

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

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WBRD-50-391/82-38

U.S. Nuclear Regulatory Commission
Region II
Attention: Dr. J. Nelson Grace, Regional Administrator
101 Marietta Street, NW, Suite 2900
Atlanta, Georgia 30323

Dear Dr. Grace:

WATTS BAR NUCLEAR PLANT (WBN) - UNIT 2 - DIGITIZED RESPONSE SPECTRA DATA USE -
WBRD-50-391/82-38 - FINAL REPORT

The subject deficiency was initially reported to NRC-Region II Inspector R. V. Crlenjak on June 22, 1982 in accordance with 10 CFR 50.55(e) as NCR WBN CEB 8205. Interim reports were submitted on May 21 and October 25, 1982, and July 20, 1983. Our final report for unit 1 and our fourth interim report for unit 2 was submitted on September 22, 1983. Our fifth interim report for unit 2 was submitted on October 24, 1985. Enclosed is our final report.

If there are any questions, please get in touch with J. A. McDonald at (615) 365-8527.

Very truly yours,

TENNESSEE VALLEY AUTHORITY


R. L. Gridley, Director
Nuclear Safety and Licensing

Enclosure

cc: Mr. James Taylor, Director (Enclosure)
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Records Center (Enclosure)
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ENCLOSURE
WATTS BAR NUCLEAR PLANT UNIT 2
INCORRECT USE OF SUPERSEDED SEISMIC RESPONSE SPECTRA DATA
WBRD-50-391/82-38
NCR WBN CEB 8205
10 CFR 50.55(e)
FINAL REPORT

Description of Deficiency

Digitized seismic response spectra data used to qualify safety-related piping which attaches to the reactor coolant loop (RCL) branch lines was found to be used improperly. This deficiency involved the use of previously superseded data for the reanalysis of these components with respect only to the seismic portion of this analysis.

The incorrect utilization of seismic spectra was discovered during a design-data review. The assignable cause has been determined to be that a TVA Civil Engineering Branch (CEB) report which contained the seismic response spectra data was an uncontrolled document. Because of this, an old revision was inadvertently used to perform piping analyses.

Safety Implications

The condition resulted in superseded and possibly unconservative response spectra data being used to qualify safety-related piping (RCL branch line). If the design was deficient, this condition could have jeopardized the integrity of the RCL during a seismic event, and thereby, adversely affected the safe operation of the plant.

Corrective Action

TVA has completed the unit 1 reanalysis work on all piping systems identified as having had superseded or improper RCL seismic response spectra data applied. All affected unit 2 isometric drawings and support load tables have been revised and support design modifications have been completed as required. This work was accomplished under engineering change notice (ECN) 4861.

TVA has established a controlled computer data base for the RCL seismic response spectra data for the analysis use. TVA has also issued sections WBN-RAH-211 and WBN-RAH-212 to the Watts Bar Nuclear Plant (WBN) Rigorous Analysis Handbook (RAH). These sections detail how to pick the correct spectra for piping analysis and the proper method to RCL interface, respectively. CEB Engineering Procedure (EP) 21.38 was issued on April 25, 1983. This EP establishes instruction and responsibilities for the control and documentation of CEB reports. These corrective actions will prevent recurrence of this type deficiency.

All work associated with the subject deficiency will be completed by initial fuel loading for WBN unit 2.