

10 CFR 50.4(b)(1)

March 8, 2016

ZS-2016-0022

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

Zion Nuclear Power Station, Units 1 and 2
Facility Operating License Nos. DPR-39 and DPR-48
NRC Docket Nos. 50-295 and 50-304

Subject: License Termination Plan Request for Additional Information

References:

- 1) Gerard van Noordennen, *ZionSolutions*, Letter to U.S. Nuclear Regulatory Commission, "License Amendment Request for the License Termination Plan", dated December 19, 2014
- 2) Gerard van Noordennen, *ZionSolutions*, Letter to U.S. Nuclear Regulatory Commission, "License Termination Plan Update of the Site-Specific Decommissioning Costs", dated February 26, 2015
- 3) John B. Hickman, U.S. Nuclear Regulatory Commission, Letter to John Sauger, *ZionSolutions*, "Request for Additional Information Related to the License Termination Plan for Zion Nuclear Power Station, Units 1 and 2," dated December 10, 2015.

The Zion Station License Termination Plan (LTP) was submitted to the U.S Nuclear Regulatory Commission (NRC) for review on December 19, 2014 as documented in Reference 1. Following initial NRC review, a Request for Additional Information (RAI), as documented in Reference 3, was received on December 10, 2015.

Responses to the issues identified in the referenced RAI are provided in Enclosure 1. Supporting references are provided in Enclosure 2. Enclosure 3 contains a preflight report for Enclosures 1 and 2.

Revised LTP pages resulting from the RAI responses will be submitted by April 30, 2016. If you should have any questions regarding this submittal, please contact Robert Yetter at (224) 789-4250.

Respectfully,

for 
Gerard van Noordennen
Vice President Regulatory Affairs

ADD
NRR

Enclosures:

Enclosure 1: RAI Responses

Enclosure 2: Reference Documentation containing:

- RAI 10a, RESRAD Summary and Concentration Reports
- RAI 11a, TSD 14-011 RESRAD Reports
- RAI 18a, List of Piping Penetrations
- TSD-14-010, Rev. 1
- RAI 8.4, ESRI Zion city.pdf
- RAI 8.8 Timeline.pdf
- TSD-11-004, Rev. 0, Ludlum Model 44-10 Detector Sensitivity.pdf
- TSD-13-005, Rev. 1, Reactor Building Units 1 and 2 End State Concrete Surface Areas Volumes.pdf
- TSD-13-006, Rev. 0, RB Units 1 and 2 End State Concrete and Liner Initial Characterization Source Terms and Distributions.pdf
- TSD-14-005, Rev. 0, Backfill Material Specifications.pdf
- TSD-14-009, Rev. 1, Brookhaven National Laboratory: Evaluation of Maximum Radionuclide groundwater Concentrations for Basement Fill Model.pdf
- TSD-14-013, Rev. 0, Zion Auxiliary Building End State Estimated Concrete Volumes Surface Areas and Source Terms.pdf
- TSD-14-14, Rev.1, End State Surface Areas Volumes and Source Terms of Ancillary Structures.pdf
- TSD-14-015, Rev. 1, Buried Pipe Dose Modeling and DCGLs.pdf
- TSD-14-031, Rev. 0, BNL Basement Fill Model Eval of Max Radionuclide Concentrations for Initial Suite of Radionuclides.pdf
- ZS-LT-300-001-001, Rev.2, FRS Package Development.pdf
- ZS-LT-300-001-003, Rev. 2, Isolation and Control for Final Radiation Survey.pdf
- ZS-LT-300-001-004, Rev. 2, Rev. 2, FRS Data Assessment.pdf
- ZS-LT-400-001-001, Rev. 3, Unconditional Release Materials, Equipment and Secondary Structures.pdf

Enclosure 3: Preflight Report for Enclosures 1 and 2 to this submittal

cc: John Hickman, U.S. NRC Senior Project Manager (2 copies of the enclosures)
Regional Administrator, U.S. NRC, Region III (1 copy of the enclosures)
Service List (Cover letter only, no enclosures)

Zion Nuclear Power Station, Unit 1 and 2 License Transfer Service List

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Enclosure 1

RAI Responses

PDF file on attached CD

Enclosure 2

Reference Documentation

PDF files on attached CD

Enclosure 3
Preflight Report
for
Enclosure 1 & 2 to this submittal

This document serves as preflight report for Enclosure 1 & 2 to the letter ZS-2016-0022. The following files do not pass pre-flight criteria or do not meet NRC criteria, but text is word searchable with clarity/legibility of high quality.

File Name	Preflight Status	Reason
ZS-2016-0022_LTP RAIs Enclosure 1		
ZS-2016-0022_LTP RAIs Enclosure 1	Error / Failed	Document contains images < 300 ppi, clear and legible
ZS-2016-0022, LTP RAIs Enclosure 2		
RAI 8.4 ESRI Zion city	Error / Failed	Document contains logos < 300 ppi, clear and legible
RAI 8.8 Timeline	Passed	
TSD 14-009, Revision 1	Error / Failed	Document contains signatures and scanned pages < 300 ppi, clear and legible
TSD-11-004, Rev. 0 - Ludlum Model 44-10 Detector Sensitivity	Error / Failed	Document contains logos, images, signatures, and scanned pages (unembedded fonts) < 300 ppi, clear and legible
TSD-13-005 Rev. 1, Reactor Building Units 1 2 End State Concrete Surface Areas Volumes	Error / Failed	Document contains logos, scanned images, signatures, and scanned pages < 300 ppi, clear and legible
TSD-13-006, Rev. 0 - RB Units 1 and 2 End State Concrete and Liner Initial Characterization Source Terms and Distributions	Error / Failed	Document contains logos, scanned images < 300 ppi, clear and legible
TSD-14-005, Rev. 0 - Backfill Material Specifications	Error / Failed	Document contains logos, scanned images, signatures, and scanned pages < 300 ppi, clear and legible
TSD-14-013, Rev. 0 - Zion Auxiliary Building End Sate Estimated Concrete Volumes Surface Areas and Source Terms	Error / Failed	Document contains logos, scanned images < 300 ppi, clear and legible
TSD-14-014, Rev . 1 - End State Surface Areas Volumes and Source Terms of Ancillary Structures	Error / Failed	Document contains logos, scanned images, signatures, and scanned pages < 300 ppi, clear and legible
TSD-14-015, Rev. 1 - Buried Pipe Dose Modeling and DCGLs	Error / Failed	Document contains logos, scanned images < 300 ppi, clear and legible

File Name	Preflight Status	Reason
TSD-14-031, Rev. 0 - BNL, Basement Fill Model Eval of Max Radionuclide Concentrations for Initial Suite of Radionuclides	Error / Failed	Document contains logos, scanned images, signatures, and scanned pages < 300 ppi, clear and legible
ZS-LT-300-001-001, Rev. 2 - FRS Package Development	Error / Failed	Document contains signatures and scanned pages < 300 ppi, clear and legible
ZS-LT-300-001-003, Rev. 2 - Isolation and Control For Final Radiation Survey	Error / Failed	Document contains signatures and scanned pages < 300 ppi, clear and legible
ZS-LT-300-001-004, Rev. 2 - FRS Data Assessment	Error / Failed	Document contains signatures and scanned pages < 300 ppi, clear and legible
ZS-LT-400-001-001, Rev. 3, Unconditional Release Materials, Equipment and Secondary Structures	Error / Failed	Document contains signatures and scanned pages < 300 ppi, clear and legible
Folder: RAI 10a, RESRAD Summary and Concentration Reports		
RAI PAB 10 BFM Soil Kd Sensitivity RESRAD Concentration Report	Passed	
RAI PAB 10 BFM Soil Kd Sensitivity RESRAD Summary Report	Passed	
Folder: RAI 11a, TSD 14-011 RESRAD Reports		
Sub-folder: Zion Subsurface Soil 120614		
Zion Subsurface Soil 0.01 120614	Passed	
Zion Subsurface Soil 0.1 120614	Passed	
Zion Subsurface Soil 0.03 120614	Passed	
Zion Subsurface Soil 0.3 120614	Passed	
Zion Subsurface Soil 1.0 120614	Passed	
Zion Subsurface Soil 3.0 120614	Passed	
Zion Subsurface Soil 10 120614	Passed	

File Name	Preflight Status	Reason
Zion Subsurface Soil 30 120614	Passed	
Zion Subsurface Soil 100 120614	Passed	
Zion Subsurface Soil 300 120614	Passed	
Zion Subsurface Soil 1000 120614	Passed	
Zion Subsurface Soil 3000 120614	Passed	
Zion Subsurface Soil 10000 120614	Passed	
Zion Subsurface Soil 64500 +1 120614	Passed	
Zion Subsurface Soil 64500 -1 120614	Passed	
Sub-folder: Zion Surface Soil 120614		
Zion Surface Soil 0.01 120614	Passed	
Zion Surface Soil 0.1 120614	Passed	
Zion Surface Soil 0.03 120614	Passed	
Zion Surface Soil 0.3 120614	Passed	
Zion Surface Soil 1.0 120614	Passed	
Zion Surface Soil 3 120614	Passed	
Zion Surface Soil 10 120614	Passed	
Zion Surface Soil 30 120614	Passed	
Zion Surface Soil 100 120614	Passed	
Zion Surface Soil 300 120614	Passed	
Zion Surface Soil 1000 120614	Passed	
Zion Surface Soil 3000 120614	Passed	

File Name	Preflight Status	Reason
Zion Surface Soil 10000 120614	Passed	
Zion Surface Soil 64500 120614	Passed	
Folder: RAI 18a, List of Piping Penetrations		
C1 to Aux	Passed	
C1 to TB	Passed	
C2 to TB	Passed	
CH to Soil	Passed	
IntraBuilding	Passed	
TB to Aux	Passed	
TB to Soil	Error / Failed	Document contains scanned image < 300 ppi, clear and legible
Folder: TSD-14-010, Rev. 1		
TSD 14-010, Rev. 1 - RESRAD Dose Modeling for Basement Fill Model, Soil DCGL and Calculation of Basement Fill Model Dose Factors	Error / Failed	Document contains logos, color maps signatures, and scanned pages < 300 ppi, clear and legible
Sub-folder: TSD-14-010, Attachment 2		
Co-60 BFM Sensitivity Analysis Report	Passed	
Co-60 BFM Sensitivity Summary Report	Passed	
Cs-134 BFM Sensitivity Analysis Report	Passed	
CS-134 BFM Sensitivity Summary Report	Passed	
Cs-137 BFM Sensitivity Analysis Report	Passed	
Cs-137 BFM Sensitivity Summary Report	Passed	

File Name	Preflight Status	Reason
Eu-152 BFM Sensitivity Analysis Report	Passed	
Eu-152 BFM Sensitivity Summary Report	Passed	
Eu-154 BFM Sensitivity Analysis Report	Passed	
Eu-154 BFM Sensitivity Summary Report	Passed	
H-3 BFM Sensitivity Analysis Report	Passed	
H-3 BFM Sensitivity Summary Report	Passed	
Ni-63 BFM Sensitivity Analysis Report	Passed	
Ni-63 BFM Sensitivity Summary Report	Passed	
Sr-90 BFM Sensitivity Analysis Report	Passed	
Sr-90 BFM Sensitivity Summary Report	Passed	
Sub-folder: TSD-14-010, Attachment 4		
BFM Dose Factor Summary Report 9_8	Passed	
BFM Dose Factor Concentration Report 9_8	Passed	
Co-60 Sensitivity Analysis Report 9_9_14	Passed	
Co-60 Subsurface Soil Sensitivity Analysis Report 9_9_14	Passed	
Cs-134 Sensitivity Analysis Report 9_9_14	Passed	
Cs-134 Subsurface Soil Sensitivity Analysis Report 9_9_14	Passed	
Cs-137 Sensitivity Analysis Report 9_9_14	Passed	
Cs-137 Subsurface Soil Sensitivity Analysis Report 9_9_14	Passed	
Ni-63 Sensitivity Analysis Report 9_9_14	Passed	
Ni-63 Subsurface Soil Sensitivity Analysis Report 9_9_14	Passed	

File Name	Preflight Status	Reason
Sr-90 Sensitivity Analysis Report 9_9_14	Passed	
Sr-90 Subsurface Soil Sensitivity Analysis Report 9_9_14	Passed	
Sub-folder: TSD-14-010, Attachment 10		
Surface Soil 0.15 m Summary Report 12_5_14	Passed	
Subsurface Soil 1m Summary Report 12_5_14	Passed	
Sub-folder: TSD-14-010, Attachment 12		
Concentration Report BFM ROC Screening 12_10_14	Passed	
Summary Report BFM ROC Screening 12_10_14	Passed	
Sub-folder: TSD-14-010, Attachment 13		
Surface Soil AF Initial Suite 0.3m	Passed	
Surface Soil AF Initial Suite 1.0m	Passed	
Surface Soil AF Initial Suite 10m	Passed	
Surface Soil AF Initial Suite 3.0m	Passed	
Surface Soil AF Initial Suite 64500m	Passed	
Sub-folder: TSD-14-010, Attachment 14		
Summary Report Soil ROC Screening	Passed	