U.S. NUCLEAR REGULATORY COMMISSION AUDIT PLAN REGARDING ZION*SOLUTIONS*' RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION RELATED TO PARTIAL SITE RELEASE AND RECENT SITE SURVEY ACTIVITIES

(CAC/EPID NOS. 000083/05000295/L-2017-DTP-0006, 000083/05000304/L-2017-DTP-0007)

LICENSEE INFORMATION

Licensee: ZionSolutions, LLC

Plant Name(s) and Unit(s): Zion Nuclear Power Station, Units 1 and 2

Docket No(s): 50-295, 50-304

Background:

The Zion License Termination Plan (LTP) was approved by the U.S. Nuclear Regulatory Commission (NRC) on September 28, 2018, (Agencywide Documents Access and Management System Accession No. ML18163A313). The LTP provided the details of the plan for characterizing, identifying, and remediating the remaining residual radioactivity at the Zion Nuclear Power Station site to a level that will allow the site to be released for unrestricted use. The LTP also described how the licensee will confirm the extent and success of remediation through radiological surveys, as captured in the final status survey report (FSSR), provide financial assurance to complete decommissioning, and ensure the environmental impacts of the decommissioning activities are within the scope originally envisioned in the associated environmental documents.

The NRC staff is reviewing the FSSRs and the associated partial site release request to ensure that the removal of these 128 survey units from the Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, "Domestic Licensing of Production and Utilization Facilities," license demonstrates the ability of the site, in aggregate, to meet the criteria for unrestricted release contained in Subpart E, "Radiological Criteria for License Termination," of 10 CFR Part 20, "Standards for Protection Against Radiation."

Since 2015, the ZionSolutions, LLC (the licensee) has removed hundreds of discrete radioactive particles (DRPs) across the site that were inadvertently released during decommissioning. During a risk-informed, narrow scope survey performed by the NRC and its contractor in April 2021 (ML21267A523) to evaluate this issue, DRPs containing unexpected radionuclides were found in several unexpected areas. NRC dose estimates for the DRPs had a wide range depending on assumptions. The LTP, approved in 2018, did not include a history of DRPs on the site nor did it address them. Therefore, the objectives of the final status surveys (FSS) were not adequate to detect DRPs and were not sufficient to demonstrate compliance with the criteria for unrestricted release in 10 CFR Part 20[1].

[1] The licensee submitted a license amendment request (LAR) to address DRPs through surveys and a risk/dose assessment in March 2022. The current audit is focused on the responses to the Requests for Additional Information (RAIs) and does not specifically include the LAR.

Based on its review of the FSSRs and the results of the narrow scope DRP survey, the NRC staff determined that additional information was needed to complete its review of FSSRs and approve the partial site release request (i.e., to reach a reasonable assurance determination that the licensee has demonstrated that they meet the criteria in 10 CFR Part 20 for unrestricted release). The NRC described the additional information needed in 11 RAIs dated August 19, 2021 (ML21231A187), and October 14, 2021 (ML21238A067). By letter dated March 8, 2022 (ML22069A329), the licensee submitted its responses to the 11 RAIs.

The goal of this audit is to achieve a more effective and efficient overall review by allowing the staff to perform an abbreviated review and discuss supporting material with the objective of improving communication. Reviewing underlying documentation and engaging in audit discussions about site conditions will facilitate the staff's understanding of the licensee's RAI responses. If the NRC staff identifies information that is needed to support a finding, the licensee will need to submit that information on the docket.

Regulatory Audit Basis:

The basis for the audit is the regulations in Subpart E and Subpart F, "Surveys and Monitoring," of 10 CFR Part 20.

Regulatory Audit Scope:

This audit will focus on information provided by the licensee on the docket and during virtual meetings. The initial set of audit meetings (Audit Phase 1) related to RAIs 1 and 10 will take place over a 3–4-week period beginning at the entrance meeting, with activities occurring intermittently during that period. The meetings may only cover a subset of topics within RAIs 1 and 10, based on discussions and scope, with an emphasis on extent, purpose, and technique of surveys. Detailed discussions of risk assessment techniques (part of RAI 10) may be included if time permits or may be delayed until a future audit phase. Following these meetings, an interim audit report will be issued to document NRC staff conclusions. After the interim audit report related to the responses to RAIs 1 and 10 is finalized, the NRC plans to determine, in coordination with the licensee, which of the remaining RAIs are the most risk-significant to discuss and the order in which to discuss them. Subsequent audits will be scheduled accordingly to address the remaining items, and NRC staff conclusions will be documented in either interim or final audit reports, as appropriate.

Information and Other Material Necessary for the Regulatory Audit:

The licensee should be prepared to provide documents, calculations, and other material, as applicable, supporting the responses provided in its March 8, 2022, submittal. The NRC staff may request that the licensee make additional materials available to facilitate the review of the RAI responses. The NRC intends to request any additional materials needed in advance of the specific audit meetings.

During the entrance meeting, the NRC plans to discuss the "Zion*Solutions* Overview" section of the RAI responses with the licensee to ensure alignment between the NRC and the licensee about the overall intent and purpose of the information needs described in the RAI request and why this information is needed for the NRC to reach a determination that the site conditions are consistent with the unrestricted release criteria in 10 CFR 20.1402, "Radiological criteria for unrestricted use."

Team Assignments:

Kim Conway	Project Manager, responsible for audit logistics and audit report
Greg Chapman	Senior Health Physicist
Leah Parks	Risk Analyst
Karen Pinkston	Risk Analyst
Louis Caponi	Risk Analyst (Training)

Additional audit team members may be added, as necessary.

Logistics:

Phase 1 Start:	July 19, 2022
Phase 1 End:	August 26, 2022

Audit meetings will be scheduled and scoped on an as-needed basis after the entrance meeting and will be scheduled in a way that provides adequate time to support availability by the NRC staff to review the documents prior to subsequent meeting(s) on a particular topic. As noted above, the NRC will also provide requests for additional materials to the licensee in advance of the meetings to allow them adequate time to respond. Audit meetings will take place in a virtual format unless an in-person meeting or site visit is deemed necessary.

Special Requests:

None.

Deliverables:

A regulatory audit summary will be provided within 90 days of the completion of the audit.