TENNESSEE VALLEY AUTHORITY
CHATTANOOGA, TENNESSEE 37401
400 Chestnut Street Tower II

July 7, 1983

WBRD-50-390/83-10
WBRD-50-391/83-09

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 - SUMMATION OF LOADS IN STRUDL CODE - WBRD-50-390/83-10, WBRD-50-391/83-09- FINAL REPORT

The subject deficiency was initially reported to NRC-OIE Inspector L. Watson on February 15, 1983 in accordance with 10 CFR 50.55(e) as NCR WBN SWP 8310. Our first interim report was submitted on March 22, 1983. Enclosed is our final report.

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, 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
1100 Circle 75 Parkway, Suite 1500
Atlanta, Georgia 30339

ENCLOSURE

WATTS BAR NUCLEAR PLANT UNITS 1 AND 2
SUMMATION OF LOADS IN STRUDL CODE
NCR WBN SWP 8310
WBRD-50-390/83-10, WBRD-50-391/83-09
10 CFR 50.55(e)
FINAL REPORT

Description of Deficiency

Users of STRUDL computer programs including dynamic analysis have combined static and dynamic loads by a method which yields less conservative results. This deficiency occurred because of misinterpretation of the STRUDL dynamic load output. This was due to inadequate knowledge, on the part of the designers, of the STRUDL program users manual instructions concerning this output. Output from this code is used to design miscellaneous steel platforms in safety-related areas.

Safety Implications

If this deficiency had remained uncorrected, the steel platforms might have failed during a seismic event causing damage to safety-related equipment and piping.

Corrective Action

All applications of the STRUDL program for Watts Bar were reviewed to identify deviations. Only one platform was found which required modifications. Drawing changes for this platform have been completed and were issued on June 14, 1983, under engineering change notice (ECN) 3850. Completion of the construction work required is scheduled for September 30, 1983. A review has shown that no other TVA plants are affected.

The STRUDL program users manual has been reviewed and found to give correct instructions on how to combine both static and dynamic loads to get the correct maximum results. In order to prevent future occurrences, designers have been notified of this deficiency and a formal memorandum was issued to them from the Watts Bar Design Project Manager advising them of the correct computer commands necessary to achieve the proper results.