TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

400 Chestnut Street Tower II

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May 10, 1982

WBRD-50-390/82-32
WBRD-50-391/82-29
BLRD-50-438/82-29
BLRD-50-439/82-26
YCRD-50-566/82-09
YCRD-50-567/82-09

U.S. Nuclear Regulatory Commission
Region II
Attn: Mr. James P. O'Reilly, Regional Administrator
101 Marietta Street, Suite 3100
Atlanta, Georgia 30303

Dear Mr. O'Reilly:

WATTS BAR, BELLEFONTE, AND YELLOW CREEK NUCLEAR PLANTS UNITS 1 AND 2 - ERRORS IN WERCO PROGRAM DISTRIBUTED BY AAA TECHNOLOGY - FIRST INTERIM REPORT

The subject deficiency was initially reported to NRC-OIE Inspector D. Quick on April 9, 1982 in accordance with 10 CFR 50.55(e) as NCRs WBN CEB 8204, BLN CEB 8204, and YCN CEB 8201. Enclosed is our first interim report. We expect to submit our next report by June 25, 1982.

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

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, DC 20555

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ENCLOSURE

WATTS BAR, BELLEFONTE, AND YELLOW CREEK NUCLEAR PLANTS UNITS 1 AND 2
NCR'S WBN CEB 8204, BLN CEB 8204, YCN CEB 8201
ERROR IN WERCO PROGRAM DISTRIBUTED BY AAA TECHNOLOGY
WBRD-50-390/82-32, WBRD-50-391/82-29;
BLRD-50-438/82-29, BLRD-50-439/82-26; YCRD-50-566/82-09, YCRD-50-567/82-09
10 CFR 50.55(e)
FIRST INTERIM REPORT

Description of Deficiency

TVA has utilized the WERCO program, distributed by AAA Technology (Houston, Texas) to evaluate peak stresses on spherical and cylindrical shells due to external loads from attachments. TVA users of the WERCO program have erroneously assumed the program uses the maximum curve values in the evaluation of peak stresses in spherical shells and assumed the WERCO program can be utilized to calculate peak stress due to torsional loads on rectangular attachments.

The apparent cause is the documentation of the WERCO program does not include a complete description of the assumptions and limitations of the program. This has caused unacceptable usage of the program in the design of TVA plants.

Interim Progress

All projects and branches within the TVA Division of Engineering Design with design responsibilities requiring the WERCO program were queried to determine the usage of the WERCO program in design. All analyses utilizing the WERCO program are being reviewed and reanalysis is being performed as applicable.

TVA has elected to defer construction activities at Yellow Creek. Deferral does not mean that the project will be cancelled but that TVA is minimizing its expenditures and construction efforts until such time that TVA has sufficient information to indicate whether the project should be completed or cancelled. Therefore, we will not be submitting a final report for this nonconformance until a final decision is made regarding this project.

To prevent further misuse of the program, all WERCO users have been notified of the problems when using WERCO. TVA is planning to replace the WERCO program with the TVA program WRC107 by July 30, 1982.