July 6, 1993

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

Gentlemen:

In the Matter of	)	Docket Nos. 50-327
Tennessee Valley Authority	)	50-328

SEQUOYAH NUCLEAR PLANT (SQN) - REQUEST FOR TECHNICAL REVIEW OF DRAFT INFORMATION NOTICE REGARDING THE MAIN STEAMLINE BREAK ANALYSIS FOR MAIN STEAM VALVE VAULTS AT THE SEQUOYAH AND WATTS BAR NUCLEAR PLANTS

Reference: NRC letter to TVA dated June 10, 1993

The purpose of this letter is to confirm comments previously telecopied to D. E. LaBarge on June 24, 1993, and revised in accordance with the discussion between Mr. LaBarge and J. D. Smith on June 25, 1993. The comments are attached.

Please direct questions concerning this issue to W. C. Ludwig at (615) 843-7460.

Sincerely,

Robert A. Fenech

Enclosure
cc: See page 2

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Enclosure
cc (Enclosure):
Mr. D. E. LaBarge, Project Manager
U.S. Nuclear Regulatory Commission
One White Flint, North
11555 Rockville Pike
Rockville, Maryland 20852-2739

NRC Resident Inspector
Sequoyah Nuclear Plant
2600 Igou Ferry Road
Soddy-Daisy, Tennessee 37379-3624

Regional Administrator
U.S. Nuclear Regulatory Commission
Region II
101 Marietta Street, NW, Suite 2900
Atlanta, Georgia 30323-2711

ENCLOSURE

DRAFT COMMENTS

TVA USED THE DATA TO DETERMINE THE MASS AND ENERGY RELEASED INTO THE MAIN STEAM VALVE VAULT. BY USING THIS DATA,

DRAFT

UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR REACTOR REGULATION
WASHINGTON, D.C. 20555

June , 1993

NRC INFORMATION NOTICE 93-XX: POTENTIAL PROBLEM WITH MAIN STEAMLINE BREAK ANALYSIS FOR MAIN STEAM VAULTS/TUNNELS

Addressees

All holders of operating licenses or construction permits for pressurized water reactors.

Purpose

The U.S. Nuclear Regulatory Commission (NRC) is issuing this information notice to alert addressees to a potential inadequacy in the main steamline break analysis which could place some pressurized-water reactor (PWR) plants outside their current structural design basis for the main steam valve vaults or main steam tunnels. The plants of concern are those that must postulate a double-ended rupture of a main steamline in these areas. It is expected that recipients will review the information for applicability to their facilities and consider actions, as appropriate, to avoid similar problems. However, suggestions contained in this information notice are not NRC requirements; therefore, no specific action or written response is required.

Description of Circumstances

USING PERFECT MOISTURE SEPARATION.

During the Watts Bar Calculation Reconstitution Program, Tennessee Valley Authority (TVA) discovered that Westinghouse had supplied nonconservative for the main steamline break analysis which could result in the structural design margins being exceeded in the main steam valve vaults. TVA had requested Westinghouse to reevaluate the 1975 Westinghouse mass and energy release data used in the Watts Bar analysis for these valve vaults, and to advise TVA if the data were still applicable. On June 23, 1992, Westinghouse advised TVA that the 1975 mass and energy release data were no longer considered conservative, and were not applicable for a pressure transient evaluation of the vented main steam valve vaults. Failure to account for liquid entrainment in the blowdown resulted in a reduced mass and energy release rate in the 1975 data.

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Westinghouse then provided a bounding analysis based on ANSI/ANS Standard 58 (1980) methodology which included liquid entrainment in the blowdown. This new analysis indicated that the valve vault structural design pressure would be exceeded.

THE MASS/ENERGY RELEASE DID NOT

DRAF

considered. Failure of the valve vault walls or slabs could damage such equipment as main steam system, main feedwater system, and auxiliary feedwater system components and piping. This equipment damage could result in the inability (or reduced ability) to feed the intact steam generators, or in the blowdown of more than one steam generator.

Upon consultation with Westinghouse, TVA determined that the analysis data for the Sequoyah main steam valve vault rooms were also nonconservative. A JCO has been prepared for Sequoyah. The JCO is based on the Sequoyah main steam system piping design in the valve vaults meeting most of the break exclusion provisions of the Standard Review Plan (SRP) Branch Technical Position (BTP) MEB 3-1, "Postulated Rupture Locations in Fluid System Piping Inside and Outside Containment." A postulated one-square-foot break was analyzed for the JCO interim period. The revised calculated pressures (using the ANSI/ANS 58.2 methodology) were bounded by the original design pressure of the vaults. This JCO will be in effect until the next Sequoyah, Units 1 and 2 refueling outages (Cycle 6 for both units). TVA will make plant modifications to bring the plant into compliance with the original design basis. The modifications will involve modifying each of the fluid head anchor-sleeve openings to decrease the flow area in the event of a postulated break, thereby limiting the mass and energy release rate into the valve vaults. The flow area will be sized to limit the pressure in the main steam valve vaults to less than the original design basis of the floor and walls.

Combustion Engineering and Babcock & Wilcox designed PWRs may also be affected by this issue if vented compartments have been analyzed nonconservatively, assuming dry steam. Therefore, this information notice is being sent to all PWR licensees and holders of PWR construction permits.

This information notice requires no specific action or written response. If you have any questions about the information in this notice, please contact one of the technical contacts listed below or the appropriate Office of Nuclear Reactor Regulation project manager.

Brian K. Grimes, Director
Division of Operating Reactor Support
Office of Nuclear Reactor Regulation

Technical contacts: J. B. Brady, Region II
(404) 331-0339

W. T. Lefave, NRR
(301) 504-3285

Attachment:
List of Recently Issued NRC Information Notices