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April 2, 1993

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
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Gentlemen:

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

SEQUOYAH NUCLEAR PLANT (SQN) - CLARIFICATION FOR IN-SERVICE PRESSURE TEST (ISPT) RELIEF REQUESTS ISPT-2 AND ISPT-3

Reference: TVA letter to NRC dated November 17, 1992, "Sequoyah Nuclear Plant (SQN) - Units 1 and 2 - Revision to In-Service Pressure Test (ISPT) Program in Support of Cycle 6 Refueling Outages"

In the referenced letter, TVA submitted three relief requests to NRC (entitled ISPT-2, -3, and -4) that were associated with American Society of Mechanical Engineers (ASME) pressure test activities scheduled for SQN's Cycle 6 refueling outages. Two relief requests contained in TVA's referenced letter (ISPT-2 and -3) listed Code Case N-498, "Alternate Rules for 10-Year Hydrostatic Pressure Testing for Class 1 and 2 Systems," as the impractical requirement. During subsequent discussions between SQN Site Licensing staff and NRC, NRC recommended that TVA clarify the impractical requirement section of ISPT-2 and -3 to reference the ASME code requirement in lieu of the Code Case N-498 alternative requirement. The recommended clarifications to ISPT-2 and -3 are provided in the enclosure. Revision bars are also provided to indicate changes. The revised relief requests (ISPT-2 and -3) will supersede those previously provided to you in TVA's referenced letter.

Please direct questions concerning this issue to D. V. Goodin at (615) 843-7734.

Sincerely,

Robert A. Fenech

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ENCLOSURE

SEQUOYAH NUCLEAR PLANT

IN-SERVICE PRESSURE TEST (ISPT)

REVISED RELIEF REQUESTS

ISPT-2 AND ISPT-3

REQUEST FOR RELIEF ISPT-2

System: Safety injection (63)

Drawings: Final Safety Analysis Report (FSAR) Figure 6.3.2-1

Components: Pressure boundary piping between:

(1) Hot-leg injection lines:

Loop 1 - from check valve 63-641 to check valve 63-640 (8 inches), check valve 63-543 (2 inches), and valve FCV-63-163 (3/4 inch)

Loop 2 - from check valve 63-559 to check valve 63-547 (2 inches), and valve FCV-63-165 (3/4 inch)

Loop 3 - from check valve 63-644 to check valve 63-643 (8 inches), check valve 63-545 (2 inches), and valve FCV-63-164 (3/4 inch)

Loop 4 - from check valve 63-558 to check valve 63-549 (2 inches), and valve FCV-63-166 (3/4 inch)

(2) Cold-leg injection lines:

Loop 1 - from check valve 63-560 to check valve 63-622 (10 inches), check valve 63-633 (6 inches), check valve 63-551 (2 inches), and valve FCV-63-117 (3/4 inch)

Loop 2 - from check valve 63-561 to check valve 63-623 (10 inches), check valve 63-632 (6 inches), check valve 63-553 (2 inches), and valve FCV-63-97 (3/4 inch)

Loop 3 - from check valve 63-562 to check valve 63-624 (10 inches), check valve 63-634 (6 inches), check valve 63-555 (2 inches), and valve FCV-63-79 (3/4 inch)

Loop 4 - from check valve 63-563 to check valve 63-625 (10 inches), check valve 63-635 (6 inches), check valve 63-557 (2 inches), and valve FCV-63-69 (3/4 inch)

(3) Cold-leg injection lines (1 1/2 inches) from check valves 63-586 (loop 1), 63-587 (loop 2), 63-588 (loop 3), and 63-589 (loop 4), to check valve 63-581 (3 inches) and isolation valve FCV-63-24 (1 inch)

Class: 1

Function: Reactor coolant system (RCS) pressure boundary

Impractical Requirement: American Society of Mechanical Engineers, Section XI, Subsection IWB-2500, Table IWB-2500-1, Category B-P, Footnote 1 states that the "Entire pressure retaining boundary of the reactor coolant system is subject to system pressure test conducted in accordance with IWA-5000 with the exceptions specified in IWA-5214 when system pressure tests are conducted for repaired, replaced or altered components."

Basis For Relief: The subject injection line segments are located between the primary and secondary safety-injection check valves. The hot-leg injection line segments are not pressurized during normal operation or during cold shutdown. The cold-leg injection line segments are pressurized to the pressure of the safety-injection accumulators (650 pounds per square inch gauge [psig]) during normal operation.

The pressurization of these line segments to a test pressure equivalent to nominal RCS pressure (2235 psig) during Modes 4, 5, or 6 is not possible because of insufficient RCS pressure to keep the primary check valve closed against test pressure. Pressurization of these line segments to full RCS pressure during Modes 1, 2, or 3 would risk injection of cold water into the RCS.

Full compliance with the code would require either removal of the primary check valve disks or installation of temporary piping to provide a flow path around the primary check valve. This option requires a modification to SQN's RCS, which would place an unusual hardship on the plant staff and would require several days of critical path outage time for installation and removal.

Alternative Testing: The cold-leg injection line segments will be visually examined (VT-2) during the RCS leakage test conducted during start-up following each refueling outage. This leakage test is performed at safety-injection accumulator pressure (nominally 650 psig).

The hot-leg injection line segments will be visually examined (VT-2) once every ten years with the unit in Mode 3. The pressure during this test will be the discharge pressure of the safety-injection pump, which is approximately 1500 psig.

REQUEST FOR RELIEF ISPT-3

System: Reactor coolant (68)
Chemical and volume control (62)

Drawings: FSAR Figures 5.1-1 and 9.3.4-1

Component: Pressure boundary piping between:

(1) Drain lines from:

Loop 1 - valve 68-549 to 68-550 (2 inches) and 68-551 (3/4 inch)

Loop 2 - valve 68-553 to 68-554 (2 inches) and 68-593 to blind flange (3/4 inch)

Loop 3 - valve 68-581 to 68-582 (2 inches)

Loop 4 - valve 68-557 to 558 (2 inches)

(2) Reactor vessel head vent (3/4 inch) from:

Valve 68-597 to flange (3/4 inch), valve 68-602 to flange (3/4 inch), valves FSV-68-394 and FSV-68-395 to valves FSV-68-396 and FSV-68-397

(3) Pressurizer spray vents (3/4 inch) from:

Valve 68-594 to flange, and valve 68-577 to flange

(4) Excess letdown drain (3/4 inch) from valve 62-701 to flange.

(5) Reactor coolant pump seal drain and vent lines (3/4 inch) from:

Loop 1 - valve 62-572 to flange, valve 62-580 to flange

Loop 2 - valve 62-573 to flange, valve 62-581 to flange

Loop 3 - valve 62-575 to flange, valve 62-582 to flange

Loop 4 - valve 62-574 to flange, valve 62-583 to flange

Class: 1

Function: Reactor coolant pressure boundary

Impractical Requirement: American Society of Mechanical Engineers, Section XI, Subsection IWB-2500, Table IWB-2500-1, Category B-P, Footnote 1 states that the "Entire pressure retaining boundary of the reactor coolant system is subject to system pressure test conducted in accordance with IWA-5000 with the exceptions specified in IWA-5214 when system pressure tests are conducted for repaired, replaced or altered components."

Basis For Relief: Various piping segments are located in open-end tailpipes that serve as vent, drain, test, or fill lines. Manual valves and flanges bound these piping segments to provide the design-required double isolation at the reactor coolant pressure boundary. These piping segments are not normally pressurized.

Pressure testing of these piping segments at nominal operating pressure in Mode 3 would require that the inboard isolation valve be opened when the reactor coolant system (RCS) is at full temperature and pressure (547 degrees Fahrenheit and 2235 psig). This action would violate the design requirement for double isolation valve protection. The potential for spills when opening the system presents a significant risk of personnel contamination. Pressure testing in Mode 6 would require that a hydrostatic pump be connected at each segment location. However, for some segments there is no connection available and would require a modification for installation of a pump connection. These piping segments are located in high-radiation areas, and testing would result in high-personnel radiation exposures. A breakdown of the dose estimates for each radiation area in the plant is provided below:

1.	RCS Loop Drains 6 items at 10 person-hours per item 300 millirem (mrem)/hour	18.000 person-roentgen equivalent man (person-rem)
2.	Reactor Vessel Head Vents 2 items at 10 person-hours per item 150 mrem/hour 2 items at 8 person-hours per item 20 mrem/hour	3.320 person-rem
3.	Pressurizer Spray Vents 2 items at 10 person-hours per item 200 mrem/hour	4.000 person-rem
4.	Excess Letdown Drain 1 item at 8 person-hours per item 50 mrem/hour	0.400 person-rem
5.	RCS Seal Drains and Vents 4 items at 8 person-hours per item 20 mrem/hour 4 items at 8 person-hours per item 50 mrem/hour	2.240 person-rem

Based on estimated durations and actual survey data from SQN's Cycle 5 outages, a total dose estimate of 27.960 person-rem is predicted for the subject pressure test.

These piping segments are visually inspected each refueling outage as the unit returns to operation. These segments are not specifically pressurized past the first isolation valve for this inspection. It is possible that the piping is pressurized because of leakage at the first isolation valve. With these inspections being performed approximately six times in each inspection interval, the increase in safety achieved from the required nominal operating pressure test is not commensurate with the hardship of performing such testing.

Alternative Testing: These piping segments will continue to be visually inspected following each refueling outage for leakage and evidence of past leakage during the RCS leakage test. This test is conducted with the RCS at full operating temperature and pressure.