

NRR-PMDAPEm Resource

From: Hon, Andrew
Sent: Thursday, April 28, 2016 10:10 AM
To: Shea, Joseph W; Hess, Thomas A (tahess@tva.gov)
Cc: Beasley, Benjamin; Wheeler, Larry; Hobbs, Nicholas
Subject: Request For Additional Information Sequoyah Nuclear Plant, Units 1 and 2, TS) 3.7.8 ERCW Change to Support Shutdown Board Maintenance, (TAC NO. MF7450 and MF7451)

Mr. Shea:

By application dated March 11, 2016 (Agencywide Document Access and Management System (ADAMS) Accession No. ML16071A333), Tennessee Valley Authority (TVA, the licensee) submitted a license amendment request (LAR) for Sequoyah Nuclear Plant, Units 1 and 2. The proposed LAR would revise the Technical Specification TS 3.7.8, "Essential Raw Cooling Water (ERCW) System," to extend the allowed completion time to restore one ERCW System train to OPERABLE status from 72 hours to 7 days. These changes are needed to facilitate cleaning and inspection of the 6.9 kilovolt (kV) shutdown boards and associated 480 Volt (V) shutdown boards without requiring a dual unit shutdown.

The U.S. Nuclear Regulatory Commission (NRC) staff is reviewing your submittal and has determined that additional information is required to complete the review. The specific information requested is addressed below. The proposed questions were discussed by telephone with your staff on April 25, 2016. Your staff confirmed that these questions did not include proprietary or security-related information and agreed to provide a response in 30 days to this request for additional information (RAI).

The NRC staff considers that timely responses to RAIs help ensure sufficient time is available for staff review and contribute toward the NRC's goal of efficient and effective use of staff resources. Please note that if you do not respond to this request by the agreed-upon date or provide an acceptable alternate date, we may deny your application for amendment under the provisions of Title 10 of the *Code of Federal Regulations*, Section 2.108. If circumstances result in the need to revise the agreed upon response date, please contact me at (301) 415-8480 or via e-mail Andrew.Hon@nrc.gov.

Andy Hon, PE

Project Manager (Brunswick Nuclear Plant 1 & 2, Sequoyah Nuclear Plant 1 & 2)

Plant Licensing Branch II-2

Division of Operating Reactor Licensing

Office of Nuclear Reactor Regulation

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Docket Nos. 50-327 and 50-328

REQUEST FOR ADDITIONAL INFORMATION (RAI)
TECHNICAL SPECIFICATIONS (TS) 3.7.8 CHANGE –
ESSENTIAL RAW COOLING WATER (ERCW) SYSTEM,
(TAC NO. MF7450 and MF7451)

Regulatory Bases: 10CFR50 Appendix A - General Design Criteria. Criterion 44 *Cooling Water*

RAI SBPB- 1

Background:

The amendment proposes to change TS 3.7.8, "Essential Raw Cooling Water (ERCW) System," to extend the allowed completion time to restore one ERCW System train to OPERABLE status from 72 hours to 7 days for planned maintenance for SQN. These changes are needed to facilitate cleaning and inspection of the 6.9 kilovolt (kV) shutdown boards and associated 480 Volt (V) shutdown boards without requiring a dual unit shutdown.

However, the amendment does not clearly state whether physical plant modifications are needed as part of this TS 3.7.8 change.

RAI:

Please confirm if plant modification(s) are needed as part of the proposed TS 3.7.8 change and describe the details of those plant modification(s).

RAI SBPB- 2

Background:

The amendment proposes to change TS 3.7.8, "Essential Raw Cooling Water (ERCW) System," to extend the allowed completion time to restore one ERCW System train to OPERABLE status from 72 hours to 7 days for planned maintenance for SQN. These changes are needed to facilitate cleaning and inspection of the 6.9 kilovolt (kV) shutdown boards and associated 480 Volt (V) shutdown boards without requiring a dual unit shutdown.

However, during the proposed 7 day TS 3.7.8 LCO with one ERCW train inoperable for planned maintenance, the LAR did not describe defense-in-depth strategies employed by plant operations to minimize challenges to the only remaining operable train during the extended completion time of the inoperable train.

RAI:

Please describe the defense-in-depth strategies on how operable equipment (such as electrical buses, emergency diesel generators, switch yard, emergency pumps, etc.) will be protected from maintenance or inadvertent operations that would challenge plant safety.

RAI SBPB- 3

Background:

The amendment proposes to change TS 3.7.8, "Essential Raw Cooling Water (ERCW) System," to extend the allowed completion time to restore one ERCW System train to OPERABLE status from 72 hours to 7 days for planned maintenance for SQN. These changes are needed to facilitate cleaning and inspection of the 6.9 kilovolt (kV) shutdown boards and associated 480 Volt (V) shutdown boards without requiring a dual unit shutdown.

The amendment also proposed that for TS 3.7.8 Action A.1, that certain conditions exists and one ERCW system flow is isolated for planned maintenance at the other unit that is shutdown. For example, while Unit 2 is in operation and Unit 1 is defueled or in Mode 6 with refueling cavity ≥ 23 feet (above top of reactor flange) after defueled, the ERCW system design function for Train A can be met with only one running ERCW pump per train, during a Unit 1 cold shutdown, subject to a maximum ERCW supply temperature of 79° F. The analysis assumptions include that the 1A EDG, 1A CS HX, U1 TDAFW pump, 1A and 1C LCC groups, and 1A IIRC all have no ERCW flow. The analysis also assumed that the yard header, the 16inch Auxiliary Building header, and the 6inch ESF header crossies are in service supported by Train A ERCW.

The amendment stated a margin of up to 100 gallons per minute (gpm) would not affect the results of the Multiflow analysis.

However, the LAR did not state that operational controls are in place to ensure that the valve line-up and other conditions are maintained in the correct state for the 7 day LCO duration.

RAI:

1. Describe if the extensive valve line-ups that support TS 3.7.8 Action A.1, that are described in the proposed Final Safety Analysis Report, insert Page 9.2-10, will be controlled via an Operations Lock-out Program.
2. Describe how valve leakage (> 100 gpm) will be tracked for acceptability for the 7 day duration.
3. Describe the controls in place to maintain the refueling cavity ≥ 23 feet
4. Describe the TS actions required by the station if;
 - a. Unacceptable ERCW flow is determined from any closed boundary valves,
 - b. UHS temperature exceed 79 °F,
 - c. Refueling cavity water level goes lower than 23 feet

RAI SBPB- 4

Background:

The amendment proposes to change TS 3.7.8, "Essential Raw Cooling Water (ERCW) System," to extend the allowed completion time to restore one ERCW System train to OPERABLE status from 72 hours to 7 days for planned maintenance for SQN. These changes are needed to facilitate cleaning and inspection of the 6.9 kilovolt (kV) shutdown boards and associated 480 Volt (V) shutdown boards without requiring a dual unit shutdown. The LAR states that current 72 hours is not adequate to safely clean and inspect a shutdown board and perform corrective maintenance, and a 7 day allowance is proposed.

However, justification is not clearly provided as to why a 7-day time limit is appropriate.

RAI:

- Describe in detail the timeline of planned cleaning and maintenance activities. Address any potential repairs that may require extra time.
- Justify why 7 days is needed, as opposed to a shorter timeline, such as 100 hours.
- Clarify in the proposed TS 3.7.8 Condition “A” with a 7 day completion time is for planned electrical bus maintenance only, as stated in the request.

Hearing Identifier: NRR_PMDA
Email Number: 2808

Mail Envelope Properties (Andrew.Hon@nrc.gov20160428100900)

Subject: Request For Additional Information Sequoyah Nuclear Plant, Units 1 and 2, TS)
3.7.8 ERCW Change to Support Shutdown Board Maintenance, (TAC NO. MF7450 and MF7451)
Sent Date: 4/28/2016 10:09:50 AM
Received Date: 4/28/2016 10:09:00 AM
From: Hon, Andrew

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Post Office:

Files	Size	Date & Time
MESSAGE	7583	4/28/2016 10:09:00 AM

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