

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401
400 Chestnut Street Tower II

February 11, 1982

WBRD-50-390/81-87
WBRD-50-391/81-81

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:

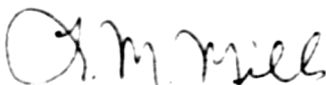
WATTS BAR NUCLEAR PLANT UNITS 1 AND 2 - LOCATING CCS BOOSTER PUMPS BELOW
FLOOD ELEVATION - WBRD-50-390/81-87, WBRD-50-391/81-81 - FINAL REPORT

The subject deficiency was initially reported to NRC-OIE Inspector
R. V. Crlenjak on October 9, 1981 in accordance with 10 CFR 50.55(e)
as NCR WBN SWP 8157. Our first interim report was submitted on
November 9, 1981. 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 Regulation and Safety

Enclosure

cc: Mr. Richard C. DeYoung, Director (Enclosure)
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Washington, DC 20555

NRC REGION II
ATLANTA, GEORGIA

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ENCLOSURE

WATTS BAR NUCLEAR PLANT UNITS 1 AND 2
LOCATING CCS BOOSTER PUMPS BELOW FLOOD ELEVATION
WBRD-50-390/81-87, WBRD-50-391/81-81
10 CFR 50.55(e)
FINAL REPORT

Description of Deficiency

The design of the component cooling system (CCS) reactor coolant pump thermal barrier booster pumps was based on a maximum possible flood elevation of 737.5 ft above sea level as stated in the WBNP PSAR Appendix 2.7A. Subsequent revisions to the calculations for determining the maximum possible flood increased this elevation from 737.5 ft to 738.1 ft with surge level within flooded structures of 738.6 ft as indicated in the WBNP FSAR Section 2.4.14.1.

The personnel responsible for the design and review of the CCS were not aware of this change in the flood elevation and therefore did not incorporate this change into the system design. There was no design criteria documentation available by which the revised information could be readily transmitted to the personnel responsible for system design.

Safety Implications

These pumps are required to provide cooling water to the reactor coolant pump thermal barriers. During a flood, these pumps might be submerged and unable to perform their safety function.

Corrective Action

The CCS thermal barrier booster pump pedestal designs have been redesigned to raise the pumps above the maximum possible flood elevation at WBN. Design drawings have been issued and the work will be completed before fuel load.

In order to prevent recurrence of this type of nonconformance, environmental design criteria are being developed which will specify the environmental conditions for qualification of equipment and design of environmental control systems (ECS) during all normal, abnormal, and accident conditions. We anticipate issuance of the environmental design criteria on or before April 1, 1982.