

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401
400 Chestnut Street Tower II

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October 4, 1983

WBRD-50-390/81-07
WBRD-50-391/81-06

U.S. Nuclear Regulatory Commission
Region II
Attn: Mr. James P. O'Reilly, Regional Administrator
101 Marietta Street, NW, Suite 2900
Atlanta, Georgia 30303

Dear Mr. O'Reilly:

WATTS BAR NUCLEAR PLANT UNITS 1 AND 2 - UNCONSERVATIVE LOADS ON PIPE SUPPORT
DESIGN MODIFICATIONS - WBRD-50-390/81-07, WBRD-50-391/81-06 - FINAL REPORT
UNIT 1 AND SEVENTH INTERIM REPORT FOR UNIT 2

The subject deficiency was initially reported to NRC-OIE Inspector R. W. Wright on December 17, 1980 in accordance with 10 CFR 50.55(e) as NCR WBN CEB 8013. This was followed by our interim reports dated January 19, March 2, April 1, and August 12, 1981, July 27, 1982 and June 17, 1983. Enclosed is our final report for unit 1 and our seventh interim report for unit 2. We expect to provide additional information on unit 2 on or about July 2, 1984. This nonconformance was also reported for Sequoyah Nuclear Plant as NCR SQK CEB 8039.

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

Very truly yours,

TENNESSEE VALLEY AUTHORITY

L. M. Mills

L. M. Mills, Manager
Nuclear Licensing

Enclosure

cc: Mr. Richard C. DeYoung, 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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Atlanta, Georgia 30339

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ENCLOSURE

WATTS BAR NUCLEAR PLANT UNITS 1 AND 2
UNCONSERVATIVE LOADS ON PIPE SUPPORT DESIGN MODIFICATIONS
NCR WBN CEB 8013
WBRD-50-390/81-07, WBRD-50-391/81-06
10 CFR 50.55(e)

FINAL REPORT FOR UNIT 1 AND SEVENTH INTERIM REPORT FOR UNIT 2

Description of Deficiency

Piping system analysis and pipe support design efforts for classes 1, 2, and 3 systems inside containment were contracted to EDS Nuclear, Inc. (EDS), as a total scope effort. Support designs were issued and revised by EDS until approximately 1978 on Watts Bar. While EDS had design and revision responsibility, any piping reanalysis results were reviewed by EDS for impact on existing support designs. If increased support load did not require design modifications, hanger drawings were not revised to increase the loads tabulated on the hanger drawing. Design control responsibility for all hanger drawings was subsequently turned over to TVA, and subsequent design modifications by TVA were based on the design loads tabulated on the drawings. Therefore, the design modifications by TVA may be based on unconservative loads.

TVA was not aware of the EDS policy of not revising the support loads on the support drawings unless structural changes were made to the supports. Consequently, when TVA took responsibility for the control of the support drawings, TVA assumed that the support drawings depicted the current support loads.

Safety Implications

Pipe supports whose design is based on unconservative loads could become overstressed and fail during a design basis seismic event. Pipe support failure on classes 1, 2, and 3 systems could overstress the piping and possibly result in a pipe failure which could adversely affect the safety of operations of the plant.

Interim Progress on Unit 2

Due to EN DES's support of the WBN unit 1 near-term operating license effort, design work associated with this problem on WBN unit 2 has been temporarily suspended. TVA will provide the next report on unit 2 upon conclusion of the unit 2 support design work.

Corrective Action for Unit 1

TVA has reviewed and evaluated all unit 1 supports on piping originally analyzed by EDS and ensured that the support drawings reflect and are designed for the current loads.

All applicable support drawings for unit 1 have been completed and issued under engineering change notice (ECN) 2891. TVA's Division of Construction (CONST) rework for unit 1, under ECN 2891, will be completed by December 31, 1983. Control of pipe support revisions has been transferred from EDS to TVA, thereby, mitigating the possibility of recurrence of this problem.