

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

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JAN 05 1988

WBRD-50-390/87-22
WBRD-50-391/87-26

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

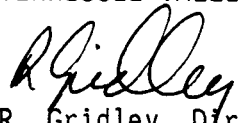
WATTS BAR NUCLEAR PLANT (WBN) UNITS 1 AND 2 - FAILURE TO CONSIDER REACTOR CORE
DECAY HEAT IN DETERMINING MOST SEVERE TIME DEPENDENT ACCIDENT TEMPERATURE
PROFILE - WBRD-50-390/87-22 AND WBRD-50-391/87-26 - INTERIM REPORT

The subject deficiency was initially reported to NRC Region II Inspector
Gordon Hunegs on December 1, 1987, in accordance with 10 CFR 50.55(e) as
CAQR WBF 870061. Enclosed is our interim report. We expect to submit our
final report on or about August 30, 1988. We consider 10 CFR Part 21
potentially applicable to this deficiency.

If there are any questions, please telephone R. D. Schulz at (615) 365-8524.

Very truly yours,

TENNESSEE VALLEY AUTHORITY


R. Gridley, Director
Nuclear Licensing and
Regulatory Affairs

Enclosure
cc: See page 2

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U.S. Nuclear Regulatory Commission

JAN 05 1980

cc (Enclosure):

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ENCLOSURE

WATTS BAR NUCLEAR PLANT UNITS 1 AND 2
FAILURE TO CONSIDER REACTOR CORE DECAY HEAT IN
DETERMINING MOST SEVERE TIME DEPENDENT
ACCIDENT TEMPERATURE PROFILE
WBRD 50-390/87-22 AND WBRD 50-391/87-26
CAQR WBF 870061
10 CFR 50.55(e)

INTERIM REPORT

Description of Deficiency

During the development of the Watts Bar time dependent environmental qualification accident temperature profile for the lower compartment, there was a failure to consider the long-term effects of a main steam line break (MSLB) inside containment for a plant going to hot standby conditions as opposed to cold shutdown. The present profile shown on drawing 47E235-42 reflects the peak temperature from a MSLB at the initiation of an accident and decreases over time to reflect going to a cold shutdown condition. This profile was developed from analyses provided to TVA by Westinghouse Electric Corporation, Pittsburgh, Pennsylvania. It has been determined that long-term primary system heat loads because of decay heat at a hot standby condition will result in higher long-term temperatures than those reflected on drawing 47E235-42. It is not expected that the long-term lower compartment temperature would exceed the peak temperature experienced immediately following a MSLB, but it is considered likely that the temperature would exceed the long-term qualification limits which have been established for safety-related equipment.

Safety Implications

With the long-term higher temperatures, which result from an extended period at hot standby conditions, the operability of equipment important to safety for the required 100 days following a MSLB accident is questionable. Therefore, the design of the plant may not satisfy the TVA commitment to maintain safety-related equipment operable for 100 days following a MSLB.

Interim Progress

The most likely corrective action which will be taken is the upgrading of the lower compartment coolers which includes seismic and environmental qualification. With this qualification, the long-term lower compartment temperature at a hot standby condition should be within the temperature range for which equipment important to safety is presently qualified. However, further evaluation will be performed to determine what specific corrective action will be taken. This information will be provided to the NRC in our final report on this deficiency. This report will be provided to the NRC on or about August 30, 1988.