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NOV 21 1991

WBRD-50-390/91-39  
WBRD-50-391/91-39

10 CFR 50.55(e)

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

Gentlemen:

In the Matter of the Application of )  
Tennessee Valley Authority )

Docket Nos. 50-390  
50-391

WATTS BAR NUCLEAR PLANT (WBN) UNITS 1 AND 2 - FAILURE TO POSTULATE BREAKS  
IN STEAM GENERATOR WET LAYUP PIPING - WBRD-50-390/91-39 AND  
WBRD-50-391/91-39 - INTERIM REPORT

The subject deficiency was initially reported to NRC Region II on  
October 21, 1991, in accordance with 10 CFR 50.55(e) as Significant  
Corrective Action Report (SCAR) WBP 900420PSCA. Enclosure 1 provides  
TVA's interim report. Enclosure 2 lists the commitment for this  
submittal.

If there are any questions, please telephone P. L. Pace at (615) 365-1824.

Sincerely,

John H. Garrity

Enclosures  
cc: See page 2

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## U.S. Nuclear Regulatory Commission

## cc (Enclosures):

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ENCLOSURE 1  
WATTS BAR NUCLEAR PLANT (WBN) UNITS 1 AND 2  
FAILURE TO POSTULATE BREAKS IN STEAM GENERATOR WET LAYUP PIPING  
SIGNIFICANT CORRECTIVE ACTION REPORT WBP900420PSCA  
WBRD-50-390, 391/91-39 - 10 CFR 50.55(e) INTERIM REPORT

Description of Deficiency

10 CFR 50 Appendix-A, General Design Criteria (GDC) for Nuclear Power Plants, requires in GDC-4 that structures, systems, and components important to safety be protected from the dynamic and environmental effects of pipe rupture. Watts Bar General Design Criteria WB-DC-40-31.50, "Evaluating the Postulated Effects of a Pipe Failure Inside and Outside Containment," requires analysis of postulated pipe failures in "high-energy" (temperature and pressure exceeding 200° F and 275 psig respectively) non-safety class piping (i.e., non-ASME Class 1, 2, or 3). Contrary to these requirements, a portion of the WBN Steam Generator Wet Layup (SGWL) system piping which connects to the Main Feedwater (MFW) system has not been analyzed for the environmental or dynamic effects of pipe breaks. Specifically, four SGWL piping lines (TVA Class H) connect to MFW bypass piping in WBN's yard area (Elevation 729) and extend approximately 20 feet into the elevation 713.0 Auxiliary Building penetration rooms of each unit where the lines are blocked with double isolation valves during all modes of normal operation. During cold shutdown and refueling, the SGWL system is used for corrosion control of steam generator internals.

Safety Implications

The Auxiliary Building has not been evaluated for the environmental conditions and the effects of pipe whip and jet impingement associated with the postulated failure of this piping. As such, without a documented evaluation, required safety-related equipment could potentially be exposed to an environment for which it is not qualified and thus jeopardize the ability of such equipment to perform its safety function. For breaks outside the Auxiliary Building, pipe rupture of SGWL piping is bounded by previously analyzed breaks of main steam and main feedwater piping in the yard.

Interim Progress

TVA plans to modify the design of the subject piping to allow manual isolation of these lines in the yard area upstream of where the piping enters the Auxiliary Building. This modification would eliminate the HELB potential within the Auxiliary Building and would be completed prior to System 41 (Layup Water Treatment) testing for Units 1 and 2, respectively.

The evaluation of the cause of the subject deficiency is in progress. Preliminary efforts indicate the extent of the deficiency would be addressed through TVA's Hanger Analysis and Update Program (HAAUP). Under the HAAUP program, TVA has undertaken a pipe rupture review. Through this review, the subject deficiency and other potential examples which may exist would have been identified.

WBN design control processes are currently in place which should prevent the occurrence of a similar deficiency. Engineering Administrative Instruction (EAI)-3.05, "Design Change Notices," provides instructions on items which must be considered during the development and review of design changes. WBN instruction EAI-8.08, "Documentation and Analysis Procedure for Evaluating the Effects of Postulated Pipe Ruptures," requires the responsible engineer to identify high and moderate energy boundaries. Additionally, design and calculation reviews are conducted using checklists contained in WBN "desk top" instruction "Administrative Handling of Quality Monitoring Checklists." The checklist assists designers during the design change process and includes consideration for pipe rupture effects.

TVA will finalize the cause and corrective action for this issue and provide a final 10 CFR 50.55(e) report by January 16, 1992.

ENCLOSURE 2

LISTS OF COMMITMENTS

TVA will finalize the cause and corrective action for this issue and provide a final 10 CFR 50.55(e) report by January 16, 1992.