

TENNESSEE VALLEY AUTHORITY

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APR 05 1990

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 ) 50-391

WATTS BAR NUCLEAR PLANT (WBN) UNITS 1 AND 2 - 10 CFR 50.55a(a)(3) - PROPOSED ALTERNATIVE TO THE TESTING REQUIREMENTS OF SECTION III, SUBSECTION ND-6000 OF THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME) BOILER AND PRESSURE VESSEL CODE

Pursuant to 10 CFR 50.55a(a)(3), TVA is requesting NRC authorization to use a proposed alternative to the testing requirements of Section III, Subsection ND-6000 of the ASME Boiler and Pressure Vessel Code. TVA has determined that the proposed alternative provides an acceptable level of quality and safety, and that compliance with the specified requirements of Subsection ND-6000 would result in hardship or unusual difficulties without a compensating increase in the level of quality and safety.

Enclosure 1 is a description of the proposed alternative. Enclosure 2 identifies the commitment made in this report.

If there are any questions, please telephone G. R. Ashley at (615) 365-8527.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

*E. G. Wallace*  
E. G. Wallace, Manager  
Nuclear Licensing and  
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Enclosures  
cc: See page 2

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cc (Enclosures):

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ENCLOSURE 1

PROPOSED ALTERNATIVE TO THE TESTING  
REQUIREMENTS OF SECTION III  
SUBSECTION ND-6000 OF THE  
AMERICAN SOCIETY OF MECHANICAL  
ENGINEERS (ASME) BOILER AND  
PRESSURE VESSEL CODE

During the construction of Watts Bar Unit 1, the ASME Class 3 portions of the Control Air System were installed in accordance with the requirements of ASME Section III. These portions were tested in accordance with the pneumatic pressure test requirements of ND-6000. However, the test pressure was incorrectly determined because the design pressure used to establish the test pressure was incorrect as recorded on the flow diagram for this system. The design pressure specified in the design criteria, used for calculations, and documented in the Final Safety Analysis Report (FSAR) is 115 psig and not 105 psig as recorded on the flow diagram. The maximum system operating pressure is 105 psig as documented in the system description manual.

Subsection ND-6000 of ASME Section III requires a test pressure 1.25 times the design pressure. In accordance with this requirement, the Control Air System was tested at a minimum test pressure of 131.25 psig (1.25 times 105 psig) and not at the required 143.75 psig (1.25 times 115 psig) due to the error described above. As a result, the Control Air System was tested at a pressure 12.5 psig less than the required test pressure.

TVA is requesting, pursuant to 10 CFR 50.55a(a)(3), NRC authorization to use the results of the test performed at 131.25 psig to satisfy the requirements of Subsection ND-6000. TVA believes that this test provides an acceptable level of quality and safety for the following reasons:

1. The original pneumatic test was performed in accordance with the requirements of ND-6000, except for the required test pressure.
2. The test pressure used was 1.25 times the maximum system operating pressure.
3. Testing at the higher pressure would not result in a significant increase in the stress levels of system piping or components. Therefore, the results of testing at the lower pressure should be acceptable.
4. The consequences of any minor leakage would not be significant since there exists sufficient capacity to compensate for small leakage without affecting normal or safety functions.
5. Any increase in operating pressure over 115 psig will be controlled by the safety relief valves.

Performance of a second pneumatic pressure test will require the examination of each welded joint and each mechanical joint (i.e., bolted and screwed connections, compression fittings) in the ASME Code portion of the Control Air System. To complete this inspection, TVA would have to inspect numerous welds and mechanical joints. This would also require installing scaffolding and disconnecting instrumentation. TVA believes that performing this additional pneumatic test in order to comply with the requirements of ASME Section III would "result in hardship or unusual difficulties without a compensating increase in the level of quality and safety" of Watts Bar.

TVA will revise the FSAR to document the alternative upon NRC authorization.

ENCLOSURE 2  
LIST OF COMMITMENTS

TVA will revise the Final Safety Analysis Report (FSAR) to document the alternative upon NRC authorization.