

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

5N 157B Lookout Place

JUN 27 1986

WBRD-50-391/82-85

U.S. Nuclear Regulatory Commission
Region II

Attn: Dr. J. Nelson Grace, Regional Administrator
101 Marietta Street, NW, Suite 2900
Atlanta, Georgia 30323

Dear Dr. Grace:

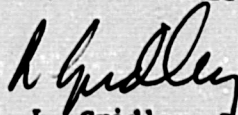
**WATTS BAR NUCLEAR PLANT UNIT 2 - INCORRECT INSULATION WEIGHTS USED IN PIPING
ANALYSIS - WBRD-50-391/82-85- FINAL REPORT**

The subject deficiency was initially reported to NRC-OIE Inspector D. Quick on August 25, 1982 in accordance with 10 CFR 50.55(e) as NCR WBN CEB 8223. Related NCR WBN SWP 8247 was subsequently determined to be reportable and both NCRs were reported together. Interim reports for unit 2 were submitted on September 24, 1982, April 25, September 16, and December 22, 1983, December 20, 1984 and October 23, 1985. Enclosed is our final report.

If you have any questions concerning this matter, please get in touch with R. H. Shell at FTS 858-2688.

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)
Institute of Nuclear Power Operations
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ENCLOSURE

WATTS BAR NUCLEAR PLANT UNIT 2
INCORRECT INSULATION WEIGHTS USED IN PIPING ANALYSIS
WBRD-50-391/82-85
NCRs WBN CEB 8223 AND WBN SWP 8247
10 CFR 50.55(e)
FINAL REPORT

Description of Deficiency

TVA identified several piping analysis problems which had incorrect insulation weights or insulation requirements applied to them. Also, on some problems, the insulation data which was used had not been verified by quality assurance documentation.

This deficiency occurred because there were no requirements for quality controlled insulation data at the time of occurrence. Design drawings detailing insulation requirements had not been issued for all rigorously analyzed piping systems. Therefore, insulation data was acquired from various uncontrolled sources.

Safety Implications

Incorrect insulation data applied to piping analysis problems could possibly result in unconservative or inadequate piping support designs and installations. This could result in the failure of an affected, safety-related piping system during a safe shutdown earthquake or during normal operating conditions. This could adversely affect the safe operation of the plant.

Corrective Action

TVA has prepared insulation drawings in accordance with Watts Bar Engineering Project (WBEP) Engineering Procedure (EP) 43.18. This EP was issued on January 9, 1986, and describes the program for reviewing and documenting the insulation/heat tracing design requirements for all primary and secondary safety-related mechanical (piping and equipment) and instrumentation systems in seismic category I structures at Watts Bar Nuclear Plant (WBN). Insulation drawings which are currently issued are being used to verify that correct insulation weights were used in affected rigorous piping analysis problems. Differences which are identified will be resolved by evaluation or reanalysis of the involved problems.

The verification effort of affected analysis problems is approximately 90-percent complete. One rigorous piping analysis problem has been identified to date which will require reanalysis and reevaluation of support loads due to insulation modifications. TVA has issued engineering change notice (ECN) 6053 to accomplish this work.

All corrective actions for this item, including any necessary reanalysis and support modifications will be completed by initial fuel loading for WBN unit 2. The stated corrective actions and the evaluation of insulation drawings issued in the future will be done in accordance with existing TVA Division of Nuclear Engineering (DNE) EP. The issuance and use of WBEP-EP 43.18 will prevent recurrence of this deficiency.