ENCLOSURE 1

PROPOSED TECHNICAL SPECIFICATION (TS) CHANGE

SEQUOYAH NUCLEAR PLANT (SQN) UNITS 1 AND 2

DOCKET NOS. 50-327 AND 50-328

(TVA-SQN-TS-94-06)

LIST OF AFFECTED PAGES

Unit 1

3/4 7-5
3/4 7-6
B3/4 7-2

Unit 2

3/4 7-5
3/4 7-6
B3/4 7-2

REPLACE ENTIRE PAGE WITH NEW PAGES 3/4 7-5, 3/4 7-6 and 3/4 7-6a.

PLANT SYSTEMS

AUXILIARY FEEDWATER SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.1.2 At least three independent steam generator auxiliary feedwater pumps and associated flow paths shall be OPERABLE with:

a. Two motor-driven auxiliary feedwater pumps, each capable of being powered from separate shutdown boards, and

b. One steam turbine-driven auxiliary feedwater pump capable of being powered from an OPERABLE steam supply system.

APPLICABILITY: MODES 1, 2 and 3.

ACTION:

a. With one auxiliary feedwater pump inoperable, restore the required auxiliary feedwater pumps to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.

b. With two auxiliary feedwater pumps inoperable, be in at least HOT STANDBY within 6 hours and in HOT SHUTDOWN within the following 6 hours.

c. With three auxiliary feedwater pumps inoperable, immediately initiate corrective action to restore at least one auxiliary feedwater pump to OPERABLE status as soon as possible.

SURVEILLANCE REQUIREMENTS

4.7.1.2 In addition to the requirements of Specification 4.0.5 each auxiliary feedwater pump shall be demonstrated OPERABLE by : R16

a. Verifying that:

1. each motor-driven pump develops a differential pressure of greater than or equal to the values indicated below on recirculation flow.

1A-A: 1450 psid. R119

1B-B: 1500 psid.

2. the steam turbine-driven pump develops a differential pressure of greater than or equal to 1201 psid on recirculation flow when the secondary steam supply pressure is greater than 842 psig. The provisions of Specification 4.0.4 are not applicable for entry into MODE 3. R119

REPLACE ENTIRE PAGE WITH NEW PAGES 3/4 7-5, 3/4 7-6 and 3/4 7-6a.

SURVEILLANCE REQUIREMENTS (Continued)

3. at least once per 31 days, each automatic control valve in the flow path is OPERABLE whenever the auxiliary feedwater system is placed in automatic control or when above 10% of RATED THERMAL POWER. R118 R16

b. At least once per 18 months during shutdown* by: R81

1. Verifying that each automatic valve in the flow path actuates to its correct position upon receipt of an auxiliary feedwater actuation test signal and a low auxiliary feedwater pump suction pressure test signal.

2. Verifying that each auxiliary feedwater pump starts as designed automatically upon receipt of an auxiliary feedwater actuation test signal.

c. At least once per 7 days by verifying that each non-automatic valve in the auxiliary feedwater system flowpath is in its correct position.

*The provisions of Specification 4.0.4 are not applicable for entry into MODE 3 for the turbine-driven Auxiliary Feedwater Pump. R81

PLANT SYSTEMS

AUXILIARY FEEDWATER (AFW) SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.1.2 Three auxiliary feedwater trains shall be OPERABLE.

Note for LCO 3.7.1.2

Only one AFW train, which includes a motor driven pump, is required to be OPERABLE in MODE 4.

APPLICABILITY: MODES 1, 2, and 3,
MODE 4 when steam generator is relied upon for heat removal.

ACTION:

a. With one AFW train inoperable in MODE 1, 2 or 3, restore the inoperable AFW train to OPERABLE status within 72 hours or be in HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 12 hours.

b. With two AFW trains inoperable in MODE 1,2 or 3, be in at least HOT STANDBY within 6 hours and in HOT SHUTDOWN within the following 6 hours.

c. With three AFW trains inoperable in MODE 1,2 or 3, immediately initiate corrective action to restore at least one AFW train to OPERABLE status.

Note for ACTION c.

LCO 3.0.3 and all other LCO ACTIONS requiring MODE changes are suspended until one AFW train is restored to OPERABLE status.

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d. With the required AFW train inoperable in MODE 4, immediately initiate action to restore the required AFW train to OPERABLE status.

SURVEILLANCE REQUIREMENTS

4.7.1.2.1 At least once per 31 days, verify each AFW manual, power operated, and automatic valve in each water flow path, and in both steam supply flow paths to the steam turbine driven pump, that is not locked, sealed, or otherwise secured in position, is in the correct position.

4.7.1.2.2. At least once per 92 days, verify the developed head of each AFW at the flow test point is greater than or equal to the required developed head.

Note for 4.7.1.2.2

Not required to be completed for the turbine driven AFW pump until 24 hours after steam supply pressure is greater than or equal to 842 psig.

4.7.1.2.3 Once every 18 months, verify each AFW automatic valve that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.

Note for 4.7.1.2.3

Not applicable in MODE 4 when steam generators are relied upon for heat removal.

SURVEILLANCE REQUIREMENTS (Continued)

4.7.1.2.4 Once every 18 months, verify each AFW pump starts automatically on an actual or simulated actuation signal.

Note for 4.7.1.2.4

1. Not required to be completed for the turbine driven AFW pump until 24 hours after steam supply pressure is greater than or equal to 842 psig.

2. Not applicable in MODE 4 when steam generator(s)are relied upon for heat removal.

X = Total relieving capacity of all safety valves per steam line in lbs/hour, 4.75×10^6 lbs/hour at 1170 psig.

Y = Maximum relieving capacity of any one safety valve in lbs/hour, 950,000 lbs/hour at 1170 psig.

INSERT A

3/4.7.1.2 AUXILIARY FEEDWATER SYSTEM

The OPERABILITY of the auxiliary feedwater system ensures that the Reactor Coolant System can be cooled down to less than 350°F from normal operating conditions in the event of a total loss of off-site power.

The steam driven auxiliary feedwater pump is capable of delivering 880 gpm (total feedwater flow) and each of the electric driven auxiliary feedwater pumps are capable of delivering 440 gpm (total feedwater flow) to the entrance of the steam generators at steam generator pressures of 1100 psia. At 1100 psia the open steam generator safety valve(s) are capable of relieving at least 11% of nominal steam flow. A total feedwater flow of 440 gpm at pressures of 1100 psia is sufficient to ensure that adequate feedwater flow is available to remove decay heat and reduce the Reactor Coolant System temperature to less than 350°F where the Residual Heat Removal System may be placed into operation. The surveillance test values ensure that each pump will provide at least 440 gpm plus pump recirculation flow against a steam generator pressure of 1100 psia. R119 R119 R119

Each motor-driven auxiliary feedwater pump (one Train A and one Train B) supplies flow paths to two steam generators. Each flow path contains an automatic air-operated level control valve (LCV). The LCVs have the same train designation as the associated pump and are provided trained air. The turbine-driven auxiliary feedwater pump supplies flow paths to all four steam generators. Each of these flow paths contains an automatic air-operated LCV, two of which are designated as Train A, receive A-train air, and provide flow to the same steam generators that are supplied by the B-train motor-driven auxiliary feedwater pump. The remaining two LCVs are designated as Train B, receive B-train air, and provide flow to the same steam generators that are supplied by the A-train motor-driven pump. This design provides the required redundancy to ensure that at least two steam generators receive the necessary flow assuming any single failure. It can be seen from the description provided above that the loss of a single train of air (A or B) will not prevent the auxiliary feedwater system from performing its intended safety function and is no more severe than the loss of a single auxiliary feedwater pump. Therefore, the loss of a single train of auxiliary air only affects the capability of a single motor-driven auxiliary feedwater pump because the turbine-driven pump is still capable of providing flow to two steam generators that are separate from the other motor-driven pump. BR-1

Two redundant steam sources are required to be operable to ensure that at least one source is available for the steam-driven auxiliary feedwater (AFW) pump operation following a feedwater or main steam line break. This requirement ensures that the plant remains within its design basis (i.e., AFW to two intact steam generators) given the event of a loss of the No. 1 steam generator R159

INSERT A

The AFW System is configured into three trains. The AFW System is considered OPERABLE when the components and flow paths required to provide redundant AFW flow to the steam generators are OPERABLE. This requires that the two motor-driven AFW pumps be OPERABLE in two diverse paths, each supplying AFW to separate steam generators. The turbine-driven AFW pump is required to be OPERABLE with redundant steam supplies from each of two main steam lines upstream of the MSIV's, and shall be capable of supplying AFW to any steam generator. The piping, valves, instrumentation, and controls in the required flow paths also are required to be OPERABLE.

The AFW System mitigates the consequences of any event with loss of normal feedwater.

The design basis of the AFW System is to supply water to the steam generator to remove decay heat and other residual heat by delivering at least the minimum required flow rate to the steam generators at a pressure corresponding to 1085 psig. This pressure is in excess of the maximum expected steam generator pressure with the existing safety valve setpoints.

In addition, the AFW System must supply enough makeup water to replace steam generator secondary inventory lost as the unit cools to MODE 4 conditions. Sufficient AFW flow must also be available to account for flow losses such as pump recirculation and line breaks.

The limiting Design Basis Accidents (DBAs) and transients for the AFW System are as follows:

a. Feedwater Line Break (FWLB); and

b. Loss of main feedwater (MFW).

In addition, the minimum available AFW flow and system characteristics are credited for removing decay heat in the analysis of a small break loss of coolant accident (LOCA).

The AFW System design is such that it can perform its function following a FWLB between the MFW isolation valves and containment, combined with a loss of offsite power following turbine trip, and a single active failure of the steam turbine-driven AFW pump (above 50% power) or one motor-driven AFW pump (below 50% power with steam generator low level reactor trip time delay). For 50% power operation and higher, one motor-driven AFW pump is assumed to deliver to the broken MFW header at the pump run-out flow. Sufficient flow would be delivered to the intact steam generator by the redundant motor-driven AFW pump.

INSERT A (Continued)

For partial power operation (below 50% power with trip time delay active), one motor-driven AFW pump is assumed to fail. All flow from the turbine-driven AFW pump and the redundant motor-driven AFW pump is assumed to deliver to the broken MFW header until the faulted steam generator is isolated by operator action 10 minutes after the break. After isolation of the faulted steam generator, sufficient flow is delivered to the intact steam generator by the turbine-driven and redundant motor-driven AFW pump.

The Engineered Safety Feature Actuation System (ESFAS) automatically actuates the AFW turbine-driven pump and associated valves and controls when required to ensure an adequate feedwater supply to the steam generators during loss of power.

The surveillance requirements (SRs) provide a means of ensuring the AFW system components are capable of supplying required flow to the steam generators, the flow path is aligned correctly, and the automatic functions actuate as designed. The automatic functions are verified through either an actual or simulated actuation signal. The actuation signal associated with SR 4.7.1.2.3 (automatic valve actuation) include the AFW actuation test signal and the low AFW pump suction pressure test signal. The actuation signal associated with SR 4.7.1.2.4 (automatic pump start) includes only the AFW actuation test signal.

REPLACE ENTIRE PAGE WITH NEW PAGES 3/4 7-5, 3/4 7-6, and 3/4 7-6a.

AUXILIARY FEEDWATER SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.1.2 At least three independent steam generator auxiliary feedwater pumps and associated flow paths shall be OPERABLE with:

a. Two motor-driven auxiliary feedwater pumps, each capable of being powered from separate shutdown boards, and

b. One steam turbine-driven auxiliary feedwater pump capable of being powered from an OPERABLE steam supply system.

APPLICABILITY: Modes 1, 2 and 3.

ACTION:

a. With one auxiliary feedwater pump inoperable, restore the required auxiliary feedwater pumps to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.

b. With two auxiliary feedwater pumps inoperable, be in at least HOT STANDBY within 6 hours and in HOT SHUTDOWN within the following 6 hours.

c. With three auxiliary feedwater pumps inoperable, immediately initiate corrective action to restore at least one auxiliary feedwater pump to OPERABLE status as soon as possible.

SURVEILLANCE REQUIREMENTS

4.7.1.2 In addition to the requirements of Specification 4.0.5 each auxiliary feedwater pump shall be demonstrated OPERABLE by: R2

a. Verifying that:

1. each motor-driven pump develops a differential pressure of greater than or equal to the values indicated below on recirculation flow.

2A-A: 1524 psid R105

2B-B: 1464 psid

2. the steam turbine-driven pump develops a differential pressure of greater than or equal to 1180 psid on recirculation flow when the secondary steam supply pressure is greater than 842 psig. The provisions of Specification 4.0.4 are not applicable for entry into MODE 3. R105

REPLACE ENTIRE PAGE WITH NEW PAGES 3/4 7-5, 3/4 7-6, and 3/4 7-6a.

SURVEILLANCE REQUIREMENTS (Continued)

3. at least once per 31 days, each automatic control valve in the flow path is OPERABLE whenever the auxiliary feedwater system is placed in automatic control or when above 10% of RATED THERMAL POWER. R104

b. At least once per 18 months during shutdown* by: R68

1. Verifying that each automatic valve in the flow path actuates to its correct position upon receipt of an auxiliary feedwater actuation test signal and a low auxiliary feedwater pump suction pressure test signal.

2. Verifying that each auxiliary feedwater pump starts as designed automatically upon receipt of an auxiliary feedwater actuation test signal.

c. At least once per 7 days by verifying that each non-automatic valve in the auxiliary feedwater system flowpath is in its correct position.

*The provisions of Specification 4.0.4 are not applicable for entry into MODE 3 for the turbine-driven Auxiliary Feedwater Pump. R68

PLANT SYSTEMS

AUXILIARY FEEDWATER (AFW) SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.1.2 Three auxiliary feedwater trains shall be OPERABLE.

Note for LCO 3.7.1.2

Only one AFW train, which includes a motor driven pump, is required to be OPERABLE in MODE 4.

APPLICABILITY: MODES 1, 2, and 3,
MODE 4 when steam generator is relied upon for heat removal.

ACTION:

a. With one AFW train inoperable in MODE 1, 2 or 3, restore the inoperable AFW train to OPERABLE status within 72 hours or be in HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 12 hours.

b. With two AFW trains inoperable in MODE 1,2 or 3, be in at least HOT STANDBY within 6 hours and in HOT SHUTDOWN within the following 6 hours.

c. With three AFW trains inoperable in MODE 1,2 or 3, immediately initiate corrective action to restore at least one AFW train to OPERABLE status.

Note for ACTION c.

LCO 3.0.3 and all other LCO ACTIONS requiring MODE changes are suspended until one AFW train is restored to OPERABLE status.

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d. With the required AFW train inoperable in MODE 4, immediately initiate action to restore the required AFW train to OPERABLE status.

SURVEILLANCE REQUIREMENTS

4.7.1.2.1 At least once per 31 days, verify each AFW manual, power operated, and automatic valve in each water flow path, and in both steam supply flow paths to the steam turbine driven pump, that is not locked, sealed, or otherwise secured in position, is in the correct position.

4.7.1.2.2. At least once per 92 days, verify the developed head of each AFW at the flow test point is greater than or equal to the required developed head.

Note for 4.7.1.2.2

Not required to be completed for the turbine driven AFW pump until 24 hours after steam supply pressure is greater than or equal to 842 psig.

4.7.1.2.3 Once every 18 months, verify each AFW automatic valve that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.

Note for 4.7.1.2.3

Not applicable in MODE 4 when steam generators are relied upon for heat removal.

SURVEILLANCE REQUIREMENTS (Continued)

4.7.1.2.4 Once every 18 months, verify each AFW pump starts automatically on an actual or simulated actuation signal.

Note for 4.7.1.2.4

1. Not required to be completed for the turbine driven AFW pump until 24 hours after steam supply pressure is greater than or equal to 842 psig.

2. Not applicable in MODE 4 when steam generator(s)are relied upon for heat removal.

SAFETY VALUES (Continued)

X = Total relieving capacity of all safety valves per steam line in lbs/hour, 4.75×10^6 lbs/hr at 1170 psig

Y = Maximum relieving capacity of any one safety valve in lbs/hour, 9.5×10^5 lbs/hr at 1170 psig.

INSERT A

3/4.7.1.2 AUXILIARY FEEDWATER SYSTEM

~~The OPERABILITY of the auxiliary feedwater system ensures that the Reactor Coolant System can be cooled down to less than 350°F from normal operating conditions in the event of a total loss of off-site power.~~

~~The steam driven auxiliary feedwater pump is capable of delivering 880 gpm (total feedwater flow) and each of the electric driven auxiliary feedwater pumps are capable of delivering 440 gpm (total feedwater flow) to the entrance of the steam generators at steam generator pressures of 1100 psia. At 1100 psia the open steam generator safety valve(s) are capable of relieving at least 11% of nominal steam flow. A total feedwater flow of 440 gpm at pressures of 1100 psia is sufficient to ensure that adequate feedwater flow is available to remove decay heat and reduce the Reactor Coolant System temperature to less than 350°F where the Residual Heat Removal System may be placed into operation. The surveillance test values ensure that each pump will provide at least 440 gpm plus pump recirculation flow against a steam generator pressure of 1100 psia.~~

Each motor-driven auxiliary feedwater pump (one Train A and one Train B) supplies flow paths to two steam generators. Each flow path contains an automatic air-operated level control valve (LCV). The LCVs have the same train designation as the associated pump and are provided trained air. The turbine-driven auxiliary feedwater pump supplies flow paths to all four steam generators. Each of these flow paths contains an automatic air-operated LCV, two of which are designated as Train A, receive A-train air, and provide flow to the same steam generators that are supplied by the B-train motor-driven auxiliary feedwater pump. The remaining two LCVs are designated as Train B, receive B-train air, and provide flow to the same steam generators that are supplied by the A-train motor-driven pump. This design provides the required redundancy to ensure that at least two steam generators receive the necessary flow assuming any single failure. It can be seen from the description provided above that the loss of a single train of air (A or B) will not prevent the auxiliary feedwater system from performing its intended safety function and is no more severe than the loss of a single auxiliary feedwater pump. Therefore, the loss of a single train of auxiliary air only affects the capability of a single motor-driven auxiliary feedwater pump because the turbine-driven pump is still capable of providing flow to two steam generators that are separate from the other motor-driven pump. BR-1

Two redundant steam sources are required to be operable to ensure that at least one source is available for the steam-driven auxiliary feedwater (AFW) pump operation following a feedwater or main steam line break. This requirement ensures that the plant remains within its design basis (i.e., AFW to two intact steam generators) given the event of a loss of the No. 1 steam generator BR-

INSERT A

The AFW System is configured into three trains. The AFW System is considered OPERABLE when the components and flow paths required to provide redundant AFW flow to the steam generators are OPERABLE. This requires that the two motor-driven AFW pumps be OPERABLE in two diverse paths, each supplying AFW to separate steam generators. The turbine-driven AFW pump is required to be OPERABLE with redundant steam supplies from each of two main steam lines upstream of the MSIV's, and shall be capable of supplying AFW to any steam generator. The piping, valves, instrumentation, and controls in the required flow paths also are required to be OPERABLE.

The AFW System mitigates the consequences of any event with loss of normal feedwater.

The design basis of the AFW System is to supply water to the steam generator to remove decay heat and other residual heat by delivering at least the minimum required flow rate to the steam generators at a pressure corresponding to 1085 psig. This pressure is in excess of the maximum expected steam generator pressure with the existing safety valve setpoints.

In addition, the AFW System must supply enough makeup water to replace steam generator secondary inventory lost as the unit cools to MODE 4 conditions. Sufficient AFW flow must also be available to account for flow losses such as pump recirculation and line breaks.

The limiting Design Basis Accidents (DBAs) and transients for the AFW System are as follows:

a. Feedwater Line Break (FWLB); and

b. Loss of main feedwater (MFW).

In addition, the minimum available AFW flow and system characteristics are credited for removing decay heat in the analysis of a small break loss of coolant accident (LOCA).

The AFW System design is such that it can perform its function following a FWLB between the MFW isolation valves and containment, combined with a loss of offsite power following turbine trip, and a single active failure of the steam turbine-driven AFW pump (above 50% power) or one motor-driven AFW pump (below 50% power with steam generator low level reactor trip time delay). For 50% power operation and higher, one motor-driven AFW pump is assumed to deliver to the broken MFW header at the pump run-out flow. Sufficient flow would be delivered to the intact steam generator by the redundant motor-driven AFW pump.

INSERT A (Continued)

For partial power operation (below 50% power with trip time delay active), one motor-driven AFW pump is assumed to fail. All flow from the turbine-driven AFW pump and the redundant motor-driven AFW pump is assumed to deliver to the broken MFW header until the faulted steam generator is isolated by operator action 10 minutes after the break. After isolation of the faulted steam generator, sufficient flow is delivered to the intact steam generator by the turbine-driven and redundant motor-driven AFW pump.

The Engineered Safety Feature Actuation System (ESFAS) automatically actuates the AFW turbine-driven pump and associated valves and controls when required to ensure an adequate feedwater supply to the steam generators during loss of power.

The surveillance requirements (SRs) provide a means of ensuring the AFW system components are capable of supplying required flow to the steam generators, the flow path is aligned correctly, and the automatic functions actuate as designed. The automatic functions are verified through either an actual or simulated actuation signal. The actuation signal associated with SR 4.7.1.2.3 (automatic valve actuation) include the AFW actuation test signal and the low AFW pump suction pressure test signal. The actuation signal associated with SR 4.7.1.2.4 (automatic pump start) includes only the AFW actuation test signal.

ENCLOSURE 2

PROPOSED TECHNICAL SPECIFICATION (TS) CHANGE

SEQUOYAH NUCLEAR PLANT (SQN) UNITS 1 AND 2

DOCKET NOS. 50-327 AND 50-328

(TVA-SQN-TS-94-06)

DESCRIPTION AND JUSTIFICATION FOR

SPECIFICATION REQUIREMENT 3/4.7.1.2

AND BASES 3/4.7.1.2

Description of Change

TVA proposes to modify the Sequoyah Nuclear Plant (SQN) Units 1 and 2 Technical Specifications (TSs) to incorporate the Westinghouse Electric Corporation (NUREG-1431) standard TS (STS) for the auxiliary feedwater (AFW) system. The proposed TS change replaces SQN's current AFW specification (3/4.7.1.2) with new AFW specifications that are modeled after the Westinghouse STS. A bases change is also made to more accurately reflect the limiting design basis assumptions for SQN's AFW system. Since the proposed change represents a complete replacement of the limiting condition for operation (LCO), applicability, action requirements, and surveillance requirements (SRs), refer to the attachment to this enclosure for a detailed comparison of each change.

Reason for Change

By letter dated September 23, 1993, TVA submitted a voluntary licensee event report (LER 50-327/93024) to inform the NRC staff of a condition involving an accident scenario assumption associated with SQN's main feedwater line-break analysis. The following paragraph provides an excerpt from the abstract section of the LER.

"The current feedwater line-break analysis assumes the worst-case single failure to be the turbine-driven auxiliary feedwater (AFW) pump. However, during a review of a level control valve modification, it was noted that Westinghouse Electric Corporation had considered a single failure of a motor-driven AFW pump during the Eagle 21 reanalysis in 1989. This analysis assumes that 1,070 gallons per minute (GPM) of AFW flow (410 gpm from one motor-driven AFW pump and 660 gpm from the turbine-driven AFW pump) was available. The design flow capacity of the turbine-driven AFW pump is 880 gpm. The technical specification surveillance test acceptance criteria only tests for a pump flow capacity of 440 gpm. A review of test data from the turbine-driven pump indicates that the pump's flow capacity is greater than the 660 gpm required for this accident scenario. The cause of this condition was a failure of the engineering design reviews by Westinghouse and TVA to ensure that valid assumptions were used in the analysis."

TVA requested that Westinghouse conduct a review of SQN's other accident analyses affecting the AFW system to ensure that other design assumptions remain valid. The reevaluation also addressed the acceptability of establishing minimum required flow from one turbine-driven AFW pump at 660 gpm. Based on the reevaluation, a change to SQN's AFW TS (Specification 3/4.7.1.2 and Bases Section 3/4.7.1.2), and Final Safety Analysis Report (FSAR) is required to establish new minimum AFW flow requirements and to identify the design basis assumptions.

Upon initial review of these changes, TVA proposed to revise the AFW TSs and bases section to reflect the new AFW flow requirements and design basis assumptions. A TS change to revise the SR requirement that contains numerical differential pressure (dp) test values for SQN's AFW pumps was considered. Upon further review of the STS for Westinghouse plants (NUREG-1431), TVA noted that numerical dp test values are not

included as part of the SR. The SR from the STS verifies the developed head of each AFW pump at the flow test point is greater than or equal to the required developed head. TVA considers the STS requirement to be an improvement over SQN's current TS surveillance for AFW based on the following:

1. The STS removes the numerical dp test values from the TSs to allow administrative control of these values within the design basis of the plant.

2. The STS provides flexibility for testing the AFW pumps at a flow test point on the pump's required head curve. This will allow testing in the normal operation alignment. SQN's current surveillance restricts testing to the recirculation alignment only.

3. The STS reduces the administrative burden for processing TS changes when design basis changes take place that affect SQN's AFW system (i.e., changes in the numerical dp test values).

In addition, the STS provides improvements or clarifications within the LCO, action requirements, and SRs that are not contained in SQN's current AFW specification. These additional improvements or clarifications include the following:

1. The STS LCO requires one AFW train (motor-driven pump and associated flow path) to be operable in Mode 4 when steam generators (S/Gs) are relied upon for heat removal. SQN's AFW TS does not contain the Mode 4 requirement.

2. A STS action requirement associated with three inoperable AFW trains contains a clarification note to suspend Specification 3.0.3 entry and all other LCO required actions requiring mode changes. SQN's AFW TS does not contain this clarification.

3. The STS SRs provide a relaxation in the frequency and a reduction in scope for verifying nonautomatic valve position. In addition, the STS SRs for automatic valves relaxes the surveillance to require verification of valve position in lieu of valve manipulation and testing. These relaxations provide a substantial cost savings to TVA that are further discussed below.

The relaxation in frequency for verifying nonautomatic valve position (from 7 days to 31 days) and the reduction in scope (eliminate valves that are locked, sealed, or otherwise secured) provides a cost savings to TVA of approximately $450,000 for the remaining operational life of the plant based on the man-hours saved. In addition, the standard SR provides improvements with regard to personnel safety. One operator is currently required to enter the main steam valve vault every 7 days during plant operations and climb a ladder to verify the correct position of two manual valves per unit. The relaxation to exclude from inspection valves which are locked, sealed, or otherwise secured, reduces the risk of personnel injury and thus provides an industrial safety benefit.

The relaxation in the SR for automatic valves provides a cost savings to TVA of approximately $224,000 for the remaining operational life of the plant, based on the man-hours. The current method of determining if these valves are operable is to (1) place the valves in manual control, (2) close each valve, (3) adjust the level controller setpoint around the actual S/G level, (4) return the valves to automatic control, and (5) verify that the valves open and close. The number of personnel needed for manipulation of the automatic valves involves one unit operator, two assistant unit operators, and two electricians for a four-hour duration. The proposed relaxation to perform a verification of valve position in lieu of valve manipulation reduces the number of test personnel to one assistant unit operator for the same time duration. In addition, the relaxation eliminates the potential for human error since manipulation of the automatic valves involves electrical jumpers to simulate AFW pump operation in the automatic circuit to allow opening and closing of the valves. Based on the above improvements, TVA is proposing changes that incorporate the STS requirements into SQN's AFW specification.

Justification for Change

TVA's proposed TS change replaces SQN's current AFW system Specification 3/4.7.1.2 with the Westinghouse STS for pressurized water reactors (NUREG-1431). Because of the overall similarity in the requirements between SQN's current AFW specification and the STS version, the TS requirements for the AFW system remain essentially unchanged. New format and terminology are introduced by the STS version. Specific differences between the SQN's current AFW TS and the STS were evaluated by TVA and found to be acceptable. A discussion of TVA's evaluation is provided below.

A. LCO

SQN's current LCO requirement for AFW states:

"At least three independent steam generator auxiliary feedwater pumps and associated flow paths shall be OPERABLE with:

a. Two motor-driven auxiliary feedwater pumps, each capable of being powered from separate shutdown boards, and

b. One steam turbine-driven auxiliary feedwater pump capable of being powered from an OPERABLE steam supply system."

The STS replaces the above LCO with a single sentence that states:

"Three auxiliary feedwater trains shall be OPERABLE."

The STS LCO introduces the term "train." The term "train" denotes the combination of components and flow path required to ensure the performance of the AFW function. The use of this term remains consistent with SQN's current AFW LCO that requires three independent pumps and their associated flow paths. SQN's AFW system includes two independent motor-driven pumps each with independent power supplies (i.e., a separate shutdown board for each motor-driven pump) and a turbine-driven AFW pump with redundant steam supplies. The STS bases states: "The AFW System is considered OPERABLE when the components and flow paths required to provide redundant AFW flow to the steam generators are OPERABLE. This requires that the two motor-driven AFW pumps be OPERABLE in two diverse paths, each supplying AFW to separate steam generators. The turbine-driven AFW pump is required to be OPERABLE with redundant steam suppiies from each of two main steam lines upstream of the MSIVs, and shall be capable of supplying AFW to any of the steam generators." Since SQN's AFW System satisfies the STS condition for operability, the STS LCO is considered to be equivalent to SQN's current LCO requirements.

B. Applicability

The current LCO for SQN's AFW system (LCO 3.7.1.2) is applicable in Modes 1, 2 and 3. TVA's proposed change adopts the STS applicability for Modes 1, 2, and 3 and extends the applicability to Mode 4. The Mode 4 condition would require that one motor-driven AFW pump be maintained operable when S/Gs are relied upon for heat removal. In Mode 4, the AFW system may be used for heat removal via the S/Gs until the residual heat removal (RHR) system can be placed in service. In Modes 5 and 6, the S/Gs are not normally used for heat removal, and thereby the AFW system is not required.

The application of the Mode 4 requirement to SQN is considered to be an enhancement that provides diversity for decay heat removal. Under accident conditions, SQN's commitment is to cool the plant to hot standby (Mode 3) conditions rather than cold shutdown (Mode 5) conditions. The Mode 3 design bases is a result of the RHR cooling configuration that does not meet single failure criteria (i.e., a single failure of either of two series RHR valves will prevent alignment to the RHR cooling mode). While the design basis for SQN is Mode 3, the addition of the Mode 4 requirements provide consistency between the AFW specification and SQN Specification 3.4.1.3, Reactor Coolant Loops and Coolant Circulation.

C. Actions

SQN's current action requirements for the AFW LCO 3.7.1.2 are associated with the inoperability of the AFW pump(s). The following paragraph provides a comparison of SQN's current action requirements and the proposed action requirements. SQN's current action requirements have three actions, beginning with the loss of a single pump (Action a) and progressing to the loss of a third pump (Action c).

Action a (one AFW pump inoperable) contains a 72-hour action for restoring the inoperable pump. If the pump is not restored within 72 hours, a plant shutdown is initiated with 6 hours for achieving hot standby followed by an additional 6 hours for achieving hot shutdown.

Action b (two AFW pumps inoperable) contains no allowable outage time for restoring an inoperable pump and the same plant shutdown requirements as Action a above apply.

Action c involves the case when all three AFW pumps become inoperable. This case requires immediate corrective action for restoring at least one AFW pump as soon as possible. Plant shutdown requirements are not included in this action since the means of cooling the plant to Mode 4 via the AFW system have been lost. The AFW system serves as the primary source for removing decay heat until the RHR system is placed in service in Mode 4.

TVA's proposed change adopts the STS requirements which are similar to SQN's current action requirements for AFW. A description of the differences and justification for the differences between TVA's proposed action requirements and the STS action requirements are provided below. In addition, justification is provided for any requirements or provisions that are contained in the STS, but are not incorporated into TVA's proposed change.

TVA's first proposed action requirement is patterned after Action B.1 in the STSs. The proposed action is identical to the STSs with regard to the condition (one train of AFW inoperable in Mode 1, 2 or 3), required action (restore the AFW train to operable status), and completion time (72 hours). The proposed action also retains the shutdown provisions in the event a train of AFW is not restored within 72 hours. In the event a train of AFW is not restored within 72 hours, the unit must be placed in at least hot standby (Mode 3) within 6 hours and in hot shutdown (Mode 4) within the following 12 hours. These timeframes are consistent with the STS and are considered reasonable based on an operating experience to reach the required unit conditions from full power conditions in an orderly manner and without challenging the unit systems. It should be noted that the STS contains a site specific condition (Action A.1) that addresses one inoperable steam supply to the turbine driven AFW pump. Pending further evaluation of the applicability of this action, TVA has elected not to adopt the relaxations provided by the site specific provisions of STS Action A.1.

The second proposed action adopts a plant specific requirement from the STS for the condition when two trains of AFW are inoperable in Mode 1, 2, or 3. The proposed action requirement is applicable to SQN [illegible] is similar to SQN's current TS (Action b) for the condition when two AFW pumps are inoperable. For the case when two AFW trains are inoperable in Mode 1, 2, or 3, the unit must be placed in a mode in which

the LCO does not apply. To achieve this status the unit must be placed in at least Mode 3 within 6 hours, and in Mode 4 within the following 6 hours. It should be noted that the plant specific condition in the STS currently states:

"Two AFW trains inoperable in MODE 2 or 3".

The standard TS bases for this condition (see bases Paragraph C.1 and C.2) reads: ". . . two AFW trains are inoperable in MODE 1, 2, or 3, . . ." The exclusion of Mode 1 in the STS condition is an apparent typographical error.

The third proposed action adopts a plant specific requirement from the STS for the condition when three trains of AFW are inoperable in Mode 1, 2, or 3. The proposed action requirement is applicable to SQN and is similar to SQN's current TS (Action c) for the condition when three AFW pumps are inoperable. For the case when three AFW trains are inoperable in Mode 1, 2, or 3, the plant is in a seriously degraded condition with only limited means of conducting a cooldown. The unit should not be perturbed by any action, including a power change that might result in a trip. The proposed action is identical to the STS for restoring one AFW train to operable status immediately. In addition, TVA has adopted the note from the STS that suspends entry into Specification 3.0.3 or other LCO actions requiring mode changes until one AFW train is restored to operable status. This is considered to be a clarification to SQN's existing action requirement.

The fourth proposed action is similar to the STS for the condition involving an inoperable AFW train in Mode 4. The proposed action states:

"With the required AFW train inoperable in MODE 4, immediately initiate action to restore the required AFW train to OPERABLE status."

The term "required AFW train" is used in conjunction with the notation provided in the LCO that designates a motor-driven AFW pump to be operable in Mode 4. Accordingly, the term "required" applies to the designated motor-driven AFW pump that is being maintained operable to satisfy the LCO notation. In addition, the immediate action requirement remains consistent with another immediate action requirement from SQN LCO 3.4.1.3. This LCO is also applicable in Mode 4 and is associated with maintaining reactor coolant and/or RHR loops operable for maintaining forced circulation in the RCS. Similar to the proposed AFW action, the LCO 3.4.1.3 actions require immediate corrective actions for reestablishing forced circulation in the RCS.

D. SRs

Current SRs

SQN's current AFW system TS contains a single SR 4.7.1.2 that is subdivided into Requirements a, b, and c. The first requirement (SR 4.7.1.2.a) demonstrates operability of each AFW pump (two motor-driven pumps and a turbine-driven pump) by measuring the dp across each pump while the pump is on recirculation flow.

Numerical dp test values are provided for each pump. These dp values correspond to the required developed head (minimum required AFW flow) for each pump. For the turbine-driven pump, the SR states that the provisions of Specification 4.0.4 are not applicable for entry into Mode 3. This provision allows entry into Mode 3 for achieving the a steam-supply pressure (842 pounds per square inch gauge [psig]) to test the turbine-driven pump. Included with SR 4.7.1.2.a is a 31-day verification that the automatic control valves in the flow path are operable.

The sec nd requirement (SR 4.7.1.2.b) verifies that each automatic valve in the flow path actuates to its correct position upon receipt of an AFW actuation test signal and a low AFW pump suction pressure test signal. In addition the automatic start of each AFW pump is verified upon receipt of an AFW actuation test signal. These tests are performed at least once every 18 months during shutdown. A footnote is provided as an exemption from Specification 4.0.4 to allow entry into Mode 3 for testing the turbine-driven AFW pump.

The third requirement (SR 4.7.1.2.c) verifies that each nonautomatic valve in the flow path is in its correct position. This verification of valve position is performed at least once every 7 days.

Proposed SRs

The first proposed SR (SR 4.7.1.2.1) corresponds to SQN's current 31-day verification that the automatic control valves in the flow path are operable. The proposed SR states:

"At least once per 31 days, verify each AFW manual, power operated, and automatic valve in each water flow path, and in both steam supply flow paths to the steam turbine driven pump, that is not locked, sealed or otherwise secured in position, is in the correct position."

SQN's automatic control valves in the water flow path consist of level control valves that modulate to maintain S/G level at 33 percent. The current method of surveillance for these valves involves valve manipulation. The intent of the STS SR for these valves is not to require testing or valve manipulation; rather it involves verification that those valves capable of being mispositioned are in the correct position. The AFW automatic valves, if not in the proper position, will be actuated by the AFW actuation signal. This actuation test will be performed every 18 months under the proposed SR 4.7.1.2.3 (discussed below). This surveillance will ensure the automatic valves actuate to their required position upon receipt of an AFW actuation signal. Other 18-month tests associated with SQN's AFW automatic valves include: (1) response time testing - SR 4.3.2.1.3, and (2) channel calibration tests SRs 4.3.3.5 and 4.3.3.7, In addition, SQN's AFW

automatic valves are cycled and timed every quarter and every two years in accordance with the Inservice Test Program. The 18-month frequency is considered acceptable based on engineering judgement, operating experience, and the need to perform this surveillance under conditions that apply during an outage. Accordingly, the proposed SR 4.7.1.2.1, in conjunction with the proposed SR 4.7.1.2.3 ensure the AFW automatic valves are capable of performing their intended function and are in their required position for AFW operation.

Note that two valves (FCV-3-400 and FCV-3-401A) in the miniflow line for SQN's motor-driven AFW pumps are automatic valves; however, these valves will not be included under the proposed SR 4.7.1.2.1 because these valves are not within the flow path and are designed to automatically close on an accident signal. The valves will however be tested every 18 months in the proposed SR 4.7.1.2.3 that verifies each AFW automatic valve that is not locked, sealed, or otherwise secured in position actuates to the correct position upon receipt of an actual or simulated actuation signal.

One additional change that is associated with adopting the standard SR 4.7.1.2.1 is discussed below:

SQN AFW TS contains a SR 4.7.1.2.c that states:

> "At least once per 7 days by verifying that each non-automatic valve in the auxiliary feedwater system flowpath is in its correct position."

This SR is no longer required based on the adoption of the standard SR that verifies correct valve position every 31 days for manual, power operated, and automatic valves in the flow path. The relaxation from 7 days to 31 days for nonautomatic (manual) valves is considered acceptable based on existing procedural controls for valve configuration. Accordingly, the current SR 4.7.1.2.c is deleted and the requirement for verifying nonautomatic valve position is encompassed by the standard SR.

The second proposed SR (SR 4.7.1.2.2) is associated with the AFW pump tests that verify each AFW pump's developed head is greater than or equal to the required developed head. A 92-day frequency for testing each AFW pump is provided for the purpose of maintaining consistent test frequencies between the TS SR and SQN's in-service test program. With regard to this frequency requirement, TVA elected not to adopt the STS frequency (i.e., 31 days on a staggered test basis) since the term "staggered test basis" is defined differently within the STS from SQN's TS definition. Incorporation of the STS definition for staggered test basis impacts a number of other specifications and would significantly expand the scope of the change. This change will be considered at a later date.

The third proposed SR (SR 4.7.1.2.3) is an 18-month surveillance that verifies the automatic valves actuate to the correct position upon receipt of an actuation signal. The proposed SR states:

> "Once every 18 months, verify each AFW automatic valve that is not locked, sealed, or otherwise secured in position, actuates to the correct position upon receipt of an actual or simulated actuation signal.
>
> Note for 4.7.1.2.3
> Not applicable in MODE 4 when steam generators are relied upon for heat removal."

The proposed SR retains the same test requirements that currently exist in SQN's TS SR 4.7.1.2.b.1. Four additional provisions that provide either test flexibility or clarification of the surveillance are included with the proposed SR. These additional provisions are adapted from the STS and include:

1. The initiating signal as contained in the STS may be an "actual or simulated" signal. SQN SR 4.7.1.2.6.1 currently states "test signal," which limits the initiation signal to a simulated signal. The flexibility for using an "actual" signal is not considered to be a significant benefit since testing is typically performed by simulating an AFW actuation signal; however, the situation may arise when an actual signal could be used to satisfy the SR in lieu of a preplanned "test" or simulated signal.

   SQN's current SR 4.7.1.2.6.1 verifies that each automatic valve in the flow path actuates to its correct position upon receipt of two different test signals: (1) an AFW actuation test signal, and (2) a low AFW pump suction pressure test signal. The proposed SR 4.7.1.2.3 verifies that each automatic valve actuates to the correct position on an "actual or simulated actuation signal." It is important to note that the new phrase "actual or simulated actuation signal" does not alter the requirement with regard to the type of actuation signal. This testing is performed under Surveillance Instruction (SI-OPS-003-118.0). The SI will retain both the AFW actuation test signal and the low AFW pump suction pressure test signal. Accordingly, the proposed SR 4.7.1.2.3 continues to include both test signals.

2. The words "that is not locked, sealed, or otherwise secured in position" are added for clarification to note that this surveillance is not applicable to valves that are in the required position and are under administrative control. It should be noted that this provision is not currently in the STS, but has been approved for inclusion in the next upgrade to the STS (see Reference 3).

3. A note is provided with the SR that reads:

   "Not applicable in MODE 4 when steam generators are relied upon for heat removal."

   The above note is included with the SR as a clarification. In Mode 4, the AFW actuation signals are not required to be operable (refer to SQN's engineered safety feature actuation system [ESFAS] instrumentation Specification 3/4.3.2 for AFW). In Mode 4 the required AFW train is already aligned and operating; therefore the SR is not required. This provision is not currently contained in the STS, but has been approved for inclusion in the next upgrade to the STS (see Reference 4).

4. The STS SR currently states that this SR is required to be performed in Mode 1, 2, or 3. TVA proposes to delete the words "in MODE 1, 2, or 3." The requirement for performing the SR in MODE 1, 2, or 3 is considered to be unnecessary and redundant to the LCO applicability for Mode 1, 2 or 3. The proposed deletion of these words is also provided for comment in the next upgrade to the STS (see Reference 4).

The fourth proposed SR (SR 4.7.1.2.4) is a 18-month surveillance that verifies the AFW pumps automatically start from an actuation signal. The proposed SR states:

"Once every 18 months, verify each AFW pump starts automatically on an actual or simulated actuation signal.

Notes for 4.7.1.2.4

A. Not required to be completed for the turbine driven AFW pump until 24 hours after steam supply pressure is greater than or equal to 842 psig.

B. Not applicable in MODE 4 when steam generators are relied upon for heat removal."

The proposed SR retains the same test requirements that currently exist in SQN's TS SR 4.7.1.2.b.2. Two additional provisions provide either test flexibility or clarification of the surveillance. These additional provisions are adapted from the STS and are discussed below:

1. The initiating signal may be an actual or simulated signal. SQN SR 4.7.1.2.6.2 currently states test signal, which limits the initiation signal to a simulated signal. The flexibility for using an actual signal is not considered to be a significant benefit since testing is typically performed by simulating an AFW actuation signal; however, a situation may arise when an actual signal could be used to satisfy the SR in lieu of a preplanned test or simulated signal.

2. Two notes are provided with the proposed SR for clarification. The first note states that the SR would not be required to be completed for the turbine-driven AFW pump until 24 hours after steam supply pressure is greater than or equal to 842 psig. This note is applicable to SQN because it allows the necessary conditions to be established for performing the SR and provides a suitable timeframe to complete the testing. The second note states the SR is not applicable in Mode 4 when S/Gs are relied upon for heat removal. This note is identical to the note provided with SR 4.7.1.2.3 described above and is based on the same justification.

One additional comment is provided concerning a site specific SR (SR 3.7.5.5) that is in the STS that is not being incorporated. The STS SR 3.7.5.5 states:

"Verify proper alignment of the required AFW flow paths by verifying flow from the condensate storage tank to each steam generator."

The STS bases for this SR states that this SR is not required for those units that use AFW for normal start-up and shutdown. Since SQN's AFW system is used for normal start-up and shutdown, this SR is not applicable to SQN.

In conclusion, TVA's proposed changes provide improved requirements for ensuring operability of SQN' AFW system. The proposed TS change provides the appropriate requirements to ensure the AFW system is tested and maintained to support the design basis assumptions.

E. References

1. Sequoyah Final Safety Analysis Report, Amendment 10, Section 10.4.7.2.

2. NUREG-1431, Revision 0, STS, Westinghouse Plants.

3. NUREG-1431, Change Package NRC-03, Comment Number C.9, R1, approved October 7, 1993.

4. NUREG-1431, Change Package WOG-27, Comment Number C.1, approved August 26, 1993.

Environmental Impact Evaluation

The proposed change does not involve an unreviewed environmental question because operation of SQN Units 1 and 2 in accordance with this change would not:

1. Result in a significant increase in any adverse environmental impact previously evaluated in the Final Environmental Statement (FES) as modified by NRC's testimony to the Atomic Safety and Licensing Board, supplements to the FES, environmental impact appraisals, or decisions of the Atomic Safety and Licensing Board.

2. Result in a significant change in effluents or power levels.

3. Result in matters not previously reviewed in the licensing basis for SQN that may have a significant environmental impact.

ATTACHMENT TO ENCLOSURE 2

DESCRIPTION OF CHANGES FOR

TVA-SQN-TS-94-06

1. Limiting Condition for Operation (LCO)

The current LCO for SQN's auxiliary feedwater (AFW) system contains the following requirement:

"At least three independent steam generator auxiliary feedwater pumps and associated flow paths shall be OPERABLE with:

a. Two motor-driven auxiliary feedwater pumps, each capable of being powered from separate shutdown boards, and

b. One steam turbine-driven auxiliary feedwater pump capable of being powered from an OPERABLE steam supply system."

TVA's proposed change removes SQN's current LCO requirements and adopts the standard TS LCO requirement that reads:

"Three AFW trains shall be OPERABLE."

In addition, the standard TS provides a note with the LCO that states:

"Only one AFW train, which includes a motor driven pump, is required to be OPERABLE in Mode 4."

2. Applicability

SQN's current AFW LCO is applicable in Modes 1, 2 and 3. TVA's proposed change adopts the standard TS applicability for Modes 1, 2, 3. In addition, TVA's proposed change adopts the a new provision in the standard TS that extends the applicability to Mode 4 when steam generators are relied upon for heat removal.

3. Actions

SQN's current AFW ACTION requirements are as follows:

"a. With one auxiliary feedwater pump inoperable, restore the required auxiliary feedwater pumps to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.

b. With two auxiliary feedwater pumps inoperable, be in at least HOT STANDBY within 6 hours and in HOT SHUTDOWN within the following 6 hours.

c. With three auxiliary feedwater pumps inoperable, immediately initiate corrective action to restore at least on auxiliary feedwater pump to OPERABLE status as soon as possible."

TVA's proposed change adopts action requirements similar to the standard TS. The proposed action requirements for SQN's AFW TSs read as follows:

a. With one AFW train inoperable in MODE 1, 2, or 3, restore the inoperable AFW train to OPERABLE status within 72 hours or be in HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 12 hours.

b. With two AFW trains inoperable in MODE 1,2 or 3, be in at least HOT STANDBY within 6 hours and in HOT SHUTDOWN within the following 6 hours.

c. With three AFW trains inoperable in MODE 1, 2, or 3, immediately initiate corrective action to restore at least one AFW train to OPERABLE status.

Note for ACTION c.
LCO 3.0.3 and all other LCO ACTIONS requiring MODE changes are suspended until one AFW train is restored to OPERABLE status.

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d. With the required AFW train inoperable in MODE 4, immediately initiate action to restore the required AFW train to OPERABLE status.

4. Surveillance Requirements

SQN's current AFW TS surveillance requirement 4.7.1.2 states the following:

"In addition to the requirements of Specification 4.0.5 each auxiliary feedwater pump shall be demonstrated OPERABLE by :

a. Verifying that:

1. each motor-driven pump develops a differential pressure of greater than or equal to the values indicated below on recirculation flow.

1A-A: 1450 psid.

1B-B: 1500 psid.

2. the steam turbine-driven pump develops a differential pressure of treater than or equal to 1201 psid on recirculation flow when the secondary steam supply pressure is greater than 842 psig. The provisions of Specification 4.0.4 are not applicable for entry into MODE 3.

3. at least once per 31 days, each automatic control valve in the flow path is OPERABLE whenever the auxiliary feedwater system is placed in automatic control or when above 10% of RATED THERMAL POWER.

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

1. Verifying that each automatic valve in the flow path actuates to its correct position upon receipt of an auxiliary feedwater actuation test signal and a low auxiliary feedwater pump suction pressure test signal.

2. Verifying that each auxiliary feedwater pump starts as designed automatically upon receipt of an auxiliary feedwater actuation test signal.

c. At least once per 7 days by verifying that each non-automatic valve in the auxiliary feedwater system flowpath is in its correct position.

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* The provisions of Specification 4.0.4 are not applicable for entry into Mode 3 for the turbine-driven auxiliary feedwater pump.

TVA's proposed change replaces the above requirements with surveillance requirements similar to the standard TS. The SRs that are incorporated into SQN AFW TSs are as follows:

4.7.1.2.1 At least once per 31 days, verify each AFW manual, power operated, and automatic valve in each water flow path, and in both steam supply flow paths to the steam turbine driven pump, that is not locked, sealed, or otherwise secured in position, is in the correct position.

4.7.1.2.2 At least once per 92 days, verify the developed head of each AFW at the flow test point is greater than or equal to the required developed head.

Note for 4.7.1.2.2

Not required to be completed for the turbine driven AFW pump until 24 hours after steam supply pressure is greater than or equal to 842 psig.

4.7.1.2.3 Once every 18 months, verify each AFW automatic valve that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.

Note for 4.7.1.2.3

Not applicable in MODE 4 when steam generators are relied upon for heat removal.

4.7.1.2.4 Once every 18 months, verify each AFW pump starts automatically on an actual or simulated actuation signal.

Note for 4.7.1.2.4

1. Not required to be completed for the turbine driven AFW pump until 24 hours after steam supply pressure is greater than or equal to 842 psig.

2. Not applicable in MODE 4 when steam generator is relied upon for heat removal.

In addition to the above changes, TVA's proposed revision includes a change to the AFW bases (Section 3/4.7.1.2) to reflect SQN's AFW system design requirements.

ENCLOSURE 3

PROPOSED TECHNICAL SPECIFICATION CHANGE

SEQUOYAH NUCLEAR PLANT (SQN) UNITS 1 AND 2

DOCKET NOS. 50-327 AND 50-328

(TVA-SQN-TS-94-06)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATION

Significant Hazards Evaluation

TVA has evaluated the proposed technical specification (TS) change and has determined that it does not represent a significant hazards consideration based on criteria established in 10 CFR 50.92(c). Operation of Sequoyah Nuclear Plant (SQN) in accordance with the proposed amendment will not:

1. Involve a significant increase in the probability or consequences of an accident previously evaluated.

   The proposed TS change replaces SQN's auxiliary feedwater (AFW) system specification and the associated bases section with improved requirements that are modeled after the Westinghouse Standard (NUREG-1431) Technical Specification (STS). The proposed change is consistent with the STS for ensuring that three trains of AFW remain operable in Modes 1, 2, and 3. In addition, the proposed change provides a TS improvement by extending the limiting condition for operation (LCO) applicability to Mode 4. This LCO requirement for Mode 4 ensures that at least one motor-driven AFW pump remains operable when steam generators are being used for decay heat removal. The proposed 72 hour allowed outage time (for one inoperable train of AFW) is consistent with the STS and remains unchanged from SQN's current allowed outage time. One proposed change to relax shutdown requirements from 6 hours to 12 hours for achieving hot shutdown is considered to be acceptable. This relaxation is based on shutdown times contained in the STS and the operating experience to reach this condition from full power in an orderly manner without challenging plant systems. The proposed surveillance requirements (SRs) provide test frequencies that are consistent with the STS and are based on operating experience and the design reliability of the equipment. The proposed relaxation in surveillance frequency from 7 days to 31 days for verifying valve position in the AFW flow path is considered acceptable based on existing procedural controls for valve configuration. The proposed change to include a STS SR for verifying automatic valves in the flow path are in their correct position every 31 days (in lieu of valve manipulation) is considered acceptable based on existing surveillances that verify proper actuation of SQN's automatic AFW valves.

   The proposed changes provide TS improvements for SQN's AFW system that ensure the system operates within the bounds of SQN's AFW accident analysis as contained in the Final Safety Analysis Report (FSAR). This change does not involve a physical modification to SQN's AFW system. Accordingly, the proposed changes do not involve an increase in the probability or consequences of an accident previously evaluated.

2. Create the possibility of a new or different kind of accident from any previously analyzed.

   The proposed TS change incorporates requirements that bound the limiting design-basis accidents (DBAs) evaluated in SQN's FSAR. The TS bases have been revised to reflect the limiting DBAs and provide clarification with regard to the assumptions used in SQN's AFW accident analysis. No new event initiator has been created, not has any hardware been changed. This changes does not involve a physical change to SQN's AFW system or any other system. Therefore, the proposed change will not create the possibility of a new or different kind of accident from any previously analyzed.

3. Involve a significant reduction in a margin of safety.

   TVA's proposed change replaces SQN's AFW system TS requirements with TS requirements adopted from the Westinghouse STS. Because the overall similarity in the requirements between SQN's current AFW specification and the STS version, the TS requirements remain essentially unchanged. The proposed 72-hour allowed outage time (for one inoperable train of AFW) is consistent with the STS and remains unchanged from SQN's current allowed outage time. One proposed change to relax shutdown requirements from 6 hours to 12 hours for achieving hot shutdown is considered to be acceptable. This relaxation is based on shutdown times contained in the STS and the operating experience to reach this condition from full power in an orderly manner without challenging plant systems. The proposed SRs provide test frequencies that are consistent with the STS and are based on operating experience and the design reliability of the equipment. The proposed relaxation in surveillance frequency from 7 days to 31 days for verifying valve position in the AFW flow path is considered acceptable based on existing procedural controls for valve configuration. The proposed relaxation in surveillance frequency from 7 days to 31 days for verifying valve position in the AFW flow path is considered acceptable based on existing procedural controls for valve configuration. The proposed change to include a STS SR for verifying automatic valves in the flow path are in their correct position every 31 days (in lieu of valve manipulation) is considered acceptable based on other existing surveillances that verify proper actuation of SQN's automatic AFW valves.

   The proposed changes provide TS improvements for SQN's AFW System that ensure the system operates within the bounds of SQN's AFW accident analysis as contained in the FSAR. This change does not involve a physical modification to SQN's AFW system. Accordingly, the margin of safety has not been reduced.