TENNESSEE VALLEY AUTHORITY
CHATTANOOGA, TENNESSEE 37401

400 Chestnut Street Tower II

October 29, 1985 85 NOV 1 AM : 15

WBRD-50-391/82-43

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 SEISMIC DISPLACEMENT AND RESPONSE SPECTRA USE - WBRD-50-391/82-43 - SEVENTH INTERIM REPORT

The subject deficiency was initially reported to NRC-OIE Inspector F. Long on April 30, 1982 in accordance with 10 CFR 50.55(e) as NCR CEB 8208. Enclosed is our seventh interim report. We expect to submit our next report on or about July 30, 1986.

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

Very truly yours,

TENNESSEE VALLEY AUTHORITY

J. A. Domer

J. W. Hufham, Manager
Licensing and Risk Protection

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
1100 Circle 75 Parkway, Suite 1500
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ENCLOSURE

WATTS BAR NUCLEAR PLANT UNIT 2
INCORRECT SEISMIC DISPLACEMENT AND RESPONSE SPECTRA USE
WBRD-50-391/82-43
NCR WBN CEB 8208
10 CFR 50.55(e)
SEVENTH INTERIM REPORT

Description of Deficiency

In the design review of main feedwater (MFW) lines, it was discovered that some erroneous displacements were used for the steam generator nozzle in MFW analysis problem 0600200-02-03. The cause of this deficiency is the oversight by TVA in the coordinate transformation from the vendor's coordinate system to TVA's coordinate system. At the same time, it was also discovered that an incorrect seismic response spectra for steam generator No. 1 was used in MFW analysis problem 0600200-02-01.

Subsequent investigations have found other safety-related lines attached to the reactor coolant loop which have been analyzed using unconservative seismic response spectra. These errors can have the adverse effect of increasing the calculated stress in the affected piping and nozzles. They were recognized for unit 1, but the effect will be considered for both units. The new analysis problems in question involve piping in the chemical volume control, steam generator blowdown, safety injection, and reactor coolant loop systems.

Safety Implications

The use of unconservative response spectra could have resulted in safety-related piping being stressed beyond its limits. Failure of the overstressed piping could therefore create a condition adverse to the safe operation of the plant.

Interim Progress

TVA is still analyzing safety-related piping attached to the reactor coolant loop which was originally analyzed using unconservative seismic response spectra and incorrect displacements. TVA will modify support designs as required under engineering change notices (ECNs) 4774 and [illegible]2. The work required to rectify this deficiency has not been completed due to priority given to the unit 1 work. A final report will be submitted by July 30, 1986.

In order to prevent recurrence of this deficiency, the Rigorous Analysis Handbook will be revised to add sections on how to convert data from the vendor's coordinate system to TVA's coordinate system and details on how to pick the correct spectra for the piping analysis.