December 18, 2000

Mr. J. A. Scalice
Chief Nuclear Officer and
Executive Vice President
Tennessee Valley Authority
6A Lookout Place
1101 Market Street
Chattanooga, TN 37402-2801

SUBJECT: SEQUOYAH NUCLEAR PLANT, UNITS 1 AND 2 - ISSUANCE OF AMENDMENTS REGARDING RELOCATION OF REACTIVITY CONTROL REQUIREMENTS TO THE TECHNICAL REQUIREMENTS MANUAL (TAC NOS. MB0019 AND MB0020)

Dear Mr. Scalice:

The Commission has issued the enclosed Amendment No. 264to Facility Operating License No. DPR-77 and Amendment No. 255 to Facility Operating License No. DPR-79 for the Sequoyah Nuclear Plant (SQN), Units 1 and 2, respectively. These amendments are in response to your application dated August 31, 2000 (TSC 00-05). They relocate various reactivity control system requirements from the SQN Technical Specifications to the SQN Technical Requirements Manual.

A copy of the Safety Evaluation is also enclosed. Notice of Issuance will be included in the Commission's biweekly Federal Register notice.

Sincerely,
/RA/
Ronald W. Hernan, Senior Project Manager, Section 2
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket Nos. 50-327 and 50-328

Enclosures: 1. Amendment No. 264 to License No. DPR-77
2. Amendment No. 255 to License No. DPR-79
3. Safety Evaluation

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DOCUMENT NAME: G:\PDII-2\Sequoyah\amdb0019.wpd

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DATE	11/8/00	11/13/00	11/30/00	12/7/00	12/14/00

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NRR-058

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001
December 18, 2000

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cc w/enclosures: See next page

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

TENNESSEE VALLEY AUTHORITY

DOCKET NO. 50-327

SEQUOYAH NUCLEAR PLANT, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 264
License No. DPR-77

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Tennessee Valley Authority (the licensee) dated August 31, 2000, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 2.C.(2) of Facility Operating License No. DPR-77 is hereby amended to read as follows:

   (2) Technical Specifications

   The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 264 , are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance and shall be implemented within 45 days, which will include placing relocated requirements in the Technical Requirements Manual.

FOR THE NUCLEAR REGULATORY COMMISSION

Richard P. Correia, Chief, Section 2
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical Specifications

Date of Issuance: December 18, 2000

ATTACHMENT TO LICENSE AMENDMENT NO. 264

FACILITY OPERATING LICENSE NO. DPR-77

DOCKET NO. 50-327

Replace the following pages of the Appendix A Technical Specifications with the attached pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

REMOVE	INSERT
Index Page IV	Index Page IV
Index Page X	Index Page X
Index Page XII	Index Page XII
Index Page XV	Index Page XV
3/4 1-7	3/4 1-7
3/4 1-8	--
3/4 1-9	--
3/4 1-10	--
3/4 1-11	--
3/4 1-11a	--
3/4 1-12	--
3/4 1-13	--
3/4 1-13a	3/4 1-13a
3/4 1-18	3/4 1-18
3/4 10-5	3/4 10-5
B 3/4 1-2	B 3/4 1-2
B 3/4 1-3	B 3/4 1-3
B 3/4 10-1	B 3/4 10-1

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LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS

BASES

BASES

3/4.1.2 BORATION SYSTEMS

3.1.2.1 FLOW PATHS - SHUTDOWN (This specification deleted)

3.1.2.2 FLOW PATHS - OPERATING (This specification deleted)

3.1.2.3 CHARGING PUMP - SHUTDOWN (This specification deleted)

3.1.2.4 CHARGING PUMPS - OPERATING (This specification deleted)

3.1.2.5 BORATED WATER SOURCES - SHUTDOWN (This specification deleted)

3.1.2.6 BORATED WATER SOURCES - OPERATING (This specification deleted)

Pages 3/4 1-8 through 3/4 1-13 are deleted.

FIGURE 3.1.2.6 HAS BEEN DELETED

POSITION INDICATION SYSTEM - SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.1.3.3 This specification is deleted.

SPECIAL TEST EXCEPTIONS

3/4.10.5 POSITION INDICATION SYSTEM - SHUTDOWN

3.10.5 This specification is deleted.

3/4.1.1.4 MINIMUM TEMPERATURE FOR CRITICALITY

This specification ensures that the reactor will not be made critical with the Reactor Coolant System average temperature less than 541°F. This limitation is required to ensure 1) the moderator temperature coefficient is within its analyzed temperature range, 2) the protective instrumentation is within its normal operating range, 3) the P-12 interlock is above its setpoint, 4) the pressurizer is capable of being in a OPERABLE status with a steam bubble, and 5) the reactor pressure vessel is above its minimum RT_{NDT} temperature.

3/4.1.2 BORATION SYSTEMS (This specification is deleted)

3/4.1.3 MOVABLE CONTROL ASSEMBLIES

The specifications of this section ensure that (1) acceptable power distribution limits are maintained, (2) the minimum SHUTDOWN MARGIN is maintained, and (3) limit the potential effects of rod misalignment on associated accident analyses. OPERABILITY of the control rod position indicators is required to determine control rod positions and thereby ensure compliance with the control rod alignment and insertion limits.

3/4.10 SPECIAL TEST EXCEPTIONS

BASES

3/4.10.1 SHUTDOWN MARGIN

This special test exception provides that a minimum amount of control rod worth is immediately available for reactivity control when tests are performed for control rod worth measurement. This special test exception is required to permit the periodic verification of the actual versus predicted core reactivity condition occurring as a result of fuel burnup or fuel cycling operations.

3/4.10.2 GROUP HEIGHT, INSERTION, AND POWER DISTRIBUTION LIMITS

This special test exception permits individual control rods to be positioned outside of their normal group heights and insertion limits during the performance of such PHYSICS TESTS as those required to 1) measure control rod worth and 2) determine the reactor stability index and damping factor under xenon oscillation conditions.

3/4.10.3 PHYSICS TESTS

This special test exception permits PHYSICS TESTS to be performed at less than or equal to 5% of RATED THERMAL POWER with the RCS T_{AVG} slightly lower than normally allowed so that the fundamental nuclear characteristics of the reactor core and related instrumentation can be verified. In order for various characteristics to be accurately measured it is, at times, necessary to operate outside the normal restrictions of these technical Specifications. For instance, to measure the moderator temperature coefficient at BOL it is necessary to position various control rods at heights which may not normally be allowed by Specification 3.1.3.6 which may cause the RCS T_{AVG} to fall slightly below the minimum temperature of Specification 3.1.1.4.

Testing performed pursuant to Specification 4.10.3.2 ensures that the intermediate and power range reactor trip functions which operate at less than or equal to 25% RATED THERMAL POWER are available to limit power excursions during PHYSICS TESTS.

3/4.10.4 REACTOR COOLANT LOOPS

This special test exception permits reactor criticality under no flow conditions and is required to perform certain startup and PHYSICS TESTS while at low THERMAL POWER levels.

3/4 10.5 POSITION INDICATION SYSTEM-SHUTDOWN (This specification is deleted)

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

TENNESSEE VALLEY AUTHORITY

DOCKET NO. 50-328

SEQUOYAH NUCLEAR PLANT, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 255
License No. DPR-79

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Tennessee Valley Authority (the licensee) dated August 31, 2000, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 2.C.(2) of Facility Operating License No. DPR-79 is hereby amended to read as follows:

   (2) Technical Specifications

   The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 255 , are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance and shall be implemented within 45 days, which will include placing relocated requirements in the Technical Requirements Manual.

FOR THE NUCLEAR REGULATORY COMMISSION

Richard P. Correia, Chief, Section 2
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical Specifications

Date of Issuance: December 18, 2000

ATTACHMENT TO LICENSE AMENDMENT NO. 255

FACILITY OPERATING LICENSE NO. DPR-79

DOCKET NO. 50-328

Replace the following pages of the Appendix A Technical Specifications with the attached pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

REMOVE	INSERT
Index Page IV	Index Page IV
Index Page XI	Index Page XI
Index Page XII	Index Page XII
Index Page XV	Index Page XV
3/4 1-7	3/4 1-7
3/4 1-8	--
3/4 1-9	--
3/4 1-10	--
3/4 1-11	--
3/4 1-11a	--
3/4 1-12	--
3/4 1-13	--
3/4 1-13a	3/4 1-13a
3/4 1-18	3/4 1-18
3/4 10-5	3/4 10-5
B 3/4 1-2	B 3/4 1-2
B 3/4 1-3	B 3/4 1-3
B 3/4 10-1	B 3/4 10-1

LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS

INDEX

LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS

BASES

SECTION PAGE

3/4.1.2 BORATION SYSTEMS

3.1.2.1 FLOW PATHS - SHUTDOWN (This specification deleted)

3.1.2.2 FLOW PATHS - OPERATING (This specification deleted)

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3.1.2.4 CHARGING PUMPS - OPERATING (This specification deleted)

3.1.2.5 BORATED WATER SOURCES - SHUTDOWN (This specification deleted)

3.1.2.6 BORATED WATER SOURCES - OPERATING (This specification deleted)

Pages 3/4 1-8 through 3/4 1-13 are deleted.

Figure 3.1.2.6 has been deleted.

POSITION INDICATION SYSTEM-SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.1.3.3 This specification is deleted.

3/4.10.5 POSITION INDICATION SYSTEM - SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.10.5 This specification is deleted.

3/4.1.1.4 MINIMUM TEMPERATURE FOR CRITICALITY

This specification ensures that the reactor will not be made critical with the Reactor Coolant System average temperature less than 541°F. This limitation is required to ensure 1) the moderator temperature coefficient is within it analyzed temperature range, 2) the protective instrumentation is within its normal operating range, 3) the P-l2 interlock is above its setpoint, 4) the pressurizer is capable of being in a OPERABLE status with a steam bubble, and 5) the reactor pressure vessel is above its minimum RT_{NDT} temperature.

3/4.1.2 BORATION SYSTEMS (This specification is deleted)

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BASES

3/4.10.1 SHUTDOWN MARGIN

This special test exception provides that a minimum amount of control rod worth is immediately available for reactivity control when tests are performed for control rod worth measurement. This special test exception is required to permit the periodic verification of the actual versus predicted core reactivity condition occurring as a result of fuel burnup or fuel cycling operations.

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This special test exception permits individual control rods to be positioned outside of their normal group heights and insertion limits during the performance of such PHYSICS TESTS as those required to 1) measure control rod worth and 2) determine the reactor stability index and damping factor under xenon oscillation conditions.

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This special test exception permits PHYSICS TESTS to be performed at less than or equal to 5% of RATED THERMAL POWER with the RCS T_{AVG} slightly lower than normally allowed so that the fundamental nuclear characteristics of the reactor core and related instrumentation can be verified. In order for various characteristics to be accurately measured it is, at times, necessary to operate outside the normal restrictions of these Technical Specifications. For instance, to measure the moderator temperature coefficient at BOL it is necessary to position the various control rods at heights which may not normally be allowed by Specification 3.1.3.6 which in turn may cause the RCS T_{AVG} to fall slightly below the minimum temperature of Specification 3.1.1.4.

Testing performed pursuant to Specification 4.10.3.2 ensures that the intermediate and power range reactor trip functions which operate at less than or equal to 25% RATED THERMAL POWER are available to limit power excursions during PHYSICS TESTS.

3/4.10.4 REACTOR COOLANT LOOPS

This special test exception permits reactor criticality under no flow conditions and is required to perform certain startup and PHYSICS TESTS while at low THERMAL POWER levels.

3/4.10.5 POSITION INDICATION SYSTEM-SHUTDOWN (This specification is deleted)

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 264 TO FACILITY OPERATING LICENSE NO. DPR-77

AND AMENDMENT NO. 255 TO FACILITY OPERATING LICENSE NO. DPR-79

TENNESSEE VALLEY AUTHORITY

SEQUOYAH NUCLEAR PLANT, UNITS 1 AND 2

DOCKET NOS. 50-327 AND 50-328

1.0 INTRODUCTION

By application dated August 31, 2000, the Tennessee Valley Authority (TVA, or the licensee) proposed an amendment to the Technical Specifications (TS) for Sequoyah Nuclear Plant (SQN) Units 1 and 2. The requested change would relocate various reactivity control system requirements from the SQN TS to the SQN Technical Requirements Manual (TRM). Specifically, the proposed changes would relocate the current requirements for boration systems and the shutdown portion of the control rod position indication system to the TRM. This relocation would be consistent with the functions that have been moved to licensee-controlled documents in the latest version of the Standard TS for Westinghouse-designed plants (NUREG-1431).

2.0 BACKGROUND

2.1 Staff Position

Section 182a of the Atomic Energy Act requires applicants for nuclear power plant operating licenses to include TS as part of the license. In Section 50.36 of *Title 10 of the Code of Federal Regulations* (10 CFR 50.36), the U.S. Nuclear Regulatory Commission (NRC) established the regulatory requirements related to the content of the TS. That regulation requires that the TS include items in five specific categories, including (1) safety limits, limiting safety system settings, and limiting control settings; (2) limiting conditions for operation; (3) surveillance requirements; (4) design features; and (5) administrative controls. However, the regulation does not specify the particular requirements to be included in the TS.

The NRC developed criteria, as described in the *Final Policy Statement on Technical Specifications Improvements for Nuclear Power Reactors* (58 FR 39132), to determine which of the design conditions and associated surveillances should be located in the TS as Limiting Conditions for Operation (LCOs). Four criteria were subsequently incorporated into the regulations by an amendment to 10 CFR 50.36 (60 FR 36953):

Criterion 1: Installed instrumentation that is used to detect, and indicate in the control room, a significant abnormal degradation of the reactor coolant pressure boundary;

Criterion 2: A process variable, design feature, or operating restriction that is an initial condition of a design basis accident or transient analysis that either assumes the failure of, or presents a challenge to, the integrity of a fission product barrier;

Criterion 3: A structure, system, or component that is part of the primary success path and which functions or actuates to mitigate a design basis accident or transient that either assumes the failure of, or presents a challenge to, the integrity of a fission product barrier;

Criterion 4: A structure, system, or component which operating experience or probabilistic safety assessment has shown to be significant to public health and safety.

The Commission's Final Policy Statement and documentation related to the revision of 10 CFR 50.36 acknowledged that implementation of these criteria may cause some requirements presently in TS to be moved to documents and programs controlled by licensees. The staff has determined that license amendment requests to relocate TS should state which licensee-controlled document, such as the Updated Safety Analysis Report (USAR), will receive the relocated specifications. In the amendment request, the licensee should describe the program it will use to control changes to relocated provisions (for example, 10 CFR 50.59). Control of the relocated provisions in accordance with the applicable regulation will ensure that NRC review and approval will be requested for changes exceeding the stated regulatory threshold (for example, an unreviewed safety question).

TVA stated in their license amendment application that the affected functions have been evaluated in accordance with 10 CFR 50.36 for applicability to the criteria for requirements that must be retained in the TS. In each case, the four criteria of 10 CFR 50.36 did not apply to these functions. TVA stated that this revision will provide better consistency between the SQN TS and NUREG-1431.

2.1 Proposed Changes

The proposed revision to the SQN TS for Units 1 and 2 will relocate specifications that are not required to be contained in the TS in accordance with 10 CFR 50.36. These specifications include:

TS 3.1.2.1 and 3.1.2.2 for boration flow paths,
TS 3.1.2.3 and 3.1.2.4 for boration charging pumps,
TS 3.1.2.5 and 3.1.2.6 for borated water sources, and
TS 3.1.3.3 for position indication systems during shutdown

These specifications will be relocated in their entirety to the TRM without change to the requirements currently contained within TS. The Bases associated with these TS will be relocated to the TRM to support the proposed revisions. Necessary changes to the index pages have been included to denote the deletion of these specifications from the TS.

In addition, TVA proposes to delete TS 3.10.5, "Special Test Exceptions - Position Indication System - Shutdown." As discussed below, this exception no longer applies to the TS that is referenced (TS 3.1.3.3) because of a previous amendment that changed TS 3.1.3.3 and, therefore, the exception is no longer needed.

2.2 Need for the Proposed Change

The proposed revision removes specifications that are not required to be contained in the TS in accordance with the criteria in 10 CFR 50.36. The inclusion of these specifications in the TS places an unnecessary burden on TVA and the regulators for processing licensing amendments and in consideration of consistency with the Standard TS (NUREG-1431). The relocation of these specifications will place them in the TRM, which is a 10 CFR 50.59-controlled document, that provides an appropriate level of review and approval for the revision of functions that are important to safety but do not satisfy the criterion found in 10 CFR 50.36 for TS requirements. The proposed revision will reduce TVA and NRC activities for functions that were not intended to be controlled as TS requirements while maintaining an appropriate level of requirement control and an improved level of consistency with NUREG-1431.

2.3 Licensee's Safety Analysis

The boron injection system ensures that negative reactivity control is available during each mode of facility operation. The components required to perform this function include (1) borated water sources, (2) charging pumps, (3) separate flow paths, 4) boric acid transfer pumps, and (5) an emergency power supply from operable diesel generators. The TS require that at least one flow path is available for boron injection when in Modes 4, 5, and 6. The TS require redundant boration capability when in Modes 1, 2, and 3. The capability of such injection is adequate to ensure that adequate shutdown margin can be maintained after xenon decay and cooldown (both of which add positive reactivity to the reactor core).

Two separate systems are provided to sense and display control rod position. The first is the analog, or individual, rod position indication system (RPIS) that uses an analog signal that is produced for each rod cluster control assembly by a linear variable transformer. Direct continuous readout of every rod cluster control assembly position is presented to the operator by individual meter indications without need for operator selection or switching to determine rod position. A rod bottom (rod drop) alarm is provided. The second system is the demand position indication system (DPIS). This system counts pulses generated in the rod drive control system to provide a readout of the demanded bank position.

The DPIS and RPIS are separate systems with each serving as backup for the other. Operating procedures require the reactor operator to compare the demand and (actual) readings upon recognition of any apparent malfunction. Therefore, a single failure in rod position indication does not in itself lead the operator to take erroneous action in the operation of the reactor (such as a manual reactor trip).

The proposed relocation of the affected specifications only places the current requirements into an acceptable alternative document (the TRM) that maintains the same requirements. The primary difference is that the revision for these specifications would be controlled in accordance

with 10 CFR 50.59 (instead of 10 CFR 50.90,10 CFR 50.91, and 10 CFR 50.92), which is acceptable for functions (plant operations) that do not meet the criterion of 10 CFR 50.36. The 10 CFR 50.59 requirements ensure that changes to these provisions that are not consistent with the design basis of the plant are evaluated and verified to maintain the health and safety of the public. If this cannot be assured, review and approval by NRC is required prior to implementation.

The following evaluations, using the four criteria in 10 CFR 50.36 (listed above), demonstrate the lack of applicability for inclusion in the TS for the functions proposed for relocation.

Boration systems

The boration systems of the Chemical and Volume Control System (CVCS) provide the means to meet one of the functional requirements of the CVCS to control the chemical neutron absorber (boron) concentration in the reactor coolant system (RCS) and to help maintain the shutdown margin. To accomplish this functional requirement the current specifications require a source of borated water, one or more flow paths to inject this borated water into the RCS, and appropriate charging pumps to provide the necessary charging head.

The boration system is not assumed to be operable to mitigate the consequences of a design basis accident (DBA) or transient. In the case of a malfunction of the CVCS, which causes a boron dilution event, the automatic response, or that required by the operator, is to close the appropriate valves in the reactor makeup system. This action is required before the shutdown margin is lost. Operation of the boration systems is not assumed to mitigate this event.

The proposed revision relocates six specifications for boration systems to the TRM. These specifications are considered together in the following evaluation for 10 CFR 50.36 criterion applicability:

Criterion 1

The boration systems do not include installed instrumentation that is used to detect, and indicate in the control room, a significant abnormal degradation of the RCS pressure boundary; therefore, these systems do not satisfy Criterion 1.

Criterion 2

The boration systems are not considered to be an initial condition assumed for a DBA or transient analysis. While they function to help maintain acceptable boration level in the RCS, the accident analysis assumptions for RCS boron are not directly related to the operability of these systems. Therefore, the boration systems do not satisfy Criterion 2.

Criterion 3

The boration systems are not assumed or credited for the mitigation of DBAs in the Sequoyah analysis. Injection of concentrated boron through the boration systems can help minimize the consequences of accidents but these systems are not specifically assumed to be available for

mitigation. Therefore, the boration systems are not a primary success path for the mitigation of DBAs or transients and do not satisfy Criterion 3.

Criterion 4

Evaluation of the boration systems and operating experience has not determined these systems to be a significant contributor to the health and safety of the public. Portions of these systems operate to perform functions that are significant contributors and are addressed by other specifications in the TS. In addition, other methods are available to provide boration of the RCS to mitigate accidents or maintain acceptable level during normal operation and are also included in the TS. Therefore, the boration systems are not significant as shown by operating experience and probabilistic risk assessment and do not satisfy Criterion 4.

Control rod position indication system

The following evaluation addresses the 10 CFR 50.36 applicability for the position indication system during shutdown conditions:

Criterion 1

The control rod position indication system provides indication of rod position to the operator. This indication is used by the operator to verify that the rods are correctly positioned, and to verify that the rods are inserted into the core following a reactor trip. Rod position indication is also used during reactor startup.

The position indication system does not include installed instrumentation that is used to detect, and indicate in the control room, a significant abnormal degradation of the RCS pressure boundary; therefore, it does not satisfy Criterion 1.

Criterion 2

The position indication system, during shutdown, provides indication that control rods are fully inserted or the associated rod position during system testing or rod drop verifications. This indication does not support an initial condition of a DBA or transient during shutdown conditions. Therefore, the position indication system does not satisfy Criterion 2.

Criterion 3

The position indication system does not function to mitigate DBAs in the SQN safety analysis. This system provides indication of rod position to allow an operator to take appropriate actions for misalignment situations. This indication system has no automatic function for accident mitigation, nor is it credited to indicate necessary actions for accident mitigation. Therefore, the position indication system is not a primary success path for the mitigation of DBAs or transients and does not satisfy Criterion 3.

Criterion 4

Evaluation of the position indication system and operating experience has not determined this system to be a significant contributor to the health and safety of the public. While the position indication system provides rod position information, this system does not perform an automatic initiation function and other means are available to detect conditions for rod misalignment. Therefore, the position indication system is not significant as shown by operating experience and probabilistic risk assessment and does not satisfy Criterion 4.

TS 3.10.5 - Special Test Exceptions

The deletion of TS 3.10.5 is proposed to eliminate a special test exception that should have been eliminated in a previous amendment (Amendment 26 for Unit 1, Amendment 15 for Unit 2) to the SQN TS. This exception was originally related to TS 3.1.3.3 at a time when the position indication function was satisfied by the analog RPIS. Since then, TVA has requested, and received NRC approval of, an amendment to rely on the DPIS for this function because of inherent inaccuracies in the RPIS at the ends of the indication range. After implementation of this amendment, the exception in TS 3.10.5 was no longer valid or needed because the instrumentation utilized in TS 3.1.3.3 (DPIS) no longer included the analog RPIS for which the special test exception is applicable. Therefore, the provisions of Specification 3.10.5 are no longer necessary or of value and this specification is not proposed for relocation to another document. TVA concluded that this deletion is acceptable because Specification 3.1.3.3 is fully adequate without reliance on this provision.

Licensee's Conclusion

The proposed revisions to relocate the boration systems and the shutdown portion of the position indication system discussed above will not remove provisions required to be maintained by TS. This has been demonstrated in the 10 CFR 50.36 evaluations provided above. These provisions will be relocated with the same requirements in the TRM with the exception of the special test exception in Specification 3.10.5. This exception is not currently used and will not affect the functions of the relocated specifications or other TS requirements. Therefore, the proposed relocation of these specifications is acceptable from a nuclear safety standpoint and implementation of this revision will not impact the health and safety of the public.

3.0 STAFF EVALUATION

The Commission's Final Policy Statement states that LCOs and associated requirements that do not satisfy or fall within any of the four specified criteria (now contained in 10 CFR 50.36, as amended in 1995) may be relocated from the TS (an NRC-controlled document) to appropriate licensee-controlled documents. As discussed below, the staff finds that relocation of these requirements, as proposed by TVA, to the TRM is acceptable, in that changes to the TRM will be adequately controlled by 10 CFR 50.59. These provisions will continue to be implemented by appropriate plant procedures (i.e., operating procedures, maintenance procedures, surveillance and testing procedures, and work control procedures).

3.1 TS 3/4.1.2.1and 3/4.1.2.2, Boration Systems Flow Paths

The requirements of TS 3/4.1.2.1 and 3/4.1.2.2 are proposed to be relocated to the TRM. These requirements apply to boration flow paths and borated water sources during shutdown. The LCO requires at least one of the boron injection flow paths (i.e., boric acid tanks or refueling water storage tank (RWST)) to be operable in Modes 4, 5 and 6. If none of the specified flow paths are available, the TS action statement requires all operations involving core alterations or positive reactivity changes to be suspended and, if in Mode 4, requires one flow path be restored as soon as possible.

Section 3.1 of the improved Standard TS (iSTS) requires boration of the reactor coolant system (RCS) when it is needed to maintain shutdown margin (SDM). The boration subsystem is not assumed to be operable to mitigate the consequences of a design basis accident (DBA) or transient and is not assumed in the accident analysis. In case of a malfunction of the chemical and volume control system (CVCS) (a boration subsystem) that causes a boron dilution event, the automatic response, or the response required by the operator, is to close the appropriate valves in the reactor makeup system. This action is required before SDM is lost and is not assumed to mitigate this event. Therefore, the requirements in TS 3/4.1.2.1 and 3/4.1.2.2 are not needed in the TS, and may be relocated to a licensee-controlled document outside of TS, because the Final Policy Statement and 10 CFR 50.36 criteria for including them in the ITS has not been satisfied. A TRM is an acceptable licensee-controlled document for this information. Therefore, this relocation is acceptable.

3.2 TS 3/4.1.2.3, Charging Pump - Shutdown

The requirements of TS 3/4.1.2.3 are proposed to be relocated to the TRM. This LCO requires that at least one charging pump, in a boron injection flow path to the RCS specified in TS 3/4.1.2.1 and capable of being powered from an operable shutdown board, must be operable in Modes 4, 5, and 6. TS 3/4.1.2.1 requires at least one of the boron injection flow paths (i.e., boric acid storage tanks or RWST) to be operable for Modes 4, 5, and 6. If none of the specified flow paths are available, the TS action statement requires all operations involving core alterations or positive reactivity changes to be suspended and (Mode 4 only) and one flow path be restored as soon as possible.

Section 3.1 of the iSTS requires boration of the RCS when it is needed. The boration subsystem is not assumed to be operable to mitigate the consequences of a DBA or other transient and is not assumed in the accident analysis. In case of a malfunction of the CVCS (a boration subsystem) that causes a boron dilution event, the automatic response, or that required by the operator, is to close the appropriate valves in the reactor makeup system. This action is required before SDM is lost and is not assumed to mitigate this event. Therefore, the requirements in TS 3/4.1.2.3 are not needed in the TS, and may be relocated to a licensee-controlled document outside of TS, because the Final Policy Statement and 10 CFR 50.36 criteria for including them in the TS have not been satisfied. A TRM is an acceptable licensee-controlled document for the information relocated from TS 3/4.1.2.3. This relocation is acceptable.

3.3 TS 3/4.1.2.4, Charging Pump - Operating

The requirements of TS 3/4.1.2.4 are proposed to be relocated to the TRM. This LCO requires at least two charging pumps to be operable in Modes 1 through 3 for boration and reactivity control.

Section 3.1 of the iSTS requires boration of the RCS when it is needed. The boration subsystem is not assumed to be operable to mitigate the consequences of a DBA or other transient and is not assumed in the accident analysis. In case of a malfunction of the CVCS (a boration subsystem) that causes a boron dilution event, the automatic response, or the response required by the operator, is to close the appropriate valves in the reactor makeup system. This action is required before SDM is lost and is not assumed to mitigate this event. Therefore, the requirements in TS 3/4.1.2.4 are not needed in the TS, and may be relocated to a licensee-controlled document outside the TS, because the Final Policy Statement and 10 CFR 50.36 criteria for including them in the TS have not been satisfied. A TRM is an acceptable licensee-controlled document for the information relocated from TS 3/4.1.2.4. This relocation is acceptable.

3.4 TS 3/4.1.2.5, Borated Water Sources - Shutdown

The requirements of TS 3/4.1.2.5 are proposed to be relocated to a TRM. The specification requires a minimum of one borated water source (boric acid storage system or RWST) to be operable while in Modes 4, 5, and 6. The LCO requires at least one of these tanks to be operable, and to have at least a minimum (1) borated water volume, (2) boron concentration, and (3) solution temperature. The requirements on the flow paths are in TS 3/4.1.2.1 and 3/4.1.2.2, and these specifications are also being relocated to the TRM, as discussed above.

Section 3.1 of the iSTS requires boration of the RCS when it is needed. The boration subsystem is not assumed to be operable to mitigate the consequences of a DBA or other transient and is not assumed in the accident analysis. In case of a malfunction of the CVCS (a boration subsystem) that causes a boron dilution event, the automatic response, or the response required by the operator, is to close the appropriate valves in the reactor makeup system. This action is required before SDM is lost and is not assumed to mitigate this event. Therefore, the requirements in TS 3/4.1.2.5 are not needed in the TS, and may be relocated to a licensee-controlled document outside the TS, because the Final Policy Statement and 10 CFR 50.36 criteria for including them in the TS has not been satisfied. A TRM is an acceptable licensee-controlled document for this information. This relocation is acceptable.

3.5 TS 3/4.1.2.6, Borated Water Sources - Operating

The requirements of TS 3/4.1.2.6 are proposed to be relocated to the TRM. This specification requires the boric acid storage system and RWST, which are both borated water sources, to be operable during Modes 1, 2, and 3, and to have a minimum (1) borated water volume, (2) boron concentration, and (3) solution temperature.

Section 3.1 of the ISTS requires boration of the RCS when it is needed. The boration system is not assumed to be operable to mitigate the consequences of a DBA or other transient and is

not assumed in the accident analysis. In case of a malfunction of the CVCS (a boration subsystem), that causes a boron dilution event, the automatic response, or the response required by the operator, is to close the appropriate valves in the reactor makeup system. This action is required before SDM is lost and is not assumed to mitigate this event. Therefore, the requirements in TS 3/4.1.2.6 are not needed in the TS, and may be relocated to a licensee-controlled document outside the TS, because the Final Policy Statement and 10 CFR 50.36 criteria for including them in the TS has not been satisfied. A TRM is an acceptable licensee-controlled document for this information. This relocation is acceptable.

3.6 TS 3/4.1.3.3, Position Indication System - Shutdown

The requirements in special test exception TS 3/4.1.3.3 are proposed to be relocated to the TRM. The LCO requires the control rod group demand position indicator to be operable in Modes 3, 4, and 5 when the reactor trip breakers are in the closed position and requires the indicators to have an accuracy of ± 2 steps. The rod position system is not assumed to be operable to mitigate the consequences of a DBA or other transient and is not assumed operable in the accident analysis. The requirements in TS 3/4.1.3.3 do not meet the criteria in the Final Policy Statement and 10 CFR 50.36 to be included in the TS and would be relocated to the TRM. This relocation is acceptable.

3.7 TS 3/4.3.10.5, Special Test Exception - Position Indication System - Shutdown

TVA proposed removal of the requirements in special test exception TS 3/4 3.10.5 from the TS and that they not be relocated to the TRM. TS 3.10.5 allows suspension of the requirements in TS 3/4.1.3.3, *Rod Position Indication System - Shutdown*, in Modes 3, 4, and 5, during the periodic performance of shutdown and control rod drop time measurements. Following implementation of a License Amendment in 1983 that changed the applicability of TS 3.1.3.3 from RPIS to GPIS, the exception in TS 3.10.5 was no longer valid or needed and should have been removed at that time. The staff finds that this change is acceptable because Specification 3.1.3.3 is fully adequate without reliance on this provision.

Staff Conclusion

The relocated specifications from the TS discussed above are not required to be in the iSTS because they do not fall within the criteria for mandatory inclusion in the TS in 10 CFR 50.36(c)(2)(ii). They are not needed to obviate the possibility that an abnormal situation or event will give rise to an immediate threat to the public health and safety. In addition, the NRC staff finds that sufficient regulatory controls exist under the regulations cited above to maintain the effect of the provisions in these specifications. The NRC staff has concluded that appropriate controls have been established for all of the current specifications, information, and requirements that are being moved to the TRM. The NRC staff has concluded that, in accordance with the Commission's Final Policy Statement and 10 CFR 50.36, sufficient regulatory controls exist under the regulations. Accordingly, these specifications, information, and requirements, as described in detail in this Safety Evaluation, may be relocated from the TS and placed in the licensee-controlled TRM.

In addition, the NRC staff agrees with the licensee's statement that the provisions of Specification 3.10.5 are no longer necessary or of value and that specification need not be relocated to another document. The NRC staff agrees with the licensee's conclusion that this deletion is acceptable because Specification 3.1.3.3 is fully adequate without reliance on this provision.

The NRC, therefore, finds the above changes to be acceptable.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Tennessee State official was notified of the proposed issuance of the amendment. The State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration, and there has been no public comment on such finding (65 FR 59226). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

7.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

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