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MAR 08 1993

U.S. Nuclear Regulatory Commission
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Washington, DC 20555

Gentlemen:

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

WATTS BAR NUCLEAR PLANT (WBN) - ADDITIONAL INFORMATION DESCRIBING THE UPFLOW CONVERSION MODIFICATION TO THE REACTOR INTERNALS (TAC M85802 AND M85803)

This letter submits Westinghouse Topical Report WCAP-11627 to assist in the NRC staff's review of the upflow conversion modification to WBN's reactor internals. WCAP-11627 (entitled "Upflow Conversion Safety Evaluation Report, Watts Bar Units 1 & 2") provides a description of the design details and safety analyses supporting the modification. In telephone conversations between NRC and TVA on February 3, 1993, and February 18, 1993, Mr. Peter Tam of the NRC staff stated that NRC had not completed its review of upflow conversion. Therefore, he requested that TVA submit WCAP-11627 or equivalent information describing upflow conversion to supplement previous changes to the Final Safety Analysis Report (FSAR) which briefly discuss the modification.

The upflow conversion modification was developed by Westinghouse Electric Corporation to reduce cross-flow jetting at the baffle plates in the reactor internals. Such cross-flow jetting can contribute to fuel assembly damage at the periphery of the core. The problem had been diagnosed at plants similar to WBN that were originally designed to have a downward core bypass flow path through their reactor vessel lower internals assembly. TVA notified NRC of its intent to modify WBN's reactor internals for upflow conversion in a series of letters dated June 15, 1987, August 31, 1987, and March 31, 1988. The physical modification of the reactor vessel lower internals assembly to create an upward core bypass flow path, as described in WCAP-11627, has already been completed.

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The majority of FSAR changes resulting from upflow conversion involved accident analysis descriptions in Chapter 15. Draft changes to FSAR Chapter 15 for upflow conversion were combined with related changes for deletion of the upper head injection (UHI) system and submitted in a letter dated July 26, 1988. Although the actual equipment changes for upflow conversion and UHI deletion were not interrelated, these two plant modifications did affect many of the same accident analyses. Since the two modifications had been authorized at essentially the same time, the affected accident analyses were revised to incorporate, simultaneously, input parameter changes for both modifications. Consequently, the results of the revised accident analyses and the related changes to FSAR Chapter 15 represented the combined effects of both upflow conversion and UHI deletion.

The draft changes to Chapter 15 that were submitted in the letter dated July 26, 1988, were later incorporated into the FSAR by Amendment 63. A few additional changes for upflow conversion were incorporated into FSAR Chapter 4 by Amendment 71.

Deletion of the UHI system was approved by the NRC staff in WBN's Safety Evaluation Report (NUREG-0847) Supplement No. 7 (SSER 7). There was no discussion of upflow conversion in SSER 7 or later SSERs.

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

Very truly yours,



William J. Museler

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ENCLOSURE

WCAP-11627