

November 15, 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, REVISION 1, LICENSE
AMENDMENT REQUEST (LAR) TO SUPPORT UNIT 1 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. TVA letter to NRC dated July 10, 2002, "Sequoyah Nuclear Plant - Unit 2 - Technical Specification Change 02-03, Essential Raw Cooling Water Operability During Movement of Heavy Loads - One Time TS Change in Support of the Steam Generator Replacement Project"
 3. 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 MA 6574)"

In accordance with the provisions of 10 CFR 50.90, TVA is requesting an amendment to Unit 2 Operating License (OL) DPR-79. The proposed request adds a one-time condition for

conduct of heavy load lifts associated with the SQN Unit 1 steam generator replacement (SGR) project. The one-time condition establishes special provisions and requirements for safe operation of Unit 2 while heavy load lifts are performed on Unit 1. The provision for heavy load lifts is described in Topical Report 24370-TR-C-002 that was previously submitted by Reference 1 for NRC review and approval. 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. Similar provisions were approved for use during the SGR project at Arkansas Nuclear One, Unit 2 (see Reference 3).

The enclosed LAR replaces TVA TS Change 02-03 previously provided by Reference 2. As discussed during an October 24, 2002 meeting between TVA, Bechtel, and NRC staff, TVA is withdrawing the Reference 2 request.

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 and enclosure to the Tennessee State Department of Public Health.

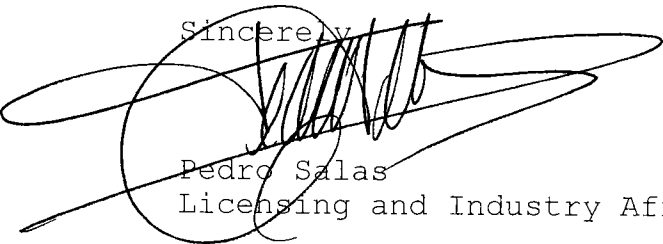
Enclosure 1 to this letter provides the description and evaluation of the proposed license amendment. This includes TVA's determination that the proposed change does not involve a significant hazards consideration, and is exempt from environmental review. Enclosure 2 contains a page from Unit 2 OL marked-up to show 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

U.S. Nuclear Regulatory Commission
Page 3
November 15, 2002

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

I declare under penalty of perjury that the foregoing is true and correct. Executed on this 15 day of November, 2002

Enclosures

cc (Enclosures):

Mr. Lawrence E. Nanney, Director
Division of Radiological Health
Third Floor
L&C Annex
401 Church Street
Nashville, Tennessee 37243-1532

Mr. Frank Masseth
Framatome ANP, Inc.
3315 Old Forest Road
P. O. Box 10935
Lynchburg, VA 24506-0935

ENCLOSURE 1

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

**PROPOSED LICENSE AMENDMENT
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 Operating License. The proposed change establishes a one-time license condition for safe operation of Unit 2 when conducting heavy load lift activities during the Unit 1 steam generator replacement (SGR) project. The proposed change is submitted in accordance with NRC Bulletin 96-02, "Movement of Heavy Loads Over Spent Fuel, Over Fuel in the Reactor Core, or Over Safety-Related Equipment." The proposed amendment provides controls during heavy load lifts over underground sections of ERCW piping that serve Unit 2. In addition, compensatory measures establish safe shutdown capability for Unit 2 in the event of a postulated heavy load drop affecting the ERCW system. The proposed one-time change is as follows:

"During the Unit 1 Cycle 12 refueling and steam generator replacement outage, lifts of heavy loads will be performed in accordance with NRC Bulletin 96-02 and will adhere to the prescribed compensatory measures contained in Topical Report 24370-TR-C-002, as approved in NRC SER dated _____."

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 license amendment.

II. REASON FOR THE PROPOSED CHANGE

The reason for the proposed change is to establish one-time special 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, a license amendment request is submitted in advance of the planned movement of loads in accordance with guidance provided by NRC Bulletin 96-02.

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 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 (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

pipng 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 safety-related components associated with both operation and safe shutdown 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 license amendment. 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 (reference 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"). 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 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 operating license. The proposed change includes a provision for maintaining operability of the essential raw cooling water (ERCW) system during performance of heavy load lifts associated with the Unit 1 steam generator replacement (SGR) project. The one-time license provision provides reference to Topical Report 24370-TR-C-002 that contains heavy load lift requirements that ensure safe operation of Unit 2. In addition, compensatory measures ensure safe shutdown capability of Unit 2 in the unlikely event a heavy load drop occurs over specific sections of 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 license amendment. The one-time provision ensures that the SQN ERCW system remains functional 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 operating license 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. **The proposed amendment does not create the possibility of a new or different kind of accident from any accident previously evaluated.**

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 operating license supports safe operation and safe shutdown capabilities 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 LICENSE AMENDMENT
MARKED PAGES

I. AFFECTED PAGE LIST

Unit 2 Operating License

Page 11

II. MARKED PAGES

See attached.

s. Primary Coolant Outside Containment (Section 22.2, III.D.1.1)

Prior to exceeding 5 percent power level, TVA is required to complete the leak tests on Unit 2, and results are to be submitted within 30 days from the completion of the testing.

(17) Surveillance Interval Extension

The performance interval for the 36-month surveillance requirements in TS 4.3.2.1.3 shall be extended to May 18, 1996, to coincide with the Cycle 7 refueling outage. The extended interval shall not exceed a total of 50 months for the 36-month surveillances.

(18) Mixed Core DNBR Penalty

TVA will obtain NRC approval prior to startup for any cycle's core that involves a reduction in the departure from nucleate boiling ratio initial transition core penalty below that value stated in TVA's submittal on Framatome fuel conversion dated April 6, 1997.

INSERT A



- D. Exemptions from certain requirements of Appendices G and J to 10 CFR Part 50 are described in the Office of Nuclear Reactor Regulation's Safety Evaluation Report, Supplements No. 1 and No. 5. These exemptions are authorized by law and will not endanger life or property or the common defence and security and are otherwise in the public interest. Therefore, these exemptions are hereby granted. The facility will operate, to the extent authorized herein, in conformity with the application, as amended, the provisions of the Act, and the regulations of the Commission.

A temporary exemption from General Design Criterion 57 found in Appendix A to 10 CFR part 50 is described in the Office of Nuclear Reactor Regulation's Safety Evaluation Report, Supplement No. 5, Section 6.2.4. This exemption is authorized by law and will not endanger life or property or the common defense and security and is otherwise in the public interest. The exemption, therefore, is hereby granted and shall remain in effect through the first refueling outage as discussed in Section 6.2.4 of Supplement 5 to the Safety Evaluation Report. The granting of the exemption is authorized with the issuance of the Facility Operating License. The facility will operate, to the extent authorized herein, in conformity with the application as amended, the provisions of the Act, and the regulations of the Commission. Additional Exemptions are listed in Attachment 2.

E. Physical Protection

The licensee shall fully implement and maintain in effect all provisions of the Commission-approved physical security, guard training and qualification, and safeguards contingency plans including amendments made pursuant to provisions of the Miscellaneous Amendments and Search Requirements revision to 10 CFR 73.55 (51 FR 27817 and 27822) and to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The Safeguards Contingency Plan is incorporated into the Physical Security Plan. The plans, which contain Safeguards Information protected under 10 CFR 73.21, are entitled: "Sequoyah Physical Security Plan," with revisions submitted through November 23, 1987; and "Sequoyah Security Personnel Training and Qualification Plan," with revisions submitted through April 16, 1987. Changes made in accordance with 10 CFR 73.55 shall be implemented in accordance with the schedule set forth therein.

April 21, 1997
Amendment Nos. 65, 162, 170, 204, 214

INSERT A

(19) Steam Generator Replacement Project

During the Unit 1 Cycle 12 refueling and steam generator replacement outage, lifts of heavy loads will be performed in accordance with NRC Bulletin 96-02 and will adhere to the prescribed compensatory measures contained in Topical Report 24370-TR-C-002, as approved in NRC SER dated _____.