

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401  
400 Chestnut Street Tower II

April 3, 1985

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WBRD-50-390/84-03

WBRD-50-391/84-03

U.S. Nuclear Regulatory Commission

Region II

Attn: Dr. J. Nelson Grace, Regional Administrator

101 Marietta Street, NW, Suite 2900

Atlanta, Georgia 30323

Dear Dr. Grace:

WATTS BAR NUCLEAR PLANT UNITS 1 AND 2 - PEAK CONTAINMENT TEMPERATURE -  
WBRD-50-390/84-03, WBRD-50-391/84-03, - FIFTH INTERIM REPORT

The subject deficiency was initially reported to NRC-OIE Inspector Caudle Julian on December 29, 1983 in accordance with 10 CFR 50.55(e) as NCR WBN NEB 8335. Interim reports were submitted on January 27, April 3, May 22 and October 17, 1984. Enclosed is our fifth interim report. We expect to submit our next report on or about November 15, 1985. We consider 10 CFR Part 21 applicable to this deficiency.

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

Very truly yours,

TENNESSEE VALLEY AUTHORITY

*J. A. Homer*

J. W. Hufham, Manager  
Licensing and Regulations

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  
PEAK CONTAINMENT TEMPERATURE  
NCR WBN NEB 8335  
WBRD-50-390/84-03, WBRD-50-391/84-03  
10 CFR 50.55(e)  
FIFTH INTERIM REPORT

Description of Deficiency

In response to an NRC question on Duke's Catawba FSAR, Westinghouse has analyzed the effects of superheated steam, when the steam generator tubes uncover, subsequent to a main steam line break. Previously, the highest calculated containment temperature for Catawba was 327°F; the new analysis, which Westinghouse has independently verified, results in a peak of 383°F in the lower containment and 345°F in the dead-ended compartment. The present peak containment temperature for Watts Bar Nuclear Plant (WBN) is also 327°F. The results of the new analysis are believed to apply to Watts Bar and must be evaluated with regard to qualification of IE electrical equipment, safety-related mechanical equipment, thermal growth of containment, protective coatings and possibly others.

Interim Progress

Westinghouse has incorporated in their containment model the results of full-scale tests to determine the hydraulic characteristics of the ice condenser drains into lower compartment. Based on the revised model, a preliminary WBN analysis was performed and resulted in peak containment temperatures below the current qualification temperature of 327°F. Westinghouse plans to perform additional tests to confirm the conservatism of the present model. Based on these tests, Westinghouse plans to have a final report on the revised containment model complete by the end of September 1985. TVA is continuing to work with Westinghouse to obtain a solution to the problem based upon analytical techniques acceptable to the NRC.

Based on the analyses performed to date, TVA does not expect this condition to require any modifications to the existing WBN design. As such, it is our position that fuel loading and power ascension of WBN unit 1 can proceed without any unnecessary or undue risks to the public's health and safety.

TVA will provide the next report on this matter to the NRC on or about November 15, 1985.