

TENNESSEE VALLEY AUTHORITY

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APR 17 1989

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555

Gentlemen:

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

WATTS BAR NUCLEAR PLANT (WBN) UNITS 1 AND 2 - ELIMINATION OF PRIMARY LOOP PIPE BREAKS

- References:
1. 10 CFR 50 Appendix A, General Design Criterion 4, as amended in the Federal Register, Volume 51, No. 70, on April 11, 1986
 2. NUREG-1061, Volume 3, dated November 1984, "Report of the USNRC Piping Review Committee, Evaluation of Potential for Pipe Breaks"
 3. Standard Review Plan 3.6.3 (proposed), published in the Federal Register, Volume 52, No. 167, on August 28, 1987
 4. WBN Final Safety Analysis Report (FSAR), section 5.2.7, "RCPB Leakage Detection Systems"
 5. NRC Safety Evaluation Report, NUREG-0847, section 5.2.5, June 1982

The enclosed documents reflect analyses performed by TVA and its contractor in accordance with the requirements established in references 1, 2, and 3 to demonstrate the applicability of leak-before-break (LBB) technology to the WBN units 1 and 2. Based upon the enclosed information and in recognition of the current NRC regulatory stance relative to postulated primary loop pipe breaks contained in reference 1, TVA requests approval to eliminate these postulated breaks from the structural design basis for these units.

In performing these analyses, the guidance provided by NRC in references 2 and 3 was followed. Specific compliance with the detailed technical requirements relative to evaluation for potential erosion/corrosion, water hammer, water chemistry, and intergranular stress corrosion cracking is addressed in the fracture mechanics study (enclosures 1 and 2).

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The existing leakage detection capabilities are described in reference 4. These were reviewed again in support of this effort. With one exception, the design was found to be equivalent to Regulatory Guide 1.45 requirements. The exception identified involved the air supply lines to the radiation monitors. Pneumatic valves controlling airflow to these monitors could not be demonstrated to remain open following a safe shutdown event. This condition has been documented and will be corrected in both units before fuel load for each unit. The WBN leakage detection systems were reviewed previously by the staff as documented in reference 5.

Following NRC's approval of this submittal, TVA will submit proposed revisions to the WBN FSAR and reflect application of LBB in the design basis. As stipulated in reference 1, no credit for elimination of the primary loop pipe breaks will be taken toward mitigation of containment global design, equipment qualification requirements, or reduction of Emergency Core Cooling System design requirements.

The principal advantage to be gained at this time from elimination of the primary loop pipe breaks at WBN is the reduction of rupture loads on the primary system component supports. This reduction will permit the resolution of a previously identified nonconformance with regard to the reactor coolant pump supports.

Dynamic loadings on other component supports also will be reduced. A significant feature of ice condenser plants is the response of the steel containment vessel (SCV) to dynamic local pressurizations caused by large pipe breaks. Elimination of these breaks will not change the design basis of the SCV or affect the manner in which global thermal and pressurization effects are considered, but it will allow recalculation of the dynamic response using the next most severe postulated pipe break events. This, in turn, will be considered in the design of component supports attached to the SCV.

In the event that piping attached to the primary loop is reanalyzed in the future for snubber reduction or other reasons, the effects of LBB will be factored into the design.

Any additional applications which may be identified will be reflected in revisions to the appropriate design and licensing documents before implementation.

Enclosed are:

1. Westinghouse Electric Corporation, "Technical Justification for Eliminating Large Primary Loop Pipe Rupture as the Structural Design Basis for Watts Bar Units 1 and 2," dated November 1988: enclosure 1, WCAP-11984, nonproprietary version; enclosure 2, WCAP-11985, proprietary version.

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2. Enclosure 3 is a Westinghouse application for withholding proprietary information from public disclosure CAW-88-114, with accompanying affidavit and proprietary information notice.
3. Enclosure 4 contains the commitments contained in this submittal.

Because this submittal contains information proprietary to Westinghouse, it is supported by an affidavit signed by Westinghouse, the owner of the information. The affidavit sets forth the basis on which the information may be withheld from public disclosure by the Commission and addresses, with specificity, the considerations listed in paragraph (b) (4) of 10 CFR, section 2.790, of the Commission's regulations.

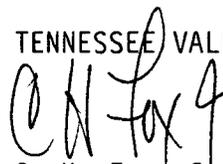
Accordingly, it is respectfully requested that the information proprietary to Westinghouse be withheld from public disclosure in accordance with 10 CFR, section 2.790, of the Commission's regulations. Correspondence with respect to the proprietary aspects of the application for withholding or the supporting Westinghouse affidavit should reference CAW-88-114 and should be addressed to R. A. Wiesemann, Manager, Regulatory and Legislative Affairs, Westinghouse Electric Corporation, P. O. Box 355, Pittsburgh, Pennsylvania 15230.

The staff is requested to review these submittals at their earliest convenience in order to permit immediate implementation.

If there are any questions, please telephone T. W. Horning at (615) 365-3381.

Very truly yours,

TENNESSEE VALLEY AUTHORITY



C. H. Fox, Jr., Vice President
and Nuclear Technical Director

Enclosures
cc: See page 4

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cc (Enclosures):

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Enclosure 1

Westinghouse Electric Corporation, "Technical Justification for Eliminating Large Primary Loop Pipe Rupture as the Structural Design Basis for Watts Bar Units 1 and 2," dated November 1988; WCAP-11984, nonproprietary version.