



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

April 23, 1996

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) - REQUEST FOR RELIEF FROM AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME) CODE FOR REPLACEMENT OF ASME CODE CLASS 3 PIPING

This letter provides a request for relief to make a temporary noncode repair on a section of ASME Code Class 3 piping within SQN's essential raw cooling water (ERCW) system. At the present time, a pin-hole leak exists on a two-inch diameter Schedule 40 carbon steel pipe. This pipe supplies cooling water to the Unit 1 upper containment vent cooler (1B). The cooling medium for the cooler is ERCW.

TVA has evaluated the operability of the ERCW system with regards to: (1) ERCW flow rate requirements, (2) effects of spray on adjacent equipment, and (3) the structural integrity of the pipe. TVA's evaluation for operability indicates that the ERCW system will perform its design basis function and surrounding equipment is not affected.

TVA has installed a mechanical pipe clamp to limit leakage as a stop-gap measure. This is considered a noncode repair. The additional weight of the clamp has been evaluated and found to have no adverse effect on structural integrity.

In accordance with the guidance of NRC Generic Letter (GL) 90-05, TVA will replace the affected section of pipe prior to start-up from the Unit 1 Cycle 8 refueling outage (scheduled to begin February 1997). Until pipe replacement is completed, quarterly visual examinations and nondestructive examinations with engineering evaluations will be performed to ensure that there is no further pipe degradation.

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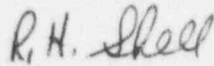
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This relief request is being submitted under 10 CFR 50.55(a)(g)(5)(iii) and is provided in accordance with the guidance of NRC GL 90-05. Enclosure 1 provides TVA's request for relief. Enclosure 2 contains TVA commitments.

Please direct questions concerning this issue to D. V. Goodin at (423) 843-7734.

Sincerely,



R. H. Shell
Manager
SQN Site Licensing

Enclosures

cc (Enclosures):

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ENCLOSURE 1

SEQUOYAH NUCLEAR PLANT (SQN)

REQUEST FOR RELIEF - ESSENTIAL RAW COOLING WATER (ERCW)

AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME)

CODE CLASS 3 PIPING

Unit: SQN Unit 1

Components: Two-inch diameter, Schedule 40, carbon steel supply piping to the 1B upper containment vent cooler (UCVC).

System: ERCW

ASME
Code Class: 3

Function: The supply piping provides a flow path for the ERCW system water to the 1B UCVC (refer to Final Safety Analysis Report [FSAR] Section 9.2.2 and FSAR Figure 9.2.2-3).

Impractical Code
Requirements: When an 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: Recently, a pin-hole leak was found in the supply piping to the 1B UCVC. Upon discovery of the leak, TVA evaluated the operability of the ERCW system. The loss of water is very small (approximately one drop of water every two minutes), and it is not affecting any other safety-related equipment in the surrounding area. The small amount of leakage does not prevent the UCVC from performing its heat removal function. Based upon the above, TVA determined that operability of the ERCW system is not impaired. TVA also evaluated the structural integrity of the piping system and determined that the structural integrity of the piping system is not impaired. The leak is adjacent to a rigid pipe support which provides the necessary support and position retention to the pipe.

An evaluation was performed in accordance with NRC Generic Letter 90-05 utilizing the through-wall 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 14.9 ksi (in)^{0.5} is less than the 35 ksi (in)^{0.5} criteria for ferritic steel.

The preliminary root cause for the piping degradation is considered to be due to either microbiologically induced corrosion or pitting corrosion. Nondestructive examination (NDE) ultrasonic testing (UT) was performed to assess overall degradation of the affected piping. UT of the two-inch diameter, Schedule 40 piping (nominal wall thickness of 0.154 inch) was examined for six inches on each side of the leak which indicated only one area that was below minimum wall. The calculated minimum wall is 0.075 inch.

Proposed
Temporary
Noncode
Repair:

At this time, TVA will install a temporary noncode repair consisting of a mechanical clamp. This clamp attaches to the pipe by mechanical means and can be removed to perform subsequent NDE examination. The clamp weighs approximately 10 pounds and has been considered for effects on the system due to deadweight and seismic loads and was found to have no effect on the system.

Alternative
Requirements:

A visual examination and ultrasonic examination will be performed every three months to assess the piping degradation rate. A quarterly frequency for visual examination (even though it differs from the weekly frequency recommended by GL 90-05) is considered by TVA to be appropriate based on the large margin in structural integrity of the affected pipe and the historical reliability of the temporary clamp for preventing leakage.

Based upon these quarterly examinations, an engineering evaluation will be performed to determine if further remedial measures or corrective actions are needed. An ASME Section XI repair or replacement will be performed before the completion of the Unit 1 Cycle 8 refueling outage, which is currently scheduled to start on February 28, 1997.

ENCLOSURE 2

COMMITMENTS

1. TVA will replace the affected piping in accordance with the American Society of Mechanical Engineers code prior to start-up from the Unit 1 Cycle 8 refueling outage (currently scheduled to begin February 1997).
2. TVA will perform a visual examination and an engineering evaluation based on nondestructive examination every three months to determine if further remedial or corrective actions are needed until replacement is complete.