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10 CFR 50.4

June 25, 2024

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

Subject: Groundwater Protection Initiative – Voluntary Special Report for Tritium Levels

Arkansas Nuclear One – Units 1 and 2  
NRC Docket Nos. 50-313 and 50-368  
Renewed Facility Operating License Nos. DPR-51 and NPF-6

This voluntary 30-day report is being made in accordance with Nuclear Energy Institute (NEI) 07-07, Rev. 1, Industry Ground Water Protection Initiative - Final Guidance. On June 3, 2024, Arkansas Nuclear One (ANO) received the results from a well sample which indicated a tritium level of 335,500 picocuries per liter (pCi/L). An additional sample was collected on June 12, 2024, which had a tritium level of 1,028,000 pCi/L. This tritium level exceeds the ANO Offsite Dose Calculation Manual (ODCM) threshold value for a potential drinking water pathway and constitutes voluntary reporting in accordance with NEI 07-07.

The source of the elevated tritium levels is associated with the overflow of 440 gallons of the Borated Water Storage Tank (BWST) inventory which occurred on May 11, 2024. An 8-hour Event Notification (EN) 57123 was made to the NRC in accordance with 10 CFR 50.72(b)(2)(xi) as a result of notifying the State of Arkansas. Assuming all 440 gallons was released to the discharge canal during the time of overflow, the attributable tritium dose was 1.41E-07 millirem (mrem).

ANO has taken immediate actions by excavating the affected soil. The site then placed a herculite tarp over the excavated area to minimize or prevent stormwater runoff. In addition, sump pumps were installed on top of the herculite tarp to pump captured stormwater and routed to ODCM-approved effluent pathways. On June 20, 2024, a permanent concrete cap was poured over the area to prevent any remaining isotopes in the soil from being washed away during storm events.

ANO continues to monitor the groundwater table for both tritium and gamma radionuclides. Due to their particulate nature, gamma radionuclides are not expected to migrate through the soil. Therefore, it is not expected to see gamma radionuclides exit the site boundary. A new

monitoring well in the groundwater flow path has been installed where groundwater may enter Lake Dardanelle. The new well will allow ANO to monitor potential dose to the public should the tritium migrate. However, ANO will include all tritium dose attributed to this event in one release (1.41 E-07 mrem) in the site's annual effluent report.

There are no new commitments contained in this letter.

Should you have any questions or require additional information related to this report, please contact Garen Holman, Acting Chemistry Manager, at (479) 858-4431.

Respectfully,

A handwritten signature in black ink, appearing to read "Riley Keele". The signature is fluid and cursive, with a large initial "R" and "K".

Riley Keele

RDK/dkb

cc: NRC Region IV Regional Administrator  
NRC Senior Resident Inspector – Arkansas Nuclear One  
NRC Project Manager – Arkansas Nuclear One  
NRC Document Control Desk  
State of Arkansas