MW-03B	27-Mar-24	MN-54		<	2.5	
MW-03B	27-Mar-24	CO-58		<	2.5	
MW-03B	27-Mar-24	FE-59		<	5.3	
MW-03B	27-Mar-24	CO-60		<	3.4	
MW-03B	27-Mar-24	ZN-65		<	4.8	

MW-03B	27-Mar-24	ZR-NB-95		<	3.1	
MW-03B	27-Mar-24	I-131		<	0.425	
MW-03B	27-Mar-24	CS-134		<	3	
MW-03B	27-Mar-24	CS-137		<	3.5	
MW-03B	27-Mar-24	BA-LA-140		<	1.9	
MW-03B	27-Mar-24	H-3		<	175	
MW-03B	19-Jun-24	MN-54		<	2.9	
MW-03B	19-Jun-24	CO-58		<	3.6	
MW-03B	19-Jun-24	FE-59		<	5.1	
MW-03B	19-Jun-24	CO-60		<	2.6	
MW-03B	19-Jun-24	ZN-65		<	5.9	
MW-03B	19-Jun-24	ZR-NB-95		<	3.1	
MW-03B	19-Jun-24	I-131		<	0.312	
MW-03B	19-Jun-24	CS-134		<	3.1	
MW-03B	19-Jun-24	CS-137		<	4.2	
MW-03B	19-Jun-24	BA-LA-140		<	3.1	
MW-03B	19-Jun-24	H-3		<	185	
MW-03B	12-Sep-24	MN-54		<	2.8	
MW-03B	12-Sep-24	CO-58		<	3.2	
MW-03B	12-Sep-24	FE-59		<	5	
MW-03B	12-Sep-24	CO-60		<	2	
MW-03B	12-Sep-24	ZN-65		<	3.8	
MW-03B	12-Sep-24	ZR-NB-95		<	2.8	
MW-03B	12-Sep-24	I-131		<	0.347	
MW-03B	12-Sep-24	CS-134		<	3.6	
MW-03B	12-Sep-24	CS-137		<	4	

MW-03B	12-Sep-24	BA-LA-140		<	3.4	
MW-03B	12-Sep-24	H-3		<	180	
MW-03B	24-Oct-24	MN-54		<	4.6	Duplicate
MW-03B	24-Oct-24	MN-54		<	2	
MW-03B	24-Oct-24	CO-58		<	1.9	Duplicate
MW-03B	24-Oct-24	CO-58		<	3	
MW-03B	24-Oct-24	FE-59		<	7.2	
MW-03B	24-Oct-24	FE-59		<	5.6	Duplicate
MW-03B	24-Oct-24	CO-60		<	4.5	Duplicate
MW-03B	24-Oct-24	CO-60		<	2.9	
MW-03B	24-Oct-24	ZN-65		<	5.6	Duplicate
MW-03B	24-Oct-24	ZN-65		<	4.9	
MW-03B	24-Oct-24	ZR-NB-95		<	3.6	Duplicate
MW-03B	24-Oct-24	ZR-NB-95		<	3.7	
MW-03B	24-Oct-24	I-131		<	0.474	Duplicate
MW-03B	24-Oct-24	I-131		<	0.422	
MW-03B	24-Oct-24	CS-134		<	4.5	Duplicate
MW-03B	24-Oct-24	CS-134		<	3.5	
MW-03B	24-Oct-24	CS-137		<	2.9	
MW-03B	24-Oct-24	CS-137		<	5.5	Duplicate
MW-03B	24-Oct-24	BA-LA-140		<	3.1	
MW-03B	24-Oct-24	BA-LA-140		<	1.9	Duplicate
MW-03B	24-Oct-24	H-3		<	185	Duplicate
MW-03B	24-Oct-24	H-3		<	185	
MW-03C	27-Mar-24	MN-54		<	4.8	
MW-03C	27-Mar-24	CO-58		<	6	

MW-03C	27-Mar-24	FE-59		<	11.2	
MW-03C	27-Mar-24	CO-60		<	4.5	
MW-03C	27-Mar-24	ZN-65		<	9.7	
MW-03C	27-Mar-24	ZR-NB-95		<	3.2	
MW-03C	27-Mar-24	I-131		<	0.492	
MW-03C	27-Mar-24	CS-134		<	5.4	
MW-03C	27-Mar-24	CS-137		<	3.9	
MW-03C	27-Mar-24	BA-LA-140		<	2.9	
MW-03C	27-Mar-24	H-3		<	175	
MW-03C	19-Jun-24	MN-54		<	3.3	
MW-03C	19-Jun-24	CO-58		<	2.4	
MW-03C	19-Jun-24	FE-59		<	4.7	
MW-03C	19-Jun-24	CO-60		<	3.1	
MW-03C	19-Jun-24	ZN-65		<	5.6	
MW-03C	19-Jun-24	ZR-NB-95		<	2.3	
MW-03C	19-Jun-24	I-131		<	0.314	
MW-03C	19-Jun-24	CS-134		<	4	
MW-03C	19-Jun-24	CS-137		<	4.3	
MW-03C	19-Jun-24	BA-LA-140		<	3.3	
MW-03C	19-Jun-24	H-3		<	185	
MW-03C	12-Sep-24	MN-54		<	3.4	
MW-03C	12-Sep-24	CO-58		<	2.9	
MW-03C	12-Sep-24	FE-59		<	5.5	
MW-03C	12-Sep-24	CO-60		<	2.7	
MW-03C	12-Sep-24	ZN-65		<	5.1	
MW-03C	12-Sep-24	ZR-NB-95		<	2.2	

MW-03C	12-Sep-24	I-131		<	0.299	
MW-03C	12-Sep-24	CS-134		<	4.2	
MW-03C	12-Sep-24	CS-137		<	5.3	
MW-03C	12-Sep-24	BA-LA-140		<	3.6	
MW-03C	12-Sep-24	H-3		<	180	
MW-03C	24-Oct-24	MN-54		<	3.8	
MW-03C	24-Oct-24	CO-58		<	1.6	
MW-03C	24-Oct-24	FE-59		<	7.6	
MW-03C	24-Oct-24	CO-60		<	3.6	
MW-03C	24-Oct-24	ZN-65		<	5.9	
MW-03C	24-Oct-24	ZR-NB-95		<	2.7	
MW-03C	24-Oct-24	I-131		<	0.414	
MW-03C	24-Oct-24	CS-134		<	4.2	
MW-03C	24-Oct-24	CS-137		<	5	
MW-03C	24-Oct-24	BA-LA-140		<	1.6	
MW-03C	24-Oct-24	H-3		<	185	
MW-05C	27-Mar-24	MN-54		<	2.4	
MW-05C	27-Mar-24	CO-58		<	2.2	
MW-05C	27-Mar-24	FE-59		<	6.1	
MW-05C	27-Mar-24	CO-60		<	2.3	
MW-05C	27-Mar-24	ZN-65		<	4.8	
MW-05C	27-Mar-24	ZR-NB-95		<	2.7	
MW-05C	27-Mar-24	I-131		<	0.451	
MW-05C	27-Mar-24	CS-134		<	2.4	
MW-05C	27-Mar-24	CS-137		<	2.3	
MW-05C	27-Mar-24	BA-LA-140		<	2	

MW-05C	27-Mar-24	H-3		<	175	
MW-05C	19-Jun-24	MN-54		<	1.2	
MW-05C	19-Jun-24	CO-58		<	1.1	
MW-05C	19-Jun-24	FE-59		<	1.2	
MW-05C	19-Jun-24	CO-60		<	1.4	
MW-05C	19-Jun-24	ZN-65		<	1.7	
MW-05C	19-Jun-24	ZR-NB-95		<	1.1	
MW-05C	19-Jun-24	I-131		<	0.375	
MW-05C	19-Jun-24	CS-134		<	1.1	
MW-05C	19-Jun-24	CS-137		<	1.6	
MW-05C	19-Jun-24	BA-LA-140		<	0.8	
MW-05C	19-Jun-24	H-3		<	185	
MW-05C	12-Sep-24	MN-54		<	3.1	
MW-05C	12-Sep-24	CO-58		<	2.7	
MW-05C	12-Sep-24	FE-59		<	6.3	
MW-05C	12-Sep-24	CO-60		<	3	
MW-05C	12-Sep-24	ZN-65		<	6.7	
MW-05C	12-Sep-24	ZR-NB-95		<	2.1	
MW-05C	12-Sep-24	I-131		<	0.416	
MW-05C	12-Sep-24	CS-134		<	3.5	
MW-05C	12-Sep-24	CS-137		<	4.4	
MW-05C	12-Sep-24	BA-LA-140		<	2.2	
MW-05C	12-Sep-24	H-3		<	180	
MW-05C	24-Oct-24	MN-54		<	3.8	
MW-05C	24-Oct-24	CO-58		<	2.3	
MW-05C	24-Oct-24	FE-59		<	6.1	

MW-05C	24-Oct-24	CO-60		<	5.5	
MW-05C	24-Oct-24	ZN-65		<	4.6	
MW-05C	24-Oct-24	ZR-NB-95		<	3.9	
MW-05C	24-Oct-24	I-131		<	0.461	
MW-05C	24-Oct-24	CS-134		<	4	
MW-05C	24-Oct-24	CS-137		<	4.3	
MW-05C	24-Oct-24	BA-LA-140		<	2.9	
MW-05C	24-Oct-24	H-3		<	185	
MW-11A	27-Mar-24	MN-54		<	5.2	
MW-11A	27-Mar-24	CO-58		<	2.8	
MW-11A	27-Mar-24	FE-59		<	10.9	
MW-11A	27-Mar-24	CO-60		<	3.2	
MW-11A	27-Mar-24	ZN-65		<	6.5	
MW-11A	27-Mar-24	ZR-NB-95		<	3.9	
MW-11A	27-Mar-24	I-131		<	0.476	
MW-11A	27-Mar-24	CS-134		<	6.9	
MW-11A	27-Mar-24	CS-137		<	3.7	
MW-11A	27-Mar-24	BA-LA-140		<	4.1	
MW-11A	27-Mar-24	H-3		<	175	
MW-11A	19-Jun-24	MN-54		<	0.9	
MW-11A	19-Jun-24	CO-58		<	0.8	
MW-11A	19-Jun-24	FE-59		<	1.7	
MW-11A	19-Jun-24	CO-60		<	0.8	
MW-11A	19-Jun-24	ZN-65		<	1.6	
MW-11A	19-Jun-24	ZR-NB-95		<	1.1	
MW-11A	19-Jun-24	I-131		<	0.342	

MW-11A	19-Jun-24	CS-134		<	0.9	
MW-11A	19-Jun-24	CS-137		<	0.9	
MW-11A	19-Jun-24	BA-LA-140		<	1.3	
MW-11A	19-Jun-24	H-3		<	185	
MW-11A	12-Sep-24	MN-54		<	1.7	
MW-11A	12-Sep-24	CO-58		<	1.6	
MW-11A	12-Sep-24	FE-59		<	4.6	
MW-11A	12-Sep-24	CO-60		<	2.8	
MW-11A	12-Sep-24	ZN-65		<	6.5	
MW-11A	12-Sep-24	ZR-NB-95		<	1.9	
MW-11A	12-Sep-24	I-131		<	0.426	
MW-11A	12-Sep-24	CS-134		<	3.1	
MW-11A	12-Sep-24	CS-137		<	3.4	
MW-11A	12-Sep-24	BA-LA-140		<	2.6	
MW-11A	12-Sep-24	H-3		<	180	
MW-11A	24-Oct-24	MN-54		<	3.3	
MW-11A	24-Oct-24	CO-58		<	2.9	
MW-11A	24-Oct-24	FE-59		<	3	
MW-11A	24-Oct-24	CO-60		<	2.6	
MW-11A	24-Oct-24	ZN-65		<	7.5	
MW-11A	24-Oct-24	ZR-NB-95		<	3.3	
MW-11A	24-Oct-24	I-131		<	0.407	
MW-11A	24-Oct-24	CS-134		<	2.8	
MW-11A	24-Oct-24	CS-137		<	4	
MW-11A	24-Oct-24	BA-LA-140		<	4.6	
MW-11A	24-Oct-24	H-3		<	185	

MW-11B	27-Mar-24	MN-54		<	1.3	
MW-11B	27-Mar-24	CO-58		<	3.3	
MW-11B	27-Mar-24	FE-59		<	4.9	
MW-11B	27-Mar-24	CO-60		<	2.3	
MW-11B	27-Mar-24	ZN-65		<	5.3	
MW-11B	27-Mar-24	ZR-NB-95		<	3.1	
MW-11B	27-Mar-24	I-131		<	0.426	
MW-11B	27-Mar-24	CS-134		<	2.8	
MW-11B	27-Mar-24	CS-137		<	3.2	
MW-11B	27-Mar-24	BA-LA-140		<	3.1	
MW-11B	27-Mar-24	H-3		<	175	
MW-11B	19-Jun-24	MN-54		<	2.7	
MW-11B	19-Jun-24	CO-58		<	2.7	
MW-11B	19-Jun-24	FE-59		<	5.1	
MW-11B	19-Jun-24	CO-60		<	4.5	
MW-11B	19-Jun-24	ZN-65		<	4.3	
MW-11B	19-Jun-24	ZR-NB-95		<	3.5	
MW-11B	19-Jun-24	I-131		<	0.331	
MW-11B	19-Jun-24	CS-134		<	4	
MW-11B	19-Jun-24	CS-137		<	4.3	
MW-11B	19-Jun-24	BA-LA-140		<	2.4	
MW-11B	19-Jun-24	H-3		<	185	
MW-11B	12-Sep-24	MN-54		<	2.7	
MW-11B	12-Sep-24	CO-58		<	3.5	
MW-11B	12-Sep-24	FE-59		<	5.1	
MW-11B	12-Sep-24	CO-60		<	4.4	

MW-11B	12-Sep-24	ZN-65		<	5.7	
MW-11B	12-Sep-24	ZR-NB-95		<	1.9	
MW-11B	12-Sep-24	I-131		<	0.446	
MW-11B	12-Sep-24	CS-134		<	4.1	
MW-11B	12-Sep-24	CS-137		<	4	
MW-11B	12-Sep-24	BA-LA-140		<	2.2	
MW-11B	12-Sep-24	H-3		<	180	
MW-11B	24-Oct-24	MN-54		<	6.1	
MW-11B	24-Oct-24	CO-58		<	3.7	
MW-11B	24-Oct-24	FE-59		<	8.9	
MW-11B	24-Oct-24	CO-60		<	5	
MW-11B	24-Oct-24	ZN-65		<	11.8	
MW-11B	24-Oct-24	ZR-NB-95		<	5.4	
MW-11B	24-Oct-24	I-131		<	0.421	
MW-11B	24-Oct-24	CS-134		<	8.7	
MW-11B	24-Oct-24	CS-137		<	5.4	
MW-11B	24-Oct-24	BA-LA-140		<	7.9	
MW-11B	24-Oct-24	H-3		<	185	
MW-12A	27-Mar-24	MN-54		<	1.4	
MW-12A	27-Mar-24	CO-58		<	2.7	
MW-12A	27-Mar-24	FE-59		<	4	
MW-12A	27-Mar-24	CO-60		<	3	
MW-12A	27-Mar-24	ZN-65		<	5.1	
MW-12A	27-Mar-24	ZR-NB-95		<	3	
MW-12A	27-Mar-24	I-131		<	0.49	
MW-12A	27-Mar-24	CS-134		<	2.3	

MW-12A	27-Mar-24	CS-137		<	2.7	
MW-12A	27-Mar-24	BA-LA-140		<	4.7	
MW-12A	27-Mar-24	H-3	209	+/-	93	
MW-12A	19-Jun-24	MN-54		<	1.9	
MW-12A	19-Jun-24	CO-58		<	1.8	
MW-12A	19-Jun-24	FE-59		<	3	
MW-12A	19-Jun-24	CO-60		<	2.2	
MW-12A	19-Jun-24	ZN-65		<	4.5	
MW-12A	19-Jun-24	ZR-NB-95		<	1.9	
MW-12A	19-Jun-24	I-131		<	0.466	
MW-12A	19-Jun-24	CS-134		<	2.1	
MW-12A	19-Jun-24	CS-137		<	1.1	
MW-12A	19-Jun-24	BA-LA-140		<	1.8	
MW-12A	19-Jun-24	H-3		<	185	
MW-12A	12-Sep-24	MN-54		<	6.5	
MW-12A	12-Sep-24	CO-58		<	3.8	
MW-12A	12-Sep-24	FE-59		<	5.5	
MW-12A	12-Sep-24	CO-60		<	6	
MW-12A	12-Sep-24	ZN-65		<	10	
MW-12A	12-Sep-24	ZR-NB-95		<	4.1	
MW-12A	12-Sep-24	I-131		<	0.471	
MW-12A	12-Sep-24	CS-134		<	6.2	
MW-12A	12-Sep-24	CS-137		<	7	
MW-12A	12-Sep-24	BA-LA-140		<	5.7	
MW-12A	12-Sep-24	H-3		<	180	
MW-12A	24-Oct-24	MN-54		<	3.9	

MW-12A	24-Oct-24	CO-58		<	6	
MW-12A	24-Oct-24	FE-59		<	11.2	
MW-12A	24-Oct-24	CO-60		<	6.8	
MW-12A	24-Oct-24	ZN-65		<	4.2	
MW-12A	24-Oct-24	ZR-NB-95		<	5	
MW-12A	24-Oct-24	I-131		<	0.471	
MW-12A	24-Oct-24	CS-134		<	6.8	
MW-12A	24-Oct-24	CS-137		<	7.1	
MW-12A	24-Oct-24	BA-LA-140		<	5.8	
MW-12A	24-Oct-24	H-3		<	185	
MW-12B	27-Mar-24	MN-54		<	1.7	
MW-12B	27-Mar-24	CO-58		<	2.7	
MW-12B	27-Mar-24	FE-59		<	7.6	
MW-12B	27-Mar-24	CO-60		<	4.1	
MW-12B	27-Mar-24	ZN-65		<	3.5	
MW-12B	27-Mar-24	ZR-NB-95		<	3.1	
MW-12B	27-Mar-24	I-131		<	0.484	
MW-12B	27-Mar-24	CS-134		<	3.2	
MW-12B	27-Mar-24	CS-137		<	4.4	
MW-12B	27-Mar-24	BA-LA-140		<	3.8	
MW-12B	27-Mar-24	H-3		<	175	
MW-12B	19-Jun-24	MN-54		<	1	
MW-12B	19-Jun-24	CO-58		<	0.9	
MW-12B	19-Jun-24	FE-59		<	1.7	
MW-12B	19-Jun-24	CO-60		<	0.9	
MW-12B	19-Jun-24	ZN-65		<	2	

MW-12B	19-Jun-24	ZR-NB-95		<	0.9	
MW-12B	19-Jun-24	I-131		<	0.401	
MW-12B	19-Jun-24	CS-134		<	0.9	
MW-12B	19-Jun-24	CS-137		<	1	
MW-12B	19-Jun-24	BA-LA-140		<	1	
MW-12B	19-Jun-24	H-3		<	185	
MW-12B	12-Sep-24	MN-54		<	2.5	
MW-12B	12-Sep-24	CO-58		<	2.8	
MW-12B	12-Sep-24	FE-59		<	5.1	
MW-12B	12-Sep-24	CO-60		<	1.8	
MW-12B	12-Sep-24	ZN-65		<	7	
MW-12B	12-Sep-24	ZR-NB-95		<	2.8	
MW-12B	12-Sep-24	I-131		<	0.458	
MW-12B	12-Sep-24	CS-134		<	3	
MW-12B	12-Sep-24	CS-137		<	2.3	
MW-12B	12-Sep-24	BA-LA-140		<	4.6	
MW-12B	12-Sep-24	H-3		<	180	
MW-12B	24-Oct-24	MN-54		<	3.1	
MW-12B	24-Oct-24	CO-58		<	1.7	
MW-12B	24-Oct-24	FE-59		<	5	
MW-12B	24-Oct-24	CO-60		<	3	
MW-12B	24-Oct-24	ZN-65		<	6.2	
MW-12B	24-Oct-24	ZR-NB-95		<	3.2	
MW-12B	24-Oct-24	I-131		<	0.49	
MW-12B	24-Oct-24	CS-134		<	3.8	
MW-12B	24-Oct-24	CS-137		<	4.1	

MW-12B	24-Oct-24	BA-LA-140		<	2.9	
MW-12B	24-Oct-24	H-3		<	185	
MW-13	27-Mar-24	MN-54		<	2.5	
MW-13	27-Mar-24	CO-58		<	2.5	
MW-13	27-Mar-24	FE-59		<	4.2	
MW-13	27-Mar-24	CO-60		<	3.3	
MW-13	27-Mar-24	ZN-65		<	5.5	
MW-13	27-Mar-24	ZR-NB-95		<	3.1	
MW-13	27-Mar-24	I-131		<	0.441	
MW-13	27-Mar-24	CS-134		<	3	
MW-13	27-Mar-24	CS-137		<	3.2	
MW-13	27-Mar-24	BA-LA-140		<	2	
MW-13	27-Mar-24	H-3		<	175	
MW-13	19-Jun-24	MN-54		<	4.4	
MW-13	19-Jun-24	CO-58		<	3.4	
MW-13	19-Jun-24	FE-59		<	5.3	
MW-13	19-Jun-24	CO-60		<	3.4	
MW-13	19-Jun-24	ZN-65		<	6.6	
MW-13	19-Jun-24	ZR-NB-95		<	4.4	
MW-13	19-Jun-24	I-131		<	0.376	
MW-13	19-Jun-24	CS-134		<	6.4	
MW-13	19-Jun-24	CS-137		<	5.2	
MW-13	19-Jun-24	BA-LA-140		<	5.4	
MW-13	19-Jun-24	H-3		<	185	
MW-13	12-Sep-24	MN-54		<	2.7	
MW-13	12-Sep-24	CO-58		<	1.8	

MW-13	12-Sep-24	FE-59		<	5.8	
MW-13	12-Sep-24	CO-60		<	2.1	
MW-13	12-Sep-24	ZN-65		<	6.2	
MW-13	12-Sep-24	ZR-NB-95		<	2.7	
MW-13	12-Sep-24	I-131		<	0.385	
MW-13	12-Sep-24	CS-134		<	3.3	
MW-13	12-Sep-24	CS-137		<	3.6	
MW-13	12-Sep-24	BA-LA-140		<	2.9	
MW-13	12-Sep-24	H-3		<	180	
MW-13	24-Oct-24	MN-54		<	2.1	
MW-13	24-Oct-24	CO-58		<	1.8	
MW-13	24-Oct-24	FE-59		<	5.1	
MW-13	24-Oct-24	CO-60		<	2.1	
MW-13	24-Oct-24	ZN-65		<	4	
MW-13	24-Oct-24	ZR-NB-95		<	4	
MW-13	24-Oct-24	I-131		<	0.385	
MW-13	24-Oct-24	CS-134		<	3.3	
MW-13	24-Oct-24	CS-137		<	3.2	
MW-13	24-Oct-24	BA-LA-140		<	3	
MW-13	24-Oct-24	H-3		<	185	
MW-14	27-Mar-24	MN-54		<	5.3	
MW-14	27-Mar-24	CO-58		<	3	
MW-14	27-Mar-24	FE-59		<	3.6	
MW-14	27-Mar-24	CO-60		<	4.6	
MW-14	27-Mar-24	ZN-65		<	10.1	
MW-14	27-Mar-24	ZR-NB-95		<	2.8	

MW-14	27-Mar-24	I-131		<	0.429	
MW-14	27-Mar-24	CS-134		<	5.1	
MW-14	27-Mar-24	CS-137		<	5.1	
MW-14	27-Mar-24	BA-LA-140		<	6.8	
MW-14	27-Mar-24	H-3		<	175	
MW-14	19-Jun-24	MN-54		<	1.9	
MW-14	19-Jun-24	CO-58		<	3	
MW-14	19-Jun-24	FE-59		<	4.3	
MW-14	19-Jun-24	CO-60		<	1.9	
MW-14	19-Jun-24	ZN-65		<	5.3	
MW-14	19-Jun-24	ZR-NB-95		<	2.9	
MW-14	19-Jun-24	I-131		<	0.404	
MW-14	19-Jun-24	CS-134		<	3.2	
MW-14	19-Jun-24	CS-137		<	2.9	
MW-14	19-Jun-24	BA-LA-140		<	3.2	
MW-14	19-Jun-24	H-3		<	185	
MW-14	12-Sep-24	MN-54		<	2.6	
MW-14	12-Sep-24	CO-58		<	3.7	
MW-14	12-Sep-24	FE-59		<	5.9	
MW-14	12-Sep-24	CO-60		<	2	
MW-14	12-Sep-24	ZN-65		<	6.8	
MW-14	12-Sep-24	ZR-NB-95		<	3.5	
MW-14	12-Sep-24	I-131		<	0.372	
MW-14	12-Sep-24	CS-134		<	3.6	
MW-14	12-Sep-24	CS-137		<	3	
MW-14	12-Sep-24	BA-LA-140		<	5.3	

MW-14	12-Sep-24	H-3		<	180	
MW-14	24-Oct-24	MN-54		<	2.7	
MW-14	24-Oct-24	CO-58		<	2.9	
MW-14	24-Oct-24	FE-59		<	5.7	
MW-14	24-Oct-24	CO-60		<	2.9	
MW-14	24-Oct-24	ZN-65		<	5.5	
MW-14	24-Oct-24	ZR-NB-95		<	2.2	
MW-14	24-Oct-24	I-131		<	0.485	
MW-14	24-Oct-24	CS-134		<	2.8	
MW-14	24-Oct-24	CS-137		<	3.2	
MW-14	24-Oct-24	BA-LA-140		<	3.7	
MW-14	24-Oct-24	H-3		<	185	
MW-15	27-Mar-24	MN-54		<	2.5	
MW-15	27-Mar-24	CO-58		<	2.3	
MW-15	27-Mar-24	FE-59		<	5	
MW-15	27-Mar-24	CO-60		<	2.7	
MW-15	27-Mar-24	ZN-65		<	4.6	
MW-15	27-Mar-24	ZR-NB-95		<	3.2	
MW-15	27-Mar-24	I-131		<	0.396	
MW-15	27-Mar-24	CS-134		<	2.4	
MW-15	27-Mar-24	CS-137		<	2.5	
MW-15	27-Mar-24	BA-LA-140		<	2.1	
MW-15	27-Mar-24	H-3		<	175	
MW-15	19-Jun-24	MN-54		<	2.4	
MW-15	19-Jun-24	CO-58		<	2.8	
MW-15	19-Jun-24	FE-59		<	2.9	

MW-15	19-Jun-24	CO-60		<	1.9	
MW-15	19-Jun-24	ZN-65		<	3.9	
MW-15	19-Jun-24	ZR-NB-95		<	2.2	
MW-15	19-Jun-24	I-131		<	0.4	
MW-15	19-Jun-24	CS-134		<	2.9	
MW-15	19-Jun-24	CS-137		<	3.5	
MW-15	19-Jun-24	BA-LA-140		<	2.8	
MW-15	19-Jun-24	H-3		<	185	
MW-15	12-Sep-24	MN-54		<	2.2	Duplicate
MW-15	12-Sep-24	MN-54		<	1.6	
MW-15	12-Sep-24	CO-58		<	2.3	
MW-15	12-Sep-24	CO-58		<	2.1	Duplicate
MW-15	12-Sep-24	FE-59		<	2.9	
MW-15	12-Sep-24	FE-59		<	2.8	Duplicate
MW-15	12-Sep-24	CO-60		<	3.4	
MW-15	12-Sep-24	CO-60		<	1.6	Duplicate
MW-15	12-Sep-24	ZN-65		<	4.3	
MW-15	12-Sep-24	ZN-65		<	4	Duplicate
MW-15	12-Sep-24	ZR-NB-95		<	2.6	
MW-15	12-Sep-24	ZR-NB-95		<	2.5	Duplicate
MW-15	12-Sep-24	I-131		<	0.362	Duplicate
MW-15	12-Sep-24	I-131		<	0.369	
MW-15	12-Sep-24	CS-134		<	2.8	
MW-15	12-Sep-24	CS-134		<	2.1	Duplicate
MW-15	12-Sep-24	CS-137		<	3	
MW-15	12-Sep-24	CS-137		<	2.2	Duplicate

MW-15	12-Sep-24	BA-LA-140		<	2.3	Duplicate
MW-15	12-Sep-24	BA-LA-140		<	1.4	
MW-15	12-Sep-24	H-3		<	186	Duplicate
MW-15	12-Sep-24	H-3		<	186	
MW-15	24-Oct-24	MN-54		<	0.9	
MW-15	24-Oct-24	CO-58		<	1.2	
MW-15	24-Oct-24	FE-59		<	1.5	
MW-15	24-Oct-24	CO-60		<	1	
MW-15	24-Oct-24	ZN-65		<	2.3	
MW-15	24-Oct-24	ZR-NB-95		<	1.5	
MW-15	24-Oct-24	I-131		<	0.495	
MW-15	24-Oct-24	CS-134		<	1.3	
MW-15	24-Oct-24	CS-137		<	1.5	
MW-15	24-Oct-24	BA-LA-140		<	1.7	
MW-15	24-Oct-24	H-3		<	185	
MW-16	27-Mar-24	MN-54		<	1.2	
MW-16	27-Mar-24	CO-58		<	2.4	
MW-16	27-Mar-24	FE-59		<	4.7	
MW-16	27-Mar-24	CO-60		<	3.1	
MW-16	27-Mar-24	ZN-65		<	4.1	
MW-16	27-Mar-24	ZR-NB-95		<	2.4	
MW-16	27-Mar-24	I-131		<	0.467	
MW-16	27-Mar-24	CS-134		<	2.3	
MW-16	27-Mar-24	CS-137		<	3	
MW-16	27-Mar-24	BA-LA-140		<	4.3	
MW-16	27-Mar-24	H-3		<	175	

MW-16	19-Jun-24	MN-54		<	6.6	
MW-16	19-Jun-24	CO-58		<	2.8	
MW-16	19-Jun-24	FE-59		<	9.1	
MW-16	19-Jun-24	CO-60		<	3.4	
MW-16	19-Jun-24	ZN-65		<	8	
MW-16	19-Jun-24	ZR-NB-95		<	4.6	
MW-16	19-Jun-24	I-131		<	0.417	
MW-16	19-Jun-24	CS-134		<	6.9	
MW-16	19-Jun-24	CS-137		<	6.1	
MW-16	19-Jun-24	BA-LA-140		<	3.2	
MW-16	19-Jun-24	H-3		<	185	
MW-16	12-Sep-24	MN-54		<	1.9	
MW-16	12-Sep-24	CO-58		<	1.9	
MW-16	12-Sep-24	FE-59		<	3.9	
MW-16	12-Sep-24	CO-60		<	1.9	
MW-16	12-Sep-24	ZN-65		<	5.4	
MW-16	12-Sep-24	ZR-NB-95		<	2.3	
MW-16	12-Sep-24	I-131		<	0.445	
MW-16	12-Sep-24	CS-134		<	2.2	
MW-16	12-Sep-24	CS-137		<	2.2	
MW-16	12-Sep-24	BA-LA-140		<	2.3	
MW-16	12-Sep-24	H-3		<	180	
MW-16	24-Oct-24	MN-54		<	3.1	
MW-16	24-Oct-24	CO-58		<	2.7	
MW-16	24-Oct-24	FE-59		<	5.1	
MW-16	24-Oct-24	CO-60		<	4.1	

MW-16	24-Oct-24	ZN-65		<	5.3	
MW-16	24-Oct-24	ZR-NB-95		<	2.6	
MW-16	24-Oct-24	I-131		<	0.465	
MW-16	24-Oct-24	CS-134		<	3.5	
MW-16	24-Oct-24	CS-137		<	4.1	
MW-16	24-Oct-24	BA-LA-140		<	1.8	
MW-16	24-Oct-24	H-3		<	185	
MW-17	27-Mar-24	MN-54		<	3.7	
MW-17	27-Mar-24	CO-58		<	2.7	
MW-17	27-Mar-24	FE-59		<	5.1	
MW-17	27-Mar-24	CO-60		<	3.3	
MW-17	27-Mar-24	ZN-65		<	4.6	
MW-17	27-Mar-24	ZR-NB-95		<	4.1	
MW-17	27-Mar-24	I-131		<	0.499	
MW-17	27-Mar-24	CS-134		<	3	
MW-17	27-Mar-24	CS-137		<	4	
MW-17	27-Mar-24	BA-LA-140		<	2.1	
MW-17	27-Mar-24	H-3		<	175	
MW-17	19-Jun-24	MN-54		<	2.6	
MW-17	19-Jun-24	CO-58		<	2.6	
MW-17	19-Jun-24	FE-59		<	5.8	
MW-17	19-Jun-24	CO-60		<	2.7	
MW-17	19-Jun-24	ZN-65		<	5.1	
MW-17	19-Jun-24	ZR-NB-95		<	3.4	
MW-17	19-Jun-24	I-131		<	0.398	
MW-17	19-Jun-24	CS-134		<	2.9	

MW-17	19-Jun-24	CS-137		<	2.9	
MW-17	19-Jun-24	BA-LA-140		<	3.3	
MW-17	19-Jun-24	H-3		<	185	
MW-17	12-Sep-24	MN-54		<	1.2	
MW-17	12-Sep-24	CO-58		<	2.4	
MW-17	12-Sep-24	FE-59		<	4.9	
MW-17	12-Sep-24	CO-60		<	2.1	
MW-17	12-Sep-24	ZN-65		<	3.4	
MW-17	12-Sep-24	ZR-NB-95		<	1.9	
MW-17	12-Sep-24	I-131		<	0.453	
MW-17	12-Sep-24	CS-134		<	2.1	
MW-17	12-Sep-24	CS-137		<	2.1	
MW-17	12-Sep-24	BA-LA-140		<	2.8	
MW-17	12-Sep-24	H-3		<	180	
MW-17	24-Oct-24	MN-54		<	3.2	
MW-17	24-Oct-24	CO-58		<	2.5	
MW-17	24-Oct-24	FE-59		<	3.3	
MW-17	24-Oct-24	CO-60		<	2.2	
MW-17	24-Oct-24	ZN-65		<	5	
MW-17	24-Oct-24	ZR-NB-95		<	2.8	
MW-17	24-Oct-24	I-131		<	0.475	
MW-17	24-Oct-24	CS-134		<	2.8	
MW-17	24-Oct-24	CS-137		<	3.3	
MW-17	24-Oct-24	BA-LA-140		<	2.8	
MW-17	24-Oct-24	H-3		<	185	

ENCLOSURES TO WCGS
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

Enclosure I contains the *Offsite Dose Calculation Manual*, AP 07B-003, Revision 10

Enclosure II contains the *Offsite Dose Calculation Manual (Radiological Environmental Monitoring Program)*, AP 07B-004, Revision 23

Enclosure III contains the *Solid Radwaste Process Control Program*, AP 31A-100, Revision 9

Note: Since enclosures have not changed from last report, they are not being included with this transmittal.