March 26, 2015

MEMORANDUM TO: Biweekly Notice Coordinator

FROM: Bruce Watson, Chief **/RA/**
Reactor Decommissioning Branch
Division of Decommissioning, Uranium Recovery,
and Waste Programs
Office of Nuclear Material Safety
and Safeguards

SUBJECT: REQUEST FOR PUBLICATION IN BIWEEKLY FR NOTICE - NOTICE OF CONSIDERATION OF ISSUANCE OF AMENDMENT TO FACILITY OPERATING LICENSE, PROPOSED NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION, AND OPPORTUNITY FOR A HEARING

ZionSolutions LLC, Docket Nos. 50-295 and 50-304, Zion Nuclear Power Station (Zion), Units 1 and 2, Lake County, Illinois

Date of amendment request: December 19, 2014, as supplemented on February 26, 2015

Description of amendment request: The proposed amendment would add License Condition 2.C (17) that approves the License Termination Plan (LTP) and establishes the criteria for determining when changes to the LTP require prior the U.S. Nuclear Regulatory Commission (NRC) approval.

Basis for proposed no significant hazards consideration determination: As required by 10 CFR 50.91(a), the licensee has provided its analysis of the issue of no significant hazards consideration, which is presented below:

(1) Does the change involve a significant increase in the probability or consequences of an accident previously evaluated?

The only remaining accident after fuel transfer is completed in January 2015 is the radwaste handling accident. Calculations were performed to determine the dose at the Exclusion Area Boundary that would result from dropping a High Integrity Container in the former Interim Radwaste Storage Facility (IRSF) such that its entire contents of radioactive, dewatered resin escape. A fraction of the escaped resin is non

mechanistically assumed to be released as airborne radioactivity and pass from the IRSF directly to the environment, resulting in off-site dose consequences. The solid-to-aerosol release fraction is assumed to be the worst case non-mechanistic, mechanically initiated release fraction. The whole body and inhalation dose at the closest point on the Exclusion Area Boundary from the IRSF are then calculated.

The results of the radiological dose consequences for an accident involving the failure of a High Integrity Container show that the projected doses are insignificant in comparison to the 10 CFR 100 guidelines, and are less than the EPA PAGs. The projected dose at the Low Population Zone would be less than at the Exclusion Area Boundary and, since this accident involves an instantaneous release, it is also within the 10 CFR 100 guidelines.

The proposed change does not affect the boundaries used to evaluate compliance with liquid or gaseous effluent limits, and has no impact on plant operations. The proposed changes do not have an adverse impact on the remaining decommissioning activities or any decommissioning related postulated accident consequences.

The proposed changes related to the approval of the LTP do not affect operating procedures or administrative controls that have the function of preventing or mitigating the remaining decommissioning design basis accident. Therefore, the proposed changes do not involve a significant increase in the probability or consequences of any accident previously evaluated.

(2) Does the change create the possibility of a new or different kind of accident from any accident previously evaluated?

The accident analysis for the facility related to decommissioning activities is described in the DSAR. The requested license amendment is consistent with the plant activities described in the DSAR and PSDAR. Thus, the proposed changes do not affect the remaining plant systems, structures, or components in a way not previously evaluated.

There are sections of the LTP that refer to the decommissioning activities still remaining (e.g.; removal of large components, structure removal, etc.). However, these activities are performed in accordance with approved work packages/steps and undergo a 10 CFR 50.59 screening prior to initiation. The proposed amendment merely makes mention of these processes and does not bring about physical changes to the facility.

Therefore, the facility conditions for which the remaining postulated accident has been evaluated is still valid and no new accident scenarios, failure mechanisms, or single failures are introduced by this amendment. The system operating procedures are not affected. Therefore, the proposed changes will not create the possibility of a new or different kind of accident from any accident previously evaluated.

(3) Does the change involve a significant reduction in a margin of safety?

The LTP is a plan for demonstrating compliance with the radiological criteria for license termination as provided in 10 CFR 20.1402 (Reference 5). The margin of safety defined in the statements of consideration for the final rule on the Radiological Criteria for License Termination is described as the margin between the 100 mrem/yr public dose limit established in 10 CFR 20.1301 for licensed operation and the 25 mrem/yr dose limit to the average member of the critical group at a site considered acceptable for unrestricted use (one of the criteria of 10 CFR 20.1402). This margin of safety accounts for the potential effect of multiple sources of radiation exposure to the critical group. Since the License Termination Plan is designed to comply with the radiological criteria for license termination for unrestricted use, the LTP supports this margin of safety.

In addition, the LTP provides the methodologies and criteria that will be used to perform remediation activities of residual radioactivity to demonstrate compliance with the ALARA criterion of 10 CFR 20.1402.

Additionally, the LTP is designed with recognition that (a) the methods in MARSSIM (Multi-Agency Radiation Survey and Site Investigation Manual) (Reference 6) and (b) the building surface contamination levels are not directly applicable to use with complex nonstructural components. Therefore, the LTP states that nonstructural components remaining in buildings (e.g., pumps, heat exchangers, etc.) will be evaluated against the criteria of Regulatory Guide 1.86 (Reference 7) to determine if the components can be released for unrestricted use. The LTP also states that materials, surveyed and evaluated as a-part of normal decommissioning activities and prior to implementation of the final radiation surveys, will be surveyed for release using current site procedures to demonstrate compliance with the "no detectable" criteria. Such materials that do not pass these criteria will be controlled as contaminated.

Also, as previously discussed, the bounding accident for decommissioning is the resin container accident. Since the bounding decommissioning accident results in more airborne radioactivity than can be released from other decommissioning events, the margin of safety associated with the consequences of decommissioning accidents is not reduced by this activity.

Thus, the proposed change does not involve a significant reduction in the margin of safety.

The NRC staff has reviewed the licensee's analysis and, based on this review, it appears that the three standards of 10 CFR 50.92(c) are satisfied. Therefore, the NRC staff proposes to determine that the amendment request involves no significant hazards consideration.

Attorney for licensee: Russ Workman, Deputy General Counsel, EnergySolutions, 423 West 300 South, Suite 200, Salt Lake City, UT 84101

NRC Branch Chief: Bruce Watson

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