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AUG 09 1995

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

Gentlemen:

In the Matter of the Application of ) Docket Nos. 50-390  
Tennessee Valley Authority )

WATTS BAR NUCLEAR PLANT (WBN) - UNIT 1 - 10 CFR 50.55a(a)(3) -  
PROPOSED ALTERNATIVE TO THE TESTING REQUIREMENTS OF SECTION XI, OF  
THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME) BOILER AND  
PRESSURE VESSEL CODE.

The purpose of this letter is to document the additional information requested by the NRC staff through teleconferences on July 13 and 14, 1995, associated with TVA's submittal dated June 29, 1995. TVA's submittal requested NRC authorization to waive the requirements for testing the pressurizer safety relief valves after installation and within six months of initial fuel load.

Enclosure 1 provides the additional information requested by the NRC staff and restates TVA's requests. Enclosure 2 contains the commitment made by this submittal. If you should have any questions, contact P. L. Pace at (615) 365-1824.

Sincerely,



O. J. Zeringue

Enclosures  
cc: See page 2

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cc (Enclosures):

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ENCLOSURE 1

TVA's June 29, 1995, submittal requested an alternative to the requirements of the ASME Operational and Maintenance Standards, Part 1 (OM-1) "Inservice Performance Testing of Nuclear Power Plant Pressure Relief Devices," 1987 Edition with addenda through the OMA-1988 Addenda. Specifically, the requirements of paragraph 7.2.1.1 would require that the pressurizer safety relief valves (PSRVs) for the Watts Bar Nuclear Plant (WBN), Unit 1, be tested after installation within six months of the initial fuel loading. As an alternative to these requirements, TVA proposed to take credit for testing performed at the Crosby Valve and Gage Company test facility in January 1995 to extend the retesting period to 12 months.

The applicable edition of OM-1 specifies that the preoperational set pressure verification of the PSRVs be performed after the installation period and before initial electrical power generation. The "verification shall be determined by pressurizing the system up to the valve set pressure and opening the valve, or the valve may be tested at or below normal operating pressures with an assist device." A change to the 1995 Edition of the OM Code eliminated the requirement for "after installation." While the 1995 Edition has not yet been endorsed by the NRC, the fact that the code was changed supports TVA's discussion that testing after installation does not provide a compensating increase in the level of quality and safety in verifying the set pressure of the PSRVs.

In addition, there are a number of matters that make testing in the installed configuration a hardship without a compensating increase in the level of quality and safety. These were discussed with the Crosby Valve and Gage Company, the manufacturer of the PSRVs. The following problems would be encountered:

Hot functional testing is performed prior to fuel loading, but gagging two-out-of three valves while raising the pressure of the reactor coolant system (RCS) to the set pressure of the valves (2485 psig +/- 1%) until the third valve lifted would create an undesirable operating condition. During this testing operating conditions are being duplicated and this scenario is not permitted.

According to Crosby, while an assist device is manufactured, it is generally used on other valve installations (e.g., main steam safety valves). The area on top of the pressurizer where the PSRVs are located would be at temperatures as high as 160 degrees F when the plant is in an operating condition that would facilitate testing. At temperatures this high, the accuracy of the assist device is not assured; therefore, testing at the test facility gives a better accuracy of the set pressure. In addition, the high temperatures create a personnel hazard for the individuals involved in testing the valves, since testing with an assist device requires personnel be in close proximity to the valves.

The rupture pressure of the pressurizer relief tank rupture disk is 88 to 100 psi. It is possible that the amount of discharge that could result from testing the PSRVs during the hot functional test could cause the rupture disk to rupture and

discharge the contents of the tank into the containment building, resulting in potential personnel hazards and equipment damage. This is an undesirable condition and would create an unusual difficulty in performing PSRV testing in the installed condition.

Testing at the test facility meets the code requirements for periodic testing once the plant becomes operational. In addition, there are no conditions unique to the operation of the plant during startup testing that warrant a requirement to test the PSRVs in the installed configuration. The PSRVs were installed in March 1995 and have not been exposed to construction activities; therefore, the January 1995 set pressure of the valves should not have been affected. Shipping and receiving records indicate that no potential damage to valves occurred during the return shipment.

The subject valves were tested in January 1995 in anticipation of an initial fuel loading within six months (i.e., June 1995). The schedule slippage was unforeseen at the time the valves were tested; however, there have been no operating conditions that have challenged the valves in the time period since installation and, as previously stated, the valves have not been subjected to potential damaging conditions. During hot functional testing the valves will be monitored for leakage or premature lifting while the RCS is at maximum operating pressure (i.e., approximately 2400 psig).

Periodic testing of the PSRVs is based on a 20 percent sample every 24 months, with all the valves being tested within five years. To compensate for not testing the PSRVs within six months prior to fuel loading requirement, TVA will test all three valves during the first refueling outage. The core will initially be loaded for a 12-month operating period; therefore, testing all three PSRVs during the first refueling outage will be more frequent than the code requirements for periodic testing. This will also provide an added level of assurance that the valves are properly set during the second cycle of operation. Subsequent testing will be in accordance with OM-1.

With the initial fuel loading not expected to exceed a period of 12 months beyond the date of testing the PSRVs, with a period of two to three months of startup testing after fuel loading, and with a second test performed within approximately 12 months from commercial operation, the valves will be tested twice within a period of less than three years. If the initial fuel loading occurs beyond 12 months from the date of the set pressure testing performed at the Crosby test facility, the PSRVs will be retested within six months prior to initial fuel loading in accordance with the code. While this testing would also create a hardship, the impact will be accommodated by the revised schedule.

In conclusion, TVA considers testing the valves in the installed configuration or removing the valves for retesting creates a hardship and unusual difficulty without a compensating increase in the level of quality and safety. An extension of six months has no adverse impact on the set pressure verification period since all three PSRVs will be tested at the first refueling outage or if fuel loading occurs more than 12 months after the date of the Crosby test.

ENCLOSURE 2

WATTS BAR NUCLEAR PLANT  
10 CFR 50.55a(a)(3)  
PROPOSED ALTERNATIVE TO ASME SECTION XI

COMMITMENT

TVA will test all three pressurizer safety relief valves during the first refueling outage.