UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

January 8, 2014

LICENSEE: Tennessee Valley Authority

FACILITY: Sequoyah Nuclear Plant, Units 1 and 2

SUBJECT: SUMMARY OF TELEPHONE CONFERENCE CALL HELD ON AUGUST 22, 2013, BETWEEN THE U.S. NUCLEAR REGULATORY COMMISSION AND TENNESSEE VALLEY AUTHORITY, CONCERNING REQUESTS FOR ADDITIONAL INFORMATION PERTAINING TO THE SEQUOYAH NUCLEAR PLANT, UNITS 1 AND 2, LICENSE RENEWAL APPLICATION – SET 12 (TAC. NOS. MF0481 AND MF0482)

The U.S. Nuclear Regulatory Commission (NRC) staff and representatives of Tennessee Valley Authority held a telephone conference call on August 22, 2013, to discuss and clarify the staff's requests for additional information (RAIs) concerning the Sequoyah Nuclear Plant, Units 1 and 2, license renewal application. The telephone conference call was useful in clarifying the intent of the staff's RAIs.

Enclosure 1 provides a listing of the participants and Enclosure 2 contains a listing of the RAIs discussed with the applicant, including a brief description on the status of the items.

The applicant had an opportunity to comment on this summary.

For

Richard A. Plasse, Project Manager
Projects Branch 1
Division of License Renewal
Office of Nuclear Reactor Regulation

Docket Nos. 50-327 and 50-328

Enclosures:
1. List of Participants
2. List of Requests for Additional Information

cc w/encls: Listserv

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The U.S. Nuclear Regulatory Commission (NRC) staff and representatives of Tennessee Valley Authority held a telephone conference call on August 19, 2013, to discuss and clarify the staff's requests for additional information (RAIs) concerning the Sequoyah Nuclear Plant, Units 1 and 2, license renewal application. The telephone conference call was useful in clarifying the intent of the staff's RAIs.

Enclosure 1 provides a listing of the participants and Enclosure 2 contains a listing of the RAIs discussed with the applicant, including a brief description on the status of the items.

The applicant had an opportunity to comment on this summary.

/RA by Emmanuel Sayoc for/

Richard A. Plasse, Project Manager
Projects Branch 1
Division of License Renewal
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DATE	12/10/13	12/16/13	12/16/13	1/8/14

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TELEPHONE CONFERENCE CALL
SEQUOYAH NUCLEAR PLANT, UNITS 1 AND 2
LICENSE RENEWAL APPLICATION

LIST OF PARTICIPANTS
AUGUST 22, 2013

PARTICIPANTS	AFFILIATIONS
Richard Plasse	U.S. Nuclear Regulatory Commission (NRC)
Emmanuel Sayoc	NRC
James Medoff	NRC
Duke Nguyen	NRC
Ata Istar	NRC
Alice Erickson	NRC
Bart Fu	NRC
Henry Lee	Tennessee Valley Authority (TVA)
Dennis Lundy	TVA
Andrew Taylor	TVA
Alan Cox	Entergy/Enercon
Stan Bach	Entergy/Enercon

ENCLOSURE 1

REQUESTS FOR ADDITIONAL INFORMATION
SEQUOYAH NUCLEAR PLANT, UNITS 1 AND 2
LICENSE RENEWAL APPLICATION
AUGUST 22, 2013

The U.S. Nuclear Regulatory Commission (NRC) staff and representatives of Tennessee Valley Authority held a telephone conference call on August 22, 2013, to discuss and clarify the following requests for additional information (RAIs) concerning the license renewal application (LRA).

The Sequoyah Nuclear Plant, Units 1 and 2 (SQN), RAIs of Set 12 (ML13238A244) were discussed on August 22, 2013, and a mutually agreeable date for the response to RAI 4.3.1-8 is within 60 days from the date of this letter, and for the rest of the enclosed RAIs, the mutually agreeable date for the response is within 30 days from the date of this letter.

RAI 4.3.1-2– changes were made as marked up below, and a mutual understanding was reached by the staff and the applicant.

Background:

LRA Table 4.3-1 and 4.3-2 lists the projected and analyzed transient cycles for Unit 1 and Unit 2 respectively.

Issue 1:

In LRA Tables 4.3-1 and 4.3-2, the applicant does not identify any past operating experience (i.e., through operations as of November 1, 2011 for the units) for the primary side leak test transient. Specifically, the staff seeks justification on why the LRA does not list at least the following cycle number in the "Cycles as of Nov. 1, 2011" column of the tables for the primary side leak test, a number of past primary side system leak test occurrences equivalent to the total numbers of system leak tests that were performed over the past 31 years for Unit 1 and 30 years for Unit 2 in accordance with the ASME Code Section XI, Examination Category B-P primary side system leak test requirements.

Request 1:

Specifically, for the primary side leak test transient, provide your basis why the "Cycles as of Nov. 1, 2011" column in the tables do not cite a value that is at least as conservative as the total number of primary side leak test performed over the past 31 years for Unit 1 and 30 years for Unit 2 in accordance with the ASME Code Section XI, Examination Category B-P system leak test requirements and possibly during past maintenance outages.

Issue 2:

Since the applicant used the 60-year transient projections to support the disposition of the time-limited aging analyses (TLAAs) evaluated in LRA Sections 4.7.3, the staff requires additional information to determine whether the methodology used in the cycle projection methodology is appropriate.

Request 2:

Justify why LRA Tables 4.3-1 and 4.3-2 do not provide any 60-year cycle projection values for the following design basis transients: (a) the "½ safe shutdown earthquake" transient; (b) the low-temperature overpressure protection actuation; (c) the secondary side hydrostatic test condition transient; and (d) the primary side leak test transient.

RAI 4.3.1-3– changes were made as marked up below, and a mutual understanding was reached by the staff and the applicant.

Background:

LRA Section 4.3.1.4 provides the applicant's metal fatigue TLAAs for the replacement steam generator (SG) components. The applicant provides its cumulative usage factor (CUF) values for these steam generator (SG) components in LRA Table 4.3-6, including the CUF value for the SG U-bend support tree at Unit 1.

Issue:

The LRA indicates that a fatigue analysis was performed for the SG U-bend support tree at Unit 1, but not for the same component at Unit 2.

Request:

Provide the basis why the SG U-bend support tree for Unit 2 had not been subjected to a metal fatigue analysis in the manner that the SG U-bend support tree for Unit 1 had been analyzed for fatigue.

RAI 4.3.1-4– changes were made as marked up below, and a mutual understanding was reached by the staff and the applicant.

Background:

In LRA Section 4.3.1.6, the applicant identifies that the reactor coolant pump (RCP) design includes RCP thermowells that received a CUF analysis, and that the CUF values for the RCP thermowells are negligible. In LRA Section 4.3.1.7, the applicant identifies that the RCS hot legs and cold legs were modified to include thermowells and that the fatigue waiver analyses for the thermowells in the RCS hot legs and cold legs were TLAAs for the LRA.

Issue:

The staff cannot determine whether the RCP thermowells referred to in LRA Section 4.3.1.6 are the same component as any of the thermowells that were referred to in LRA Section 4.3.1.7 for the hot leg and cold leg designs.

Request:

Clarify whether the RCP thermowells referred to in LRA Section 4.3.1.6 are the same as any of the thermowells that were referenced in LRA Section 4.3.1.7 for the RCS hot legs and cold legs. Justify why the current licensing basis (CLB) for the thermowells in the RCS hot legs and cold legs would not need to have included fatigue analyses when a fatigue analysis was required as part of the CLB for the RCP thermowells. Revise LRA Appendix A as appropriate based on the response.

RAI 4.3.1-5– discussed but no changes were made and a mutual understanding was reached by the staff and the applicant.

RAI 4.3.1-6– discussed but no changes were made and a mutual understanding was reached by the staff and the applicant.

RAI 4.3.1-7– discussed but no changes were made and a mutual understanding was reached by the staff and the applicant.

RAI 4.3.1-8– changes were made as marked up below, and a mutual understanding was reached by the staff and the applicant.

Background:

In LRA Table 4.3-12, the applicant provides the CUF-F_{en} results for pressurizer surge lines, including the low-alloy steel pressurizer surge nozzles with the CUF values of 0.49471 and 0.36634, for Units 1 and Unit 2 respectively. Both the USAR and LRA Table 3.1.2-3 identify that the pressurizer surge nozzle-to-safe end welds are made from Alloy 82/182 Inconel materials.

Issue:

It is not clear to the staff whether the pressurizer surge nozzle-to-safe end welds were considered as part of the fatigue analysis for the pressurizer surge nozzles or a separate CUF value was calculated for the pressurizer surge nozzle-to-safe end welds.

Request:

Clarify whether the pressurizer surge nozzle-to-safe end welds were considered to be within the scope of the fatigue analysis for the pressurizer surge nozzles. If the answer to this request is yes, justify why the environmentally-assisted fatigue calculation that was performed on the pressurizer surge nozzle using the methodology in NUREG/CR-6583 for low-alloy steel components would be an acceptable basis for assessing environmentally-assisted fatigue in the pressurizer surge nozzle-to-safe end welds, which are made from nickel alloy materials. If the answer to this request is no, clarify whether the pressurizer surge nozzle-to-safe end welds are in contact with the reactor coolant environment and how the effects of reactor coolant environment on the component fatigue life of the pressurizer surge nozzle-to-safe end welds will be managed during the period of extended operation.

RAI 4.3.2-2– discussed but no changes were made and a mutual understanding was reached by the staff and the applicant.

RAI 4.3.2-3– changes were made as marked up below, and a mutual understanding was reached by the staff and the applicant.

Background:

LRA Section 4.3.2.3 indicates that the CLB includes metal fatigue analyses for the heat exchangers in the chemical and volume control systems (CVCS) and fatigue waiver analyses for the RHR heat exchangers.

Issue:

During the staff's safety audit (March 18-22, 2013) of the aging management program (AMP)s for mechanical systems, the staff noted the CLB includes metal fatigue analyses for the letdown heat exchangers and excessive letdown heat exchangers. However, the applicant has not justified why these fatigue analyses would not need to be identified as TLAAs, when compared to the six criteria in 10 CFR 54.3 for defining a plant analysis as a TLAA.

Request:

1. Clarify how the fatigue analyses for the letdown heat exchangers and excessive letdown heat exchangers compare to the six criteria for TLAAs in 10 CFR 54.3.
2. Based on the response to Part a., clarify and justify whether the fatigue analyses for the letdown heat exchangers and excessive letdown heat exchangers need to be identified as a TLAAs in accordance with requirement in 10 CFR 54.21(c)(1). If the analyses need to be identified as a TLAAs, amend the LRA accordingly and provide the basis for dispositioning the TLAAs in accordance with 10 CFR 54.21(c)(1)(i), (ii), or (iii). Revise LRA Appendix A as appropriate based on the response.
3. Identify whether the CLB includes any other metal fatigue analyses or fatigue waiver analyses for Non-Safety Class 1/Non-Safety Class A heat exchanger components at the plant.
4. If it is determined that the CLB does include additional metal fatigue analyses or fatigue waiver analyses for heat exchanger components, identify each component-specific analysis that was performed as part of the CLB and justify why the applicable analysis would not need to be identified as TLAA in accordance with 10 CFR 54.21(c)(1).

RAI 3.5.1-88– discussed but no changes were made and a mutual understanding was reached by the staff and the applicant.

RAI 3.5.1-2– discussed but no changes were made and a mutual understanding was reached by the staff and the applicant.

RAI 3.5.1-1a (Follow up) – discussed but no changes were made and a mutual understanding was reached by the staff and the applicant.

RAI B.1.6-1a (Follow up) – discussed but no changes were made and a mutual understanding was reached by the staff and the applicant.

RAI B.1.6-1b (Follow-up) – discussed but no changes were made and a mutual understanding was reached by the staff and the applicant.

RAI B.1.6-2a (Follow-up) – discussed but no changes were made and a mutual understanding was reached by the staff and the applicant.

RAI 4.3.2.1 – was deleted from the set due to duplication.

RAI B.1.23-2b – this RAI was added and agreed upon.

Background:

In its July 1, 2013 response to RAI B.1.23-2, the applicant indicated that wear occurred in the thermal sleeves of control rod drive mechanism (CRDM) nozzles due to the interactions with the CRDM nozzles. The CRDM nozzle thermal sleeves may perform the following functions: (1) shielding the CRDM nozzles from thermal transients, (2) providing a lead-in for the rod cluster control assembly (RCCA) drive rods into the CRDM nozzles, and (3) protecting the RCCA drive rods from the head cooling spray cross flow in the reactor vessel upper head plenum region.

Issue:

The applicant's operating experience indicates that wear occurred in these thermal sleeves. The LRA does not address aging management for loss of material due to wear of the CRDM nozzle thermal sleeves.

Request:

The LRA does not address aging management for loss of material due to wear of the CRDM nozzle thermal sleeves. Identify an aging management program for these thermal sleeves and how the applicant's program will adequately manage loss of material due to wear for the CRDM nozzle thermal sleeves.

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