



Tennessee Valley Authority, Post Office Box 2000, Spring City, Tennessee 37381

MAR 16 1993

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U.S. Nuclear Regulatory Commission
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Gentlemen:

In the Matter of the Application of)	Docket Nos. 50-390
Tennessee Valley Authority)	50-391

WATTS BAR NUCLEAR PLANT (WBN) - ADDITIONAL INFORMATION SUPPORTING CHANGES TO
CHAPTER 15 IN FINAL SAFETY ANALYSIS REPORT (FSAR) AMENDMENT 71 (TAC 84234)

This letter submits additional information about the approved methodologies that were used to analyze several of the postulated accidents described in FSAR Chapter 15. The information was requested informally by the NRC staff to assist in their review of FSAR Amendment 71. The following questions were telecopied to TVA on January 26, 1993, and then discussed in a telephone conversation on February 3, 1993, with Mr. Peter Tam and Mr. Tai Huang of the NRC staff.

1. Is the change to Table 15.1-3 Sheet 2 based on approved methodology? Provide the approved method used.

The Westinghouse computer code LOFTRAN is used as the approved methodology to analyze various accidents for WBN. A conservative value for the low-low steam generator (SG) level trip point is used as input to this code. Table 15.1-3 Sheet 2 shows the limiting value for the low-low SG level trip point that was assumed for analysis purposes. LOFTRAN is discussed further in FSAR Section 15.1.9.4 and in Westinghouse Topical Report WCAP-7907-P-A.

Note that the limiting trip point assumed in analysis for the low-low SG level trip function was changed in Amendment 71 from "0% of narrow range span between 0 and 20% nominal load, and increasing linearly to 49% of span at 100% of nominal load" to "0% or 9% of narrow range span depending on the particular accident." In Amendment 72, this limiting trip point

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assumption was changed to read simply "0% of narrow range span." The wording prior to Amendment 71 described WBN's original low-low SG level trip function, which was constant at low power levels and then increased linearly as power increased. The stated limiting trip point assumed in analysis was conservative with respect to the actual low-low SG level trip setpoint, which was 17% of narrow range span between 0 and 35% nominal load, and increasing linearly to 54.9% of narrow range span at 100% of nominal load. The change in Amendment 71 introduced an even more conservative limiting trip point assumed in analysis since WBN anticipated changing its actual low-low SG level trip setpoint to a constant value at all power levels. The change in Amendment 72 was the latest update to the limiting trip point assumed in analysis based on WBN's recent design modification to install Westinghouse's Eagle-21 process protection system. As part of the Eagle-21 modification, the actual low-low SG level trip setpoint has been changed to 17% of narrow range span at all loads.

2. Is any approved methodology used for the reanalysis for inadvertent operation of the emergency core cooling system (ECCS) as discussed in FSAR Section 15.2.14 and Table 15.2-1 Sheet 9? Provide the approved method.

Inadvertent operation of ECCS is analyzed for WBN using the computer code LOFTRAN. This is stated in FSAR Section 15.2.14.2. LOFTRAN is approved methodology as discussed above.

3. Was any approved method used to support the reanalysis for uncontrolled boron dilution as described in FSAR Section 15.2.4 and Table 15.2-1 Sheet 3? Provide the applicable methods used.

Uncontrolled boron dilution is analyzed for WBN using methodology developed by Westinghouse. This methodology was described in Westinghouse letter NS-TMA-2273 to NRC dated July 8, 1980 ("SUBJECT: Boron Dilution Concerns at Cold and Hot Shutdown"). Westinghouse has told TVA that they never received a direct response from NRC approving this methodology, but that it has been used as the basis for analyzing uncontrolled boron dilution at a number of other Westinghouse plants with designs similar to WBN. Since NRC has approved the safety analyses submitted by these plants, Westinghouse and TVA consider the methodology to be acceptable to NRC.

U.S. Nuclear Regulatory Commission
Page 3

If you have any questions about the information provided in this letter, please telephone John Vorees at (615) 365-8819.

Very truly yours,

A handwritten signature in cursive script, appearing to read "W. J. Museler".

William J. Museler

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U.S. Nuclear Regulatory Commission
Page 4

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