Tennessee Valley Authority, Post Office Box 2000, Soddy-Daisy, Tennessee 37384-2000

July 10, 2002

TVA-SQN-TS-02-03 10 CFR 50.90

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D. C. 20555

Gentlemen:

In the Matter of) Docket No. 50-328
Tennessee Valley Authority)

SEQUOYAH NUCLEAR PLANT (SQN) - UNIT 2 - TECHNICAL SPECIFICATION (TS) CHANGE NO. 02-03, ESSENTIAL RAW COOLING WATER (ERCW) OPERABILITY DURING MOVEMENT OF HEAVY LOADS - ONE TIME TS CHANGE IN SUPPORT OF THE STEAM GENERATOR REPLACEMENT PROJECT

References: 1. TVA letter to NRC dated April 15, 2002, "Sequoyah Nuclear Plant, Steam Generator Replacement Project - Topical Report No. 24370-TR-C-002, 'Rigging and Heavy Load Handling' " TAC No. MB5370

2. NRC letter to Entergy Operations Inc. dated September 25, 2000, "Arkansas Nuclear One, Unit Nos. 1 and 2 - Issuance of Amendments Re: Steam Generator Load Handling (TAC Nos. MA6573 and MA6574)"

In accordance with the provisions of 10 CFR 50.90, TVA is submitting a request for an amendment to SQN's License DPR-79 to change the Unit 2 TSs. The proposed change would revise TS Limiting Condition for Operation 3.7.4, "Essential Raw Cooling Water System," to add a one-time provision for

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maintaining operability of this system during performance of heavy load lifts associated with the Unit 1 steam generator replacement (SGR) project. The one-time provision establishes provisions for continued safe operation of Unit 2 when heavy load lifts are performed during Unit 1 SGR activities. In addition, compensatory measures are included to ensure safe shutdown capability for Unit 2 in the unlikely event of a heavy load drop.

The provisions and compensatory measures for heavy load lifts are described in Topical Report 24370-TR-C-002. The topical report was submitted in advance for NRC review and approval by letter dated April 15, 2002 (see reference 1). The topical report contains prerequisite actions for heavy load movement, active monitoring during heavy load movement, and compensatory measures in response to the unlikely event of a heavy load drop. It may be noted that compensatory measures were approved for use during the SGR project at Arkansas Nuclear One, Unit No. 2 (see Reference 2).

TVA has determined that there are no significant hazards considerations associated with the proposed change and that the change is exempt from environmental review pursuant to the provisions of 10 CFR 51.22(c)(9). The SQN Plant Operations Review Committee and the SQN Nuclear Safety Review Board have reviewed this proposed change and determined that operation of SQN Unit 2, in accordance with the proposed change, will not endanger the health and safety of the public. Additionally, in accordance with 10 CFR 50.91(b)(1), TVA is sending a copy of this letter to the Tennessee State Department of Public Health.

Enclosure 1 to this letter provides the description and evaluation of the proposed change. This includes TVA's determination that the proposed change does not involve a significant hazards consideration, and is exempt from environmental review. Enclosure 2 contains a copy of the appropriate TS page from Unit 2 marked-up to show the proposed change. Enclosure 3 forwards the revised TS page for Unit 2 which incorporates the proposed change.

TVA requests NRC review and approval by December 31, 2002, to support the SQN Unit 1 SG replacement outage currently scheduled to begin March 16, 2003. There are no additional commitments contained in this submittal. This letter is

being sent in accordance with NRC RIS 2001-05. If you have any questions about this change, please telephone me at (423) 843-7170 or J. D. Smith at (423) 843-6672.

Sincerely,

Pedro Salas
Licensing and Industry Affairs Manager

Subscribed and sworn to before me
on this 10th day of July

Peggy M Billingsley
Notary Public

My Commission Expires October 9, 2002

Enclosures

ENCLOSURE 1

TENNESSEE VALLEY AUTHORITY
SEQUOYAH NUCLEAR PLANT (SQN)
UNIT 2
DOCKET NO. 328

PROPOSED TECHNICAL SPECIFICATION (TS) CHANGE NO. 02-03
DESCRIPTION AND EVALUATION OF THE PROPOSED CHANGE

I. DESCRIPTION OF THE PROPOSED CHANGE

The proposed license amendment provides a one-time change to the SQN Unit 2 TS. The proposed change revises Limiting Condition for Operation (LCO) 3.7.4, "Essential Raw Cooling Water System," to include provisions for maintaining operability of this system during performance of heavy load lifts associated the Unit 1 steam generator replacement (SGR). The provisions ensure safe operation of Unit 2 when heavy load lifts are performed during Unit 1 SGR activities. In addition, compensatory measures will establish safe shutdown capability for Unit 2 in the event of a postulated heavy load drop affecting the essential raw cooling water (ERCW) system. The proposed one-time TS change is as follows:

"During the Unit 1 Cycle 12 refueling and steam generator replacement outage, lifts of heavy loads are not considered to affect ERCW operability provided the lifts are performed in accordance with Topical Report 24370-TR-C-002 and the prescribed compensatory measures contained within the Topical Report."

As stated in the above change, the details of the heavy load lifts are described and contained in Topical Report 24370-TR-C-002. This report was previously submitted to NRC for review and approval by TVA letter dated April 15, 2002. The topical report supports TVA's proposed TS change.

II. REASON FOR THE PROPOSED CHANGE

The reason for the proposed change is to establish one-time operability requirements for SQN's ERCW system that support operation of Unit 2 during change-out of the Unit 1 steam generators (SGs). TVA has scheduled replacement of the Unit 1 SGs in the spring of 2003. The replacement of the Unit 1 SGs requires heavy load lifts over portions of underground ERCW system piping that

supplies cooling water to safety-related plant equipment/components on Unit 2. These activities are not described in the SQN Updated Final Safety Analysis Report (UFSAR). The technical justification for these activities is described in Topical Report 24370-TR-C-002 that documents specific provisions that will ensure the heavy load handling activities are accomplished safely without impacting operation of Unit 2. Accordingly, an amendment to the SQN TSs is required to implement the provisions described by the topical report.

III. SAFETY ANALYSIS

Four SQN Unit 1 SGs will be replaced during the Unit 1 Cycle 12 refueling outage scheduled for the spring of 2003. The SGR project will utilize a special heavy lift crane (referred to as an Outside Lift System [OLS]) that will be used to lift the old SGs vertically out through the top of the Unit 1 containment structure. The SGR project will involve heavy loads that will traverse over safety-related structures, systems, and components (SSCs) on both units. The SSCs potentially affected by a postulated load drop are described and evaluated in Topical Report 24370-TR-C-002, (Section 6.0).

The OLS for the SGR project is commercially available equipment and is not specifically designed as single failure proof and is not specifically designed to withstand the external events that are part of the SQN licensing basis. Accordingly, the effects of postulated load drops were analyzed for the SQN SGR project in accordance with NUREG-0612, "Control of Heavy Loads at Nuclear Power Plants." An operability issue was identified for heavy load movement during the SGR project that involves the SQN ERCW system. The ERCW system will be supporting operation of Unit 2 during the Unit 1 SGR project. This system is a safety-related system that has piping common to both units. The system supplies cooling water from the Tennessee River (acts as the ultimate heat sink) for the various safety-related components within the plant. The ERCW system is described in Section 9.2.2 of the SQN UFSAR. A postulated load drop from the OLS has the potential for affecting sections of ERCW piping in the load path. The sections of piping affected include the ERCW supply piping (Unit 1, Trains A and B) and/or the ERCW Train A discharge piping (discharge piping common to both units). This piping is routed inside an underground pipe tunnel adjacent to the Unit 1 containment structure. Failure of this ERCW piping due to a postulated load drop could affect operability of safety-related components associated with operation of Unit 2.

The effects of the SGR project on SSCs required for safe operation and safe shutdown capability for Unit 2 is evaluated in Topical Report 24370-TR-C-002. The topical report provides the technical justification for the use of cranes and rigging of heavy loads in support of Unit 1 SGR project and provides the technical basis for the proposed TS change. Mitigation of an assumed load drop requires compensatory measures be implemented to isolate the affected ERCW piping and restore ERCW flow to required equipment. The compensatory measures are NRC commitments in TVA's letter dated April 15, 2002 (contains Topical Report 24370-TR-C-002). It may be noted that compensatory measures have been utilized for SGR projects at other plant sites (i.e., Arkansas Nuclear One, Unit 2). Based on the provisions and compensatory measures described in the topical report, safe operation/safe shutdown capability of Unit 2 is maintained during the heavy load lifts over underground sections of piping associated with SQN's ERCW system.

IV. NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION

TVA has concluded that operation of Sequoyah (SQN) Unit 2, in accordance with the proposed change to Technical Specification (TS) 3/4.7.4, does not involve a significant hazards consideration. TVA's conclusion is based on its evaluation, in accordance with 10 CFR 50.91(a)(1), of the three standards set forth in 10 CFR 50.92(c).

TVA's proposed license amendment is a one-time change to the SQN Unit 2 TSs. The proposed change revises SQN Limiting Condition for Operation 3.7.4, "Essential Raw Cooling Water System," to include provisions for maintaining operability of this system during performance of heavy load lifts associated with the Unit 1 steam generator replacement (SGR) project. The provisions ensure safe operation of Unit 2 during heavy load lift activities. In addition, compensatory measures ensure safe shutdown capability of Unit 2 in the unlikely event a heavy load drop occurs over ERCW system piping.

A. The proposed amendment does not involve a significant increase in the probability or consequences of an accident previously evaluated.

No changes in event classification as discussed in SQN Updated Final Safety Analysis Chapter 15 will occur due to the proposed TS amendment. The one-time TS provision ensures that the SQN essential raw cooling water (ERCW) system remains operable for continued safe operation

of Unit 2 during heavy load lifts performed on Unit 1 during SGR replacement activities.

Accordingly, the proposed modification to SQN Unit 2 TSs and the implementation of compensatory measures for a postulated load drop will not significantly increase the probability or consequences of an accident previously evaluated.

B. <u>The proposed amendment does not create the possibility of a new or different kind of accident from any accident previously evaluated.</u>

The possibility of a new or different accident scenario occurring as a result of activities conducted during the SQN Unit 1 SGR project are not created. Three postulated scenarios related to heavy load handling during the SGR project were examined for their potential to represent a new or different kind of accident from those previously evaluated: (1) a breach of the old steam generator (OSG), resulting in the release of contained radioactive material, (2) flooding in the Auxiliary Building caused by the failure of piping in the ERCW tunnel, and (3) loss of ERCW to support safe shutdown of the operating unit.

Failure of an OSG that results in a breach of the primary side of the steam generator (SG) could potentially result in a release of a contained source outside containment. The consequences of this event, both offsite and in the control room, were examined and found to be within the consequences of the failure of other contained sources outside containment at the SQN site (i.e., within the SQN design basis).

With regard to flooding of the Auxiliary Building from a heavy load drop, the protective measure taken prior to the lifting of heavy loads include installation of a wall in the ERCW tunnel near the Auxiliary Building interface. The wall provides protection against a postulated flood of the ERCW tunnel and protects against flooding of the Auxiliary Building beyond those events previously evaluated.

With regard to the potential for a heavy load drop causing the loss of ERCW cooling water to the operating unit (i.e., Unit 2), TVA is implementing provisions to preclude a load drop. A heavy load drop is considered an unlikely accident for the following reasons:

- The lifting equipment was specifically designed and chosen for the subject heavy lifts,

- Crane operators will be specially trained in the operation of the lift equipment and in the SQN site conditions,

- Qualifying analyses and administrative controls will be used to protect the lifts from the effects of external events,

- The areas over which a load drop could cause loss of ERCW are a small part of the total travel path of the loads.

In addition, protection against the potential for a loss of ERCW is established prior to any heavy load lifts. Compensatory measures ensure the ERCW system is isolated should a pipe break occur, and that ERCW flow is redirected to equipment essential for safe shutdown capability of Unit 2.

Accordingly, the possibility of a new or different kind of accident from any accident previously evaluated is not created.

C. **The proposed amendment does not involve a significant reduction in a margin of safety.**

The proposed change to the Unit 2 TSs support safe operation and safe shutdown capability of Unit 2 during replacement of the Unit 1 SGs. These measures do not result in changes in the design basis for plant structures, systems, and components (SSCs). Consequently, the proposed change will not affect any margins of safety for plant SSCs.

Accordingly, a significant reduction in the margin of safety is not created by the proposed change.

V. ENVIRONMENTAL IMPACT CONSIDERATION

The proposed change does not involve a significant hazards consideration, a significant change in the types of or significant increase in the amounts of any effluents that may be released offsite, or a significant increase in individual or cumulative occupational radiation exposure. Therefore, the proposed change meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), an environmental assessment of the proposed change is not required.

ENCLOSURE 2

TENNESSEE VALLEY AUTHORITY
SEQUOYAH PLANT (SQN)
UNIT 2

PROPOSED TECHNICAL SPECIFICATION (TS) CHANGE
MARKED PAGES

I. AFFECTED PAGE LIST

Unit 2

Page 3/4 7-13

II. MARKED PAGES

See attached.

PLANT SYSTEMS

3/4.7.4 ESSENTIAL RAW COOLING WATER SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.4 At least two independent essential raw cooling water (ERCW) loops shall be OPERABLE. [*]

APPLICABILITY: Modes 1, 2, 3 and 4.

ACTION:

With only one ERCW loop OPERABLE, restore at least two loops to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.7.4 At least two ERCW loops shall be demonstrated OPERABLE:

a. At least once per 31 days by verifying that each valve (manual, power operated or automatic) servicing safety related equipment that is not locked, sealed, or otherwise secured in position, is in its correct position.

b. At least once per 18 months, during shutdown, by:

1. Verifying that each automatic valve servicing safety related equipment actuates to its correct position on a Safety Injection test signal.

2. Verifying that each ERCW pump starts automatically on a Safety Injection test signal.

* During the Unit 1 Cycle 12 refueling and steam generator replacement outage, lifts of heavy loads are not considered to affect ERCW operability provided that the lifts are performed in accordance with Topical Report 24370-TR-C-002 and the prescribed compensatory measures contained within the Topical Report.

ENCLOSURE 3

TENNESSEE VALLEY AUTHORITY
SEQUOYAH PLANT (SQN)
UNIT 2

PROPOSED TECHNICAL SPECIFICATION (TS) CHANGE
REVISED PAGES

I. AFFECTED PAGE LIST

Unit 2

Page 3/4 7-13

II. REVISED PAGES

See attached.

PLANT SYSTEMS

3/4.7.4 ESSENTIAL RAW COOLING WATER SYSTEM

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