



Tennessee Valley Authority, Post Office Box 2060, Soddy-Daisy, Tennessee 37379

August 7, 1995

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

Gentlemen:

In the Matter of
Tennessee Valley Authority

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Docket No. 50-328

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 the ERCW discharge pipe of 2A-1 diesel generator (D/G) heat exchanger. The cooling medium for the heat exchanger is ERCW.

TVA has evaluated the operability of the D/G and the ERCW system with regards to:
(1) ERCW flow rate requirements (i.e., cooling capacity of the D/G heat exchanger),
(2) effects of spray on adjacent equipment, (3) the structural integrity of the pipe, and
(4) internal flooding of the D/G building. TVA's evaluation for operability indicates that the D/G and the ERCW system will perform their design basis functions.

TVA has installed a Dresser 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.

TVA will replace the affected section of pipe during the next scheduled 2A-1 D/G maintenance outage (scheduled for February 1996). Until pipe replacement is completed, quarterly nondestructive examinations and engineering evaluations will be performed to ensure that there is no further pipe degradation.

As a result of an extent of condition review from the problem discussed above, TVA installed a second Dresser pipe clamp on a similar Class 3 section of ERCW discharge pipe off the 2B-1 D/G heat exchanger. This activity was performed solely as a

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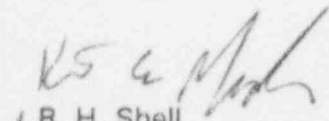
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precautionary measure since ultrasonic testing of the pipe indicates that this section of pipe is slightly above minimum wall thickness. Even though structural integrity of the pipe continues to be maintained, TVA plans to proceed with replacement of this section of pipe during the next scheduled 2B-1 D/G maintenance outage (scheduled for February 1996).

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 Generic Letter 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 (615) 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 2

Components: Six-inch diameter, Schedule 40, carbon steel piping on the discharge side of the 2A-1 D/G heat exchanger.

System: ERCW

ASME
Code Class: 3

Impractical Code
Requirements: ASME, Section XI, code repair or replacement is required to be performed in accordance with ASME, Section XI, IWA-4000 or IWA-7000, respectively, in order to restore the systems structural integrity back to its original design requirements.

Background: On June 8, 1995, a pin-hole leak was found on the discharge piping from the 2A-1 D/G heat exchanger. Upon discovery of the leak, TVA evaluated the operability of the ERCW system and the D/G, in accordance with Technical Specification (TS) 3/4.7.4 and 3/4.8.1, respectively. The loss of water is very small (less than one gallon per minute) and it is not affecting any other safety-related equipment in the surrounding area. Based upon the above, TVA determined that operability of the ERCW system and the D/G are not impaired. TVA also evaluated the structural integrity of the piping system in accordance with NRC Generic Letter (GL) 90-05. The evaluation determined that the structural integrity of the piping system is not impaired.

The evaluation performed for GL 90-05 utilized 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 shows that the calculated stress intensity factor "K" of 5.5 ksi (in)^{0.5} was less than the 35 ksi (in)^{0.5} criteria for ferritic steel.

The root cause for the piping degradation is considered to be due to cavitation. The leak is immediately downstream of Valve 2-67-510A (refer to SQN's Final Safety Analysis Report, Figure 9.2.2-1), which is normally throttled to balance the ERCW system flow. Nondestructive examination (NDE) ultrasonic testing (UT) was performed to assess overall degradation of the affected piping. UT of the piping (nominal wall thickness of 0.280 inch) indicates that degradation is localized within a 1/2 inch by 1/2 inch area (below minimum wall thickness of 0.084 inch).

The leak is located approximately 1 1/8 inches from the toe of the weld on the flange of the valve. The piping was examined radially 12 inches downstream of the leak. No further areas of degradation were found.

UT was performed on the same area of piping on the other three D/Gs. The piping was found to be acceptable (greater than the minimum wall thickness).

Proposed
Temporary
Noncode
Repair:

At this time, TVA has installed a Dresser pipe clamp as a stop-gap measure to limit leakage. TVA considers the clamp to be a temporary noncode repair. The 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 evaluated for effects on the system for deadweight and seismic forces and found to have no effect.

Alternative
Requirements:

An NDE (ultrasonic testing) of the pipe will be performed every three months while the clamp is removed. Note that the weekly walkdown (a qualitative assessment of leakage) as recommended in GL 90-05 will not be performed. TVA does not find that a weekly walkdown provides any safety benefits since:

1. Leakage from the ERCW system at this location does not affect system or equipment operability (i.e., located on the discharge side of the heat exchanger),
2. ERCW flow does not exist in the pipe except during monthly D/G operability runs (two-hour duration). During these monthly D/G operability tests, operations personnel are in the area of the affected piping and would notice any significant amounts of leakage,
3. ERCW system pressure at the leak point is approximately 10 pounds per square inch. Consequently, any leakage would not affect equipment operability from either flooding or spray,
4. The clamp is inherently reliable.

Based upon the UT examinations, an engineering evaluation will be performed to determine if further remedial measures or corrective actions are needed. Replacement of the affected piping is scheduled to be performed during the next 2A-1 D/G maintenance outage (scheduled for February 1996).

ENCLOSURE 2

COMMITMENTS

1. TVA will replace the affected piping in accordance with the American Society of Mechanical Engineers code during the next scheduled 2A-1 diesel generator maintenance outage (currently scheduled for February 28, 1996).
2. TVA will perform an engineering evaluation based on nondestructive examination every three months to determine if further remedial or corrective actions are needed until replacement is complete.