TENNESSEE VALLEY AUTHORITY
CHATTANOOGA, TENNESSEE 37401
500C Chestnut Street Tower II

FEB 20 1979

Mr. James P. O'Reilly, Director
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Region II - Suite 3100
101 Marietta Street
Atlanta, Georgia 30303

Dear Mr. O'Reilly:

WATTS BAR NUCLEAR PLANT UNITS 1 AND 2 - DISCREPANCY IN LOCA ANALYSIS OF REACTOR COOLANT LOOP - NCR EN DES 11 - FINAL REPORT

The subject deficiency was initially reported to NRC-OIE Inspector L. E. Foster on August 15, 1977. Interim reports were submitted on September 15, 1977 (with a supplement on October 4, 1977), January 24, 1978, July 19, 1978, and October 5, 1978. Enclosed is our final report.

If you have any questions concerning this matter, please get in touch with M. R. Wisenburg at FTS 854-2581.

Very truly yours,

J. E. Gilleland
Assistant Manager of Power

Enclosure
cc: Mr. John G. Davis, Acting Director (Enclosure) ✓
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Washington, DC 20555

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ENCLOSURE

WATTS BAR NUCLEAR PLANT UNITS 1 AND 2
DISCREPANCY IN LOCA ANALYSIS OF REACTOR COOLANT LOOP
NCR EN DES 11
FINAL REPORT

Description of Deficiency

Westinghouse reported to TVA and Engineering Data Systems (EDS) that in performing the final reactor coolant loop analysis they had discovered discrepancies in their previous models. For seismic response, these discrepancies included misrepresentations of the reactor coolant pump tie rods and reactor vessel support stiffnesses. The revised seismic and LOCA analyses resulted in new displacements of the reactor coolant loop branch nozzles. The previous displacements had been used by EDS for branch piping analysis.

Safety Implications

Since the study concludes that the existing designs are acceptable, the safe operation of the plant is not adversely affected.

Corrective Action

TVA reanalyzed 10 class 1 branch lines which, according to the new response spectra, would be most adversely affected by the revised seismic and LOCA data. The 10 lines including all ECCS branch piping, 8 RCL piping nozzles, 3 RCP nozzles, and 4 RPV nozzles are in the safety injection, upper head injection, chemical volume and control, and residual heat removal systems. Line sizes range from 14 inches to 1-1/2 inches NPS. Additionally, Westinghouse analyzed the pressurizer surge and incore-monitoring lines in their final analyses.

The study concludes for the 10 lines analyzed that there is no significant impact to the existing designs. Stress levels, support loads, and nozzle loads, although there were increases in certain areas of the problems analyzed, still remain acceptable.

Means to Prevent Recurrence

Revised seismic and LOCA input data will be used in any future analysis of the reactor coolant loop.