ENCLOSURE 1 PROPOSED TECHNICAL SPECIFICATION CHANGE SEQUOYAH NUCLEAR PLANT UNITS 1 AND 2 DOCKET NOS. 50-327 AND 50-328

(TVA-SQN-TS-88-25)

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REACTOR COOLANT SYSTEM

RELIEF VALVES - OPERATING

LIMITING CONDITION FOR OPERATION

3.4.3.2 Two power relief valves (PORVs) and their associated block valves shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTION:

SEE ATTACHED ACTION

a. With one or more PORV(s) inoperable, within 1 hour either restore the PORV(s) to OPERABLE status or close the associated block valve(s) and remove power from the block valve(s); otherwise, be in at least HOT STANDBY within the next 6 hours and in COLD SHOTDOWN within the following 30 hours

b. With one or more block valve(s) inoperable, within 1 hour either restore the block valve(s) to OPERABLE status or close the block valve(s) and remove power from the block valve(s); otherwise, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

The provisions of Specification 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.4.3.2.1 In addition to the requirements of Specification 4.0.5, each PORV shall be demonstrated OPERABLE at least once per 18 months by:

- a. Performance of a CHANNEL CALIBRATION, and
- b. by operating the valve through one complete cycle of full travel.

4.4.3.2.2 Each block valve shall be demonstrated OPERABLE at least once per 92 days by operating the valve through one complete cycle of full travel.

4.4.3.2.3 The emergency power supply for the PORVs and block valves shall be demonstrated OPERABLE at least once per 18 months by:

- Transferring motive and control power from the normal to the emergency power supply and
- b. Operating the valves thr: Jgh a complete cycle of full travel.

Amendment No.

SEQUOYAH - UNIT 1

3/4 4-4a

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REACTOR COOLANT SYSTEM

RELIEF VALVES - OPERATING

LIMITING CONDITION FOR OPERATION

3.4.3.2 All power operated relief valves (PORVs) and their associated block valves shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTION:

SEE ATTACHED ACTION STATEMENTS

With one or more PORV(s) inoperable, within 1 hour either restore the PORV(s) to OPERABLE status or close the associated block valve(s) and remove power from the block valve(s); otherwise, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

b. With one or more block valve(s) inoperable, within 1 hour either restore the block valve(s) to OPERABLE status or close the block valve(s) and remove power from the block valve(s); otherwise, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

The provisions of Specification 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.4.3.2.1 In addition to the requirements of Specification 4.0.5, each PORV shall be demonstrated OPERABLE at least once per 18 months by:

- a. Performance of a CHANNEL CALIBRATION, and
- b. Operating the valve through one complete cycle of full travel.

4.4.3.2.2 Each block valve shall be demonstrated OPERABLE at least once per 92 days by operating the valve through one complete cycle of full travel.

4.4.3.2.3 The emergency power supply for the PORVs and block valves shall be demonstrated OPERABLE at least once per 18 months by:

- a. Transferring motive and control power from the normal to the emergency power supply, and
- b. Operating the valves through a complete cycle of full travel.

SEQUOYAH - UNIT 2

3/4 4-8

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3/4.4.4 RELIEF VALVES

LIMITING CONDITION FOR OPERATION

3.4.4 All power-operated relief valves (PORVs) and their associated block valves shall be OPERABLE.

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APPLICABILITY: MODES 1, 2, and 3.

ACTION:	
~a.	With one or more PORV(s) inoperable, because of excessive seat leakage, within 1 hour either restore the PORV(s) to OPERABLE status or close the associated block valve(s); otherwise, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
ь.	With one PORV inoperable due to causes other than excessive seat leakage, within 1 hour either restore the PORV to OPERABLE status or close the associated block valve and remove power from the block valve; restore the PORV to OPERABLE status within the following 72 hours or be in HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
c.	With both PORVESY inoperable due to causes other than excessive seat leakage, within 1 hour either restore each of the PORVESY to OPERABLE status or close their associated block valves) and remove power from the block valves and be in HOT STANDBY within the next 6 hours and COLD SHUTDOWN within the following 30 hours.
d.	With one or more block valve(s) inoperable, within 1 hour: (1) restore the block valve(s) to OPERABLE status, or close the block valve(s) and remove power from the block valve(s), or close the PORV and remove power from its assoicated solenoid valve; and (2) apply the ACTION b. or c. above, as appropriate, for the isolated PORV(s).
е.	The provisions of Specification 3.0.4 are not applicable.

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ENCLOSURE 2

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PROPOSED TECHNICAL SPECIFICATION CHANGE SEQUOYAH NUCLEAR FLANT UNITS 1 AND 2 DOCKET NOS. 50-327 AND 50-328

(TVA-SON-TS-88-25)

DESCRIPTION AND JUSTIFICATION FOR RELIEF VALVE ACTION STATEMENTS

Description of Change

Tennessee Valley Authority proposes to modify the Sequoyah Nuclear Plant units 1 and 2 technical specifications to revise the action statements of limiting conditions for operation (LCO) 3.4.3.2 for the pressurizer power-operated relief valves (PORVs) and their associated block valves. The proposed change will require different actions based on the cause of valve inoperability. With one or more PORVs inoperable but capable of reactor coolant system (RCS) pressure control, power operation may continue, provided the associated block valve is closed (power does not have to be removed from the closed block valve). With one or more PORVs or block valves inoperable and incapable of RCS pressure control, reactor shutdown will be required.

Reason for Change

The Final Safety Analysis Report (FSAR) accident analysis for a steam generator tube rupture (SGTR), section 15.4.3, assumes that with a loss of offsite power, RCS pressure is reduced to 1,100 pounds per square inch absolute by using the pressurizer PORVs. This pressure reduction is required to minimize the amount of reactor coolant transferred to the secondary side and eventually terminate RCS break flow.

The current action statement for an inoperable PORV requires the associated block valve be closed and its power removed. Once the block valve is closed and power removed, there is no time limit to return the PORV to operable status because the action was only intended to ensure that a leaking PORV could not be a source of uncontrolled RCS leakage. This action does not ensure availability of at least one PORV for RCS depressurization following a postulated SGTR accident coincident with a loss of offsite power and a single failure. For example, the normal pressurizer spray system is not available during a loss of offsite power, and a single failure of a battery board would render one PORV inoperable.

Justification for Change

The pressurizer PORVs are designed to limit the pressurizer pressure to a value below the high-pressure reactor trip setpoint for all design transients up to and including the design percentage step load decrease with steam dump but without reactor trip. The PORVs are operated automatically or by manual control. The operation of these valves also limits the undesirable opening of the spring-loaded safety valves. Remotely operated block valves are provided to isolate the PORVs if excessive leakage occurs. The FSAR analysis for overpressure protection during modes 1, 2, and 3 assumes that the PORVs do not actuate. The pressurizer safety valves provide the required pressure relief.

The PORVs are also used to reduce RCS pressure following an SGTR accident. The emergency instructions require at least one block valve be open so that a PORV will be available for pressure reductions. When normal pressurizer sprays are not available, the PORVs are to be used. The FSAR accident analysis for an SGTR takes credit for the use of the PORVs to mitigate this accident. The proposed change to the SQN technical specifications is similar to revision 5 of NUREG-0452, Westinghouse Standard Technical Specifications (STS). However, revision 5 places more stringent action requirements on PORV and block valve inoperability in order to ensure PORV operability following an SGTR.

The STS actions distinguish between valve inoperability because of excessive seat leakage and inoperability because of causes other than excessive seat leakage. TVA proposes to make this distinction based on valve capability of effecting RCS pressure control. The need for this change is based on the availability of the PORV to reduce the RCS pressure following an SGTR. The PORV can be inoperable in other ways than seat leakage and still be capable of RCS depressurization. For example, a failed pressure transmitter or pressurizer pressure controller failure would cause automatic PORV actuation to be inoperable, but remote manual valve operation is still available. Also, the term "excessive seat leakage" is not defined and, therefore, difficult to interpret. RCS pressure control is directly related to the safety function and easy to interpret.

The only change made to action (a) for an inoperable PORV is that power does not have to be removed from the closed block valve. Once the block valve is closed, inadvertent pressure reductions because of the inoperable PORV are prevented. Also, both the PORV and the block valve are closed, and therefore, no single failure (spurious opening) could lead to RCS leakage. Because power to the closed block valve is available, operator action can be taken to open the block valve and the PORV during an SGTR. PORV leakage would be inconsequential. Additionally, specification 3.4.6.2 adequately covers RCS leakage.

Actions (b) and (c) are added to ensure assumptions made in the FSAR are valid during an SGTR with loss of offsite power and a single failure. If the PORV failed in such a way that it could not be opened and thus be incapable of reducing RCS pressure, reactor shutdown would be necessary. This action is also added for an inoperable block valve.

The proposed change ensures that PORV operability not only addresses the need for protecting the RCS pressure boundary integrity, but also addresses availability of the PORVs for purposes of pressure control.

ENCLOSURE 3

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PROPOSED TECHNICAL SPECIFICATION CHANGE SEQUOYAH NUCLEAR PLANT UNITS 1 AND 2 DOCKET NOS. 50-327 AND 50-328

(TVA-SQN-TS-88-25)

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS

Significant Hazards Evaluation

TVA has evaluated the proposed technical specification 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 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 pressurizer PORVs are designed to limit pressurizer pressure and prevent the undesirable opening of the safety valves. The PORVs are also used for automatic and manual pressure control. The FSAR analysis for overpressurization protection during modes 1, 2, and 3 assumes that the PORVs do not actuate. The pressurizer safety valves provide the required pressure relief. However, the FSAR accident analysis for an SGTR does take credit for pressure reduction using the PORVs. The proposed change ensures PORV operability for this purpose. If the PORV is incapable of RCS pressure control, then reactor shutdown is required. Thus, the proposed change ensures the assumptions made in the FSAR are valid and the resulting consequences of the SGTR accident remain within conservative limits.
- (2) Create the possibility of a new or different kind of accident from any previously analyzed. The change to the action statements does not require any hardware changes nor any changes to the operating procedures. The change simply places more restrictive limitations on continued power operations when a PORV is inoperable and incapable of RCS pressure control. Thus, the possibility of a new or different kind of accident is not created.
- (3) Involve a significant reduction in a margin of safety. The intended design and operation of the PORVs have not been changed. The valve function to provide overpressure protection is the same, while valve availability for pressure control has increased. The more stringent action statements prevent operation in an unanalyzed condition and therefore improve the margin of safety.