

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

400 Chestnut Street Tower II

September 18, 1980

Mr. James P. O'Reilly, Director  
Office of Inspection and Enforcement  
U.S. Nuclear Regulatory Commission  
Region II - Suite 3100  
101 Marietta Street  
Atlanta, Georgia 30303

Dear Mr. O'Reilly:

WATTS BAR NUCLEAR PLANT UNITS 1 AND 2 - INCORRECT ANALYSIS OF PIPING  
SYSTEMS OVER THE OPERATING TEMPERATURE RANGE - NCR CEB 79-12 - FINAL  
REPORT

The subject condition was initially reported to NRC-OIE Inspector  
C. R. McFarland on March 20, 1979, in accordance with 10 CFR 50.55(e).  
Interim reports were submitted on April 30, 1979, July 30, 1979,  
January 18, 1980, and July 11, 1980. Enclosed is our final report.

If you have any questions, please get in touch with D. L. Lambert at  
FTS 857-2581.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

L. M. Mills, Manager  
Nuclear Regulation and Safety

Enclosure

cc: Mr. Victor Stello, Director (Enclosure) ✓  
Office of Inspection and Enforcement  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555

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WATTS BAR NUCLEAR PLANT UNITS 1 AND 2  
INCORRECT ANALYSIS OF PIPING SYSTEMS  
OVER THE OPERATING TEMPERATURE RANGE  
10CFR50.55(e)  
NCR CEB 79-12  
FINAL REPORT

Description of Condition

TVA has discovered that several piping systems required to operate at temperatures above and below ambient may not have been analyzed for a thermal range condition as defined in the ASME Code. The ASME Code requires piping to be analyzed from the maximum temperature to the minimum temperature. However, TVA may have analyzed the piping systems from ambient to maximum and from ambient to minimum.

Safety Implication

As a result of this incorrect analysis, thermal fatigue may not have been properly accounted for. This could have led to overstressing of safety-related piping.

Corrective Action

TVA has reanalyzed all systems which are subject to temperatures above and below ambient, according to the ASME Code requirements. Only the ERCW piping in the auxiliary building and the reactor buildings were found to have any potential of being affected by the incorrect analysis. These piping systems have been reanalyzed and no major changes were required. Several design loads increased for several supports and, as a result, design changes were made because of this evaluation.