



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

October 22, 2003

TVA-SQN-TS-03-12

10 CFR 50.90

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

Gentlemen:

In the Matter of)
Tennessee Valley Authority) Docket Nos. 50-327
50-328

**SEQUOYAH NUCLEAR PLANT (SQN) UNITS 1 AND 2 TECHNICAL
SPECIFICATIONS (TS) CHANGE 03-12, "APPLICATION FOR TECHNICAL
SPECIFICATION IMPROVEMENT TO EXTEND THE COMPLETION TIME FOR
ACTION A OF TECHNICAL SPECIFICATION 3/4.5.1, 'ACCUMULATORS,'
USING THE CONSOLIDATED LINE ITEM IMPROVEMENT PROCESS (CLIIP)"**

Pursuant to 10 CFR 50.90, Tennessee Valley Authority (TVA) is submitting a request for a TS change (TS 03-12) to Licenses DPR-77 and DPR-79 for SQN Units 1 and 2.

The proposed amendment would extend the completion time from 1 hour to 24 hours for "Action a" of TS 3/4.5.1, "Accumulators." The change is consistent with Nuclear Regulatory Commission approved Industry/Technical Specification Task Force (TSTF) Standard Technical Specification Change Traveler, TSTF-370, "Risk Informed Evaluation of an Extension to Accumulator Completion Times for Westinghouse Plants." The availability of this TS improvement was announced in the *Federal Register* on March 12, 2003, as part of the CLIIP.

Enclosure 1 provides a description of the proposed change and confirmation of applicability. Enclosure 2 provides the existing TS pages marked-up to show the proposed change.

DO30

U.S. Nuclear Regulatory Commission
Page 2
October 22, 2003

Please note that the marked-up pages do not include NRC approved Amendments 278 and 269 for Units 1 and 2, respectively. These amendments are not to be implemented until start up from the outage where SQN inserts tritium-producing burnable absorber rods in the core. At this time the production of tritium in the SQN reactors has been delayed indefinitely. In addition, proposed TS Change 03-01, currently under NRC review, revises boron requirements for tritium production and likewise is not included in the marked-up pages. Enclosure 3 provides the existing TS Bases pages marked-up to reflect the proposed change. There are no new regulatory commitments associated with this proposed change. In accordance with 10 CFR 50.91(b)(1), TVA is sending a copy of this letter and enclosures to the Tennessee State Department of Public Health.

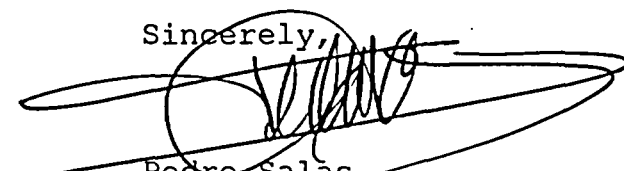
TVA does not have specific schedule needs for this proposed change and processing can be pursued as appropriate. TVA requests that the implementation of the revised TS be within 45 days of NRC approval.

This letter is being sent in accordance with NRC RIS 2001-05, "Guidance on Submitting Documents to the NRC by Electronic Information Exchange, CD-ROM, or Hard Copy."

If you have any questions about this change, please contact me at 843-7170 or Jim Smith at 843-6672.

I declare under penalty of perjury that the foregoing is true and correct. Executed on this 22 day of October, 2003.

Sincerely,



Pedro Salas
Manager of Licensing
and Industry Affairs

Enclosures:

1. TVA Evaluation of the Proposed Changes
2. Proposed Technical Specifications Changes (mark-up)
3. Changes to Technical Specifications Bases Pages

cc: See page 3

U.S. Nuclear Regulatory Commission
Page 3
October 22, 2003

Enclosures

cc (Enclosures):

Framatome ANP, Inc.
P. O. Box 10935
Lynchburg, Virginia 24506-0935
ATTN: Mr. Frank Masseth

Mr. Michael L. Marshall, Jr., Senior Project Manager
U.S. Nuclear Regulatory Commission
Mail Stop O-8G9A
One White Flint North
11555 Rockville Pike
Rockville, Maryland 20852-2739

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

ENCLOSURE 1

TENNESSEE VALLEY AUTHORITY (TVA) SEQUOYAH NUCLEAR PLANT (SQN) UNITS 1 AND 2

Description and Assessment

1.0 DESCRIPTION

The proposed License amendment extends the completion time from 1 hour to 24 hours for "Action a" of Technical Specification (TS) 3/4.5.1, "Accumulators."

The changes are consistent with Nuclear Regulatory Commission (NRC) approved Industry/Technical Specification Task Force (TSTF) Standard Technical Specification Change Traveler, TSTF-370, "Risk Informed Evaluation of an Extension to Accumulator Completion Times for Westinghouse Plants." The availability of this TS improvement was announced in the *Federal Register* on March 12, 2003, as part of the consolidated line item improvement process (CLIIP).

2.0 ASSESSMENT

2.1 Applicability of Published Safety Evaluation

TVA has reviewed the safety evaluation published on July 15, 2002 (67 FR 46542) as part of the CLIIP. This verification included a review of the NRC staff's evaluation as well as the supporting information provided to support TSTF-370 (i.e., WCAP-15049-A, "Risk-Informed Evaluation of an Extension to Accumulator Completion Times," dated May 18, 1999). TVA has concluded that the justifications presented in the TSTF proposal and the safety evaluation prepared by the NRC staff are applicable to SQN Units 1 and 2, and justify this amendment for the incorporation of the changes to the SQN TSs.

2.2 Optional Changes and Variations

TVA is not proposing any variations or deviations from the TS changes described in TSTF-370 or the NRC staff's model safety evaluation published on July 15, 2002. TVA has not converted the SQN TSs to the latest version of standard TSs in NUREG-1431. For this reason, the changes are applied to a different portion of the TSs

than found in TSTF-370. However, the application is identical to the proposed changes in TSTF-370 and the NRC approved CLIIP.

TSTF-370 also includes recommended changes to the associated Bases section to support the proposed accumulator specification changes. TVA has incorporated these Bases changes as they apply to SQN's current Bases discussions. Since SQN has not fully converted to the improved standard TSS, the Bases changes proposed in TSTF-370 to revise 1 hour to 24 hours do not apply. This is because the 1 hour provision is not specifically included in the current Bases discussions. TVA has included all necessary Bases changes to completely implement the recommendations of the TSTF and CLIIP.

3.0 REGULATORY ANALYSIS

3.1 No Significant Hazards Determination

TVA has reviewed the proposed no significant hazards consideration determination published on July 15, 2002, (67 FR 46542) as part of the consolidated line item improvement process (CLIIP). Tennessee Valley Authority (TVA) has concluded that the proposed determination presented in the notice is applicable to Sequoyah Nuclear Plant (SQN) and the determination is hereby incorporated by reference to satisfy the requirements of 10 CFR 50.91(a).

3.2 Verification and Commitments

There are no new regulatory commitments associated with this proposed change.

4.0 ENVIRONMENTAL EVALUATION

TVA has reviewed the environmental evaluation included in the model safety evaluation published on July 15, 2002, (67 FR 46542) as part of the CLIIP. TVA has concluded that the NRC staff's findings presented in that evaluation are applicable to SQN and the evaluation is hereby incorporated by reference for this application.

ENCLOSURE .2

TENNESSEE VALLEY AUTHORITY
SEQUOYAH NUCLEAR PLANT (SQN)
UNITS 1 AND 2

Proposed Technical Specification Changes (mark-up)

I. AFFECTED PAGE LIST

Unit 1

3/4 5-1

Unit 2

3/4 5-1

II. MARKED PAGES

See attached.

3/4.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

3/4.5.1 ACCUMULATORS

COLD LEG INJECTION ACCUMULATORS

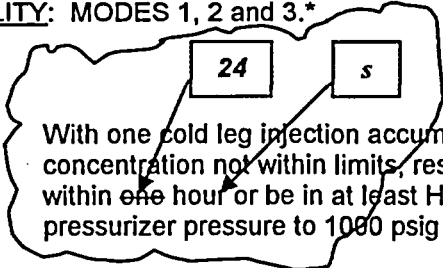
LIMITING CONDITION FOR OPERATION

3.5.1.1 Each cold leg injection accumulator shall be OPERABLE with:

- a. The isolation valve open,
- b. A contained borated water volume of between 7615 and 7960 gallons of borated water,
- c. Between 2400 and 2700 ppm of boron,
- d. A nitrogen cover-pressure of between 624 and 668 psig, and
- e. Power removed from isolation valve when RCS pressure is above 2000 psig.

APPLICABILITY: MODES 1, 2 and 3.*

ACTION:

- 
- a. With one cold leg injection accumulator inoperable, except as a result of boron concentration not within limits, restore the inoperable accumulator to OPERABLE status within one hour or be in at least HOT STANDBY within the next 6 hours and reduce pressurizer pressure to 1000 psig or less within the following 6 hours.
 - b. With one cold leg injection accumulator inoperable due to the boron concentration not within limits, restore boron concentration to within limits within 72 hours or be in at least HOT STANDBY within the next 6 hours and reduce pressurizer pressure to 1000 psig or less within the following 6 hours.

*Pressurizer pressure above 1000 psig.

3/4.5 EMERGENCY CORE COOLING SYSTEMS

3/4.5.1 ACCUMULATORS

COLD LEG INJECTION ACCUMULATORS

LIMITING CONDITION FOR OPERATION

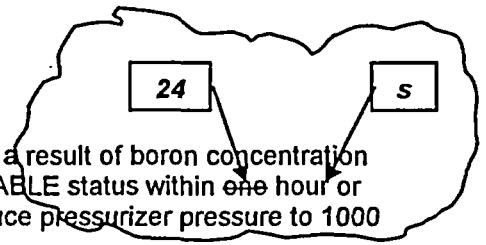
3.5.1.1 Each cold leg injection accumulator shall be OPERABLE with:

- a. The isolation valve open,
- b. A contained borated water volume of between 7615 and 7960 gallons of borated water,
- c. Between 2400 and 2700 ppm of boron,
- d. A nitrogen cover-pressure of between 624 and 668 psig, and
- e. Power removed from isolation valve when RCS pressure is above 2000 psig.

APPLICABILITY: MODES 1, 2 and 3.*

ACTION:

- a. With one cold leg injection accumulator inoperable, except as a result of boron concentration not within limits, restore the inoperable accumulator to OPERABLE status within one hour or be in at least HOT STANDBY within the next 6 hours and reduce pressurizer pressure to 1000 psig or less within the following 6 hours.
- b. With one cold leg injection accumulator inoperable due to the boron concentration not within limits, restore boron concentration to within limits within 72 hours or be in at least HOT STANDBY within the next 6 hours and reduce pressurizer pressure to 1000 psig or less within the following 6 hours.



* Pressurizer pressure above 1000 psig.

ENCLOSURE 3

TENNESSEE VALLEY AUTHORITY
SEQUOYAH NUCLEAR PLANT (SQN)
UNITS 1 AND 2

Changes to Technical Specifications Bases Pages

I. AFFECTED PAGE LIST

Unit 1

B 3/4 5-1

Unit 2

B 3/4 5-1

II. MARKED PAGES

See attached.

3/4.5 EMERGENCY CORE COOLING SYSTEMS

BASES

3/4.5.1 ACCUMULATORS

The OPERABILITY of each cold leg injection accumulator ensures that a sufficient volume of borated water will be immediately forced into the reactor core in the event that the RCS pressure falls below the specified pressure of the accumulators. For the cold leg injection accumulators, this condition occurs in the event of a large or small rupture.

The limits on accumulator volume, boron concentration and pressure ensure that the assumptions used for accumulator injection in the safety analysis are met. The limits in the specification for accumulator nitrogen cover pressure and volume are operating limits and include instrument uncertainty. The analysis limits bound the operational limits with instrument uncertainty applied. The minimum boron concentration ensures that the reactor core will remain subcritical during the post-LOCA (loss of coolant accident) recirculation phase based upon the cold leg accumulators' contribution to the post-LOCA sump mixture concentration.

The accumulator power operated isolation valves are considered to be "operating bypasses" in the context of IEEE Std. 279-1971, which requires that bypasses of a protective function be removed automatically whenever permissive conditions are not met. In addition, as these accumulator isolation valves fail to meet single failure criteria, removal of power to the valves is required.

The limits for operation with an accumulator inoperable for any reason except boron concentration not within limits minimizes the time exposure of the plant to a LOCA event occurring concurrent with failure of an additional accumulator which may result in unacceptable peak cladding temperatures. Under these conditions, the full capability of one accumulator is not available and prompt action is required to place the reactor in a mode where this capability is not required. For an accumulator inoperable due to boron concentration not within limits, the limits for operation allow 72 hours to return boron concentration to within limits. This is based on the availability of ECCS water not being affected and an insignificant effect on core subcriticality during reflood because boiling of ECCS water in the core concentrates boron in the saturated liquid.

Insert

3/4.5.2 and 3/4.5.3 ECCS SUBSYSTEMS

The OPERABILITY of two independent ECCS subsystems ensures that sufficient emergency core cooling capability will be available in the event of a LOCA assuming the loss of one subsystem through any single failure consideration. Either subsystem operating in conjunction with the accumulators is capable of supplying sufficient core cooling to limit the peak cladding temperatures within acceptable limits for all postulated break sizes ranging from the double ended break of the largest RCS cold leg pipe downward. In addition, each ECCS subsystem provides long term core cooling capability in the recirculation mode during the accident recovery period.

3/4.5 EMERGENCY CORE COOLING SYSTEMS

BASES

3/4.5.1 ACCUMULATORS

The OPERABILITY of each cold leg injection accumulator ensures that a sufficient volume of borated water will be immediately forced into the reactor core in the event the RCS pressure falls below the pressure of the accumulators. For the cold leg injection accumulators this condition occurs in the event of a large or small rupture.

The limits on accumulator volume, boron concentration and pressure ensure that the assumptions used for accumulator injection in the safety analysis are met. The limits in the specification for accumulator nitrogen cover pressure and volume are operating limits and include instrument uncertainty. The analysis limits bound the operational limits with instrument uncertainty applied. The minimum boron concentration ensures that the reactor core will remain subcritical during the post-LOCA (loss of coolant accident) recirculation phase based upon the cold accumulators' contribution to the post-LOCA sump mixture concentration.

The accumulator power operated isolation valves are considered to be "operating bypasses" in the context of IEEE Std. 279-1971, which requires that bypasses of a protective function be removed automatically whenever permissive conditions are not met. In addition, as these accumulator isolation valves fail to meet single failure criteria, removal of power to the valves is required.

The limits for operation with an accumulator inoperable for any reason except boron concentration not within limits minimizes the time exposure of the plant to a LOCA event occurring concurrent with failure of an additional accumulator which may result in unacceptable peak cladding temperatures. Under these conditions, the full capability of one accumulator is not available and prompt action is required to place the reactor in a mode where this capability is not required. For an accumulator inoperable due to boron concentration not within limits, the limits for operation allow 72 hours to return boron concentration to within limits. This is based on the availability of ECCS water not being affected and an insignificant effect on core subcriticality during reflood because boiling of ECCS water in the core concentrates boron in the saturated liquid.

Insert

3/4.5.2 and 3/4.5.3 ECCS SUBSYSTEMS

The OPERABILITY of two independent ECCS subsystems ensures that sufficient emergency core cooling capability will be available in the event of a LOCA assuming the loss of one subsystem through any single failure consideration. Either subsystem operating in conjunction with the accumulators is capable of supplying sufficient core cooling to limit the peak cladding temperatures within acceptable limits for all postulated break sizes ranging from the double ended break of the largest RCS cold leg pipe downward. In addition, each ECCS subsystem provides long term core cooling capability in the recirculation mode during the accident recovery period.

With the RCS temperature below 350°F, one OPERABLE ECCS subsystem is acceptable without single failure consideration on the basis of the stable reactivity condition of the reactor and the limited core cooling requirements.

Insert

The 24 hours allowed to restore an inoperable accumulator to OPERABLE status is justified in Westinghouse Commercial Atomic Power (WCAP)-15049-A, Revision 1, dated April 1999.