



Tennessee Valley Authority, Post Office Box 2000, Soddy-Daisy, Tennessee 37379-2000

Robert A. Fenech
Vice President, Sequoyah Nuclear Plant

December 18, 1992

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

Gentlemen:

In the Matter of) Docket No. 50-327
Tennessee Valley Authority)

SEQUOYAH NUCLEAR PLANT (SQN) - TEMPORARY REQUEST FOR RELIEF FROM AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME) CODE FOR CLASS 3 PIPING LEAK ON THE ESSENTIAL RAW COOLING WATER (ERCW) SYSTEM - CONTAINMENT SPRAY PUMP 1B-B ROOM COOLER

Reference: TVA letter to NRC dated December 2, 1991, "Sequoyah Nuclear Plant (SQN) - Temporary Relief From American Society of Mechanical Engineers (ASME) Code for Weld Leakage on Component Cooling System (CCS) Heat Exchangers (HX'S) OB2 and 2A1"

This letter provides a temporary request for relief from the ASME code regarding repair or replacement of a short section of 2-inch-diameter piping in the ERCW system. At the present time, a through-wall flaw exists in the ASME Code Class 3 piping. This relief request is being submitted under 10 CFR 50.55(a)(g)(5)(iii) and is in accordance with guidance provided by NRC staff as outlined in the above reference.

The pin-hole leak is located in a section of piping on the discharge side of Containment Spray Pump 1B-B room cooler (refer to SQN Updated Final Safety Analysis Report, Figure 9.2.2-4). The discharge piping provides a flow path for the ERCW system water exiting the room cooler. TVA evaluated the operability of the ERCW system with regard to ERCW flow-rate requirements, flooding, and the effects of spray on adjacent equipment. TVA's evaluation indicates that the ERCW system will perform its design basis function. In addition, TVA evaluated the structural integrity of the piping in accordance with NRC guidance provided in Generic Letter (GL) 90-05, "Guidance for Performing Temporary Non-Code Repair of ASME Code Class 1, 2, and 3 Piping." TVA's structural-integrity evaluation indicated that the flaw satisfied the criteria of the through-wall flaw approach in GL 90-05.

230013

9212240028 921218
PDR ADOCK 05000327
P PDR

ADOCK

U.S. Nuclear Regulatory Commission

Page 2

December 18, 1992

Until repair or replacement is performed, an inspection of the piping will be conducted on a weekly basis to assess structural integrity and to ensure that there is no further degradation. In addition, ultrasonic testing will be performed at least once every three months to assess the rate of degradation. TVA will complete the repair or replacement before start-up (Mode 2) from the Unit 1 Cycle 6 refueling outage. This refueling outage is scheduled to begin April 2, 1993, and end June 9, 1993.

Enclosure 1 provides TVA's request for relief from the ASME Section XI code. Enclosure 2 contains TVA commitments associated with this submittal.

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

Sincerely,



Robert A. Fenech

Enclosures

cc (Enclosures):

Mr. D. E. LaBarge, Project Manager
U.S. Nuclear Regulatory Commission
One White Flint, North
11555 Rockville Pike
Rockville, Maryland 20852-2739

NRC Resident Inspector
Sequoyah Nuclear Plant
2600 Igou Ferry Road
Soddy Daisy, Tennessee 37379-3624

Mr. B. A. Wilson, Project Chief
U.S. Nuclear Regulatory Commission
Region II
101 Marietta Street, NW, Suite 2900
Atlanta, Georgia 30323-0199

ENCLOSURE 1
SEQUOYAH NUCLEAR PLANT (SQN)
REQUEST FOR RELIEF - ESSENTIAL RAW COOLING WATER (ERCW)
CONTAINMENT SPRAY PUMP 1B-B ROOM COOLER DISCHARGE PIPING

UNIT: SQN Unit 1

COMPONENTS: Two-inch-diameter, Schedule 40, carbon-steel piping on the discharge side of the Containment Spray Pump 1B-B room cooler

SYSTEM: ERCW

ASME CODE CLASS: 3

FUNCTION: The discharge piping provides a flow path for the ERCW system water exiting the pump room cooler.

IMPRACTICAL CODE REQUIREMENTS: When an American Society of Mechanical Engineers (ASME) Section XI code repair or replacement is performed, it is required to be performed in accordance with ASME, Section XI, IWA-4000 or IWA-7000 respectively, in order to restore the system's structural integrity back to its original design requirements.

BACKGROUND: On November 23, 1992, a pin-hole leak was discovered on the discharge piping of Containment Spray Pump 1B-B room cooler. Upon discovery of the leak, TVA evaluated the operability of the ERCW system and the containment spray (CS) system in accordance with Technical Specifications (TS) 3/4.7.4 and 3/4.6.2, respectively. Since the leak is on the discharge piping of the CS pump room cooler, the supply of water to the room cooler is not affected. The loss of water is very small (approximately one drop per second) and it is not affecting any other safety-related equipment in the surrounding area. TVA also evaluated the structural integrity of the piping system in accordance with TS 3/4.4.10 and determined that the structural integrity of the piping system is not impaired. Based upon the above, TVA determined the operability of the ERCW and CS systems is not impaired.

An evaluation was performed in accordance with NRC Generic Letter 90-05 (through-wall flaw method) to address the structural integrity of the piping and to determine if a temporary noncode repair could be performed. The results of this evaluation show that the calculated-stress intensity factor "K" of $3.6 \text{ ksi}(\text{in})^{0.5}$ was less than $35 \text{ ksi}(\text{in})^{0.5}$ criteria for ferritic steel.

The preliminary root cause for the piping degradation is considered to be microbiologically induced corrosion. This cannot be accurately assessed until the piping is physically removed and examined. Ultrasonic testing (UT) was performed to assess overall degradation of the affected piping. The piping was examined for approximately 14 inches on both sides of the leak. UT of the two-inch-diameter, Schedule 40 piping (nominal wall thickness of 0.154 inch) indicated two areas that were below minimum wall thickness. One area was in the vicinity of the leak and the other area was a spot approximately 12 inches from the leak (0.070 inch thick). The calculated minimum wall is 0.0768. The remainder of the pipe showed remaining wall thicknesses ranging from 0.085 inch to 0.154 inch.

PROPOSED
TEMPORARY
NONCODE REPAIR:

A temporary noncode repair consisting of a rubber gasket and a radiator hose clamp has been employed to limit or stop the leakage. This temporary noncode repair has been evaluated for effects on the system because of deadweight and seismic forces and proved to have no effect on the system.

ALTERNATIVE
REQUIREMENTS:

TVA will continue to operate with a temporary noncode repair until a code repair or replacement of the pipe can be performed. A walkdown will be performed at least once a week to ensure structural integrity is maintained. UT will also be performed at least once every three months to assess the piping degradation rate. Based upon the weekly walkdowns and UT examinations, an engineering evaluation will be performed to determine if further remedial measures or corrective actions are needed. An ASME Section XI code repair or replacement will be performed before the completion of the Unit 1 Cycle 6 refueling outage that is currently scheduled to begin April 2, 1993, and end June 9, 1993.

ENCLOSURE 2

COMMITMENTS

1. TVA will repair or replace the affected essential raw cooling water system piping (Containment Spray Pump 1B-B room cooler) before start-up from the Unit 1 Cycle 6 refueling outage.
2. A walkdown of the affected piping will be performed at least once a week to ensure structural integrity is maintained. Weekly monitoring will continue until repair or replacement is complete.
3. Ultrasonic testing (UT) will be performed at least once every three months to assess the rate of degradation. This testing will continue until repair or replacement is complete.
4. An engineering evaluation will be performed once every three months following the UT to determine if further remedial measures or corrective actions are needed.