TENNESSEE VALLEY AUTHORITY

CHATTANOOGA TENNESSEE 37401
400 Chestnut Street Tower II

July 20, 1982

WBRD-50-390/81-18
WBRD-50-391/81-17

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 NUCLEAR PLANT UNITS 1 AND 2 - REROUTING OF HIGH-PRESSURE FIRE PROTECTION PIPING - WBRD-50-390/81-18, WBRD-50-391/81-17 - FIFTH INTERIM REPORT

The subject deficiency was initially reported to NRC-OIE Inspector R. W. Wright on January 30, 1981 in accordance with 10 CFR 50.55(e) as NCR SWP 8103. Interim reports were submitted on March 2 and June 3, 1981. A final report was submitted on August 14, 1981, and additional information was submitted on September 18, 1981. A subsequent fourth interim report was submitted on March 2, 1982. Enclosed is our fifth interim report. We expect to submit our next report by October 15, 1982.

In our last report, we committed to provide the results of our analysis of the High Pressure Fire Protection System. Enclosed are the results of that analysis.

If you have any questions, please get in touch with R. H. Shell at FTS 850-2688.

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

OFFICIAL COPY

ENCLOSURE

WATTS BAR NUCLEAR PLANT UNITS 1 AND 2
REROUTING OF HIGH-PRESSURE FIRE PROTECTION PIPING
WBRD-50-390/81-18, WBRD-50-391/81-17
10 CFR 50.55(e)
FIFTH INTERIM REPORT

Description of Deficiency

Field Change Requests (FCRs) for piping changes and additions may have been approved by EN DES without proper analyses being performed on the effects of the changes on the system pressure. The lack of these analyses could result in insufficient pressure for parts of the High-Pressure Fire Protection System.

Corrective Action

The majority of the sprinkler system was designed using the pipe schedule method per NFPA 13, Chapter 3, which is a conservative design which does not take pipe routing limitations into consideration. Hydraulic calculations have been performed on sprinkler piping as well as other portions of the high-pressure fire protection system to ensure that adequate water supply and coverage is available for all fire hazards. These calculations, along with a review of FCRs, have revealed no deficiencies that can be attributed to piping changes and additions resulting from FCRs; however, several areas were noted where available pressure appears to be inadequate or marginal. These areas are being further reviewed and calculations rechecked to determine if header resizing will be required. Three areas within the plant have been selected as representing the worst case conditions. Of these areas, the hydraulic calculations have been completed and checked for one. For the second area, calculations have been made but not yet checked. Calculations are in progress for the third area.