

**TENNESSEE VALLEY AUTHORITY**

CHATTANOOGA, TENNESSEE 37301  
5N 157B Lookout Place

February 13, 1986

WBRD-50-390/86-13  
WBRD-50-391/86-11

U.S. Nuclear Regulatory Commission  
Region II  
Attention: Dr. J. Nelson Grace, Regional Administrator  
101 Marietta Street, NW, Suite 2900  
Atlanta, Georgia 30323

06 FEB 20 P 3: 22

Dear Dr. Grace:

**WATTS BAR NUCLEAR PLANT UNITS 1 AND 2 - LACK OF THERMAL QUALIFICATION FOR SYSTEMS 43 AND 90 PIPING - WBRD-50-390/86-13, WBRD-50-391/86-11 - INTERIM REPORT**

The subject deficiency was initially reported to NRC-OIE Inspector Art Johnson on December 24, 1985 in accordance with 10 CFR 50.55(e) as SCR WBN EEB 8572. Enclosed is our interim report. We expect to submit our next report on or about March 24, 1986.

Delay in submittal of this report was discussed with Bob Carroll on January 21, 1986.

If there are any questions, please get in touch with R. H. Shell at FTS 858-2688.

Very truly yours,

TENNESSEE VALLEY AUTHORITY



R. L. Gridley  
Manager of Licensing

Enclosure

cc: Mr. James Taylor, Director (Enclosure)  
Office of Inspection and Enforcement  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Records Center (Enclosure)  
Institute of Nuclear Power Operations  
1100 Circle 75 Parkway, Suite 1500  
Atlanta, Georgia 30339

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## ENCLOSURE

### WATTS BAR NUCLEAR PLANT UNITS 1 AND 2 LACK OF THERMAL QUALIFICATION FOR SYSTEMS 43 AND 90 PIPING WBRD-50-390/86-13, WBRD-50-391/86-11

SCR WBN EEB 8572

10 CFR 50.55(e)

INTERIM REPORT

#### Description of Deficiency

The existing piping for the radiation sampling system (system 43) and the radiation monitoring system (system 90) was installed to meet seismic qualification (category I) without adequately considering thermal movement. If these systems are subjected to an average through-wall temperature greater than 120°F, an overstress condition could occur due to thermal loads.

The cause of this problem has been determined to be a breakdown in communication between engineering personnel knowledgeable of and responsible for conveying system operational data and personnel knowledgeable of and responsible for analysis and support design.

#### Safety Implications

The lack of thermal consideration in the support design of systems 43 and 90 piping could allow the creation of plastic hinges in the piping due to the thermal load. This could then restrict the flow of fluid in the piping such that the systems could fail to function. A failure of the radiation sampling lines would not affect safe operation or shutdown of the plant. However, with respect to the radiation monitoring system, a failure of the piping could allow a radioactive release inside containment to go undetected and prevent the automatic isolation of the containment vent system. This could lead to a greater than allowable release of radioactive material into the environment.

#### Interim Progress

TVA will perform engineering evaluations, testing, and/or analysis of the thermal effects on radiation sampling and radiation monitoring lines and will modify clamps and supports as needed. Also, a review of the remaining instrumentation systems (i.e., instrument sense lines) has been performed to verify that these systems do not need to be supported for thermal conditions beyond existing designs/installations. Actions to prevent recurrence are under review in accordance with Office of Engineering procedure OEP-17 and will be provided in the final report.

TVA will provide the next report on this item on or about March 24, 1986.