TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401
400 Chestnut Street Tower II

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WBRD-50-390/84-49
WBRD-50-391/84-44

U.S. Nuclear Regulatory Commission
Region II
Attn: Dr. J. Nelson Grace, Regional Administrator
101 Marietta Street, NW, Suite 2900
Atlanta, Georgia 30303

Dear Dr. Grace:

WATTS BAR NUCLEAR PLANT UNITS 1 AND 2 - REACTOR COOLANT PUMP OIL DRAIN DOES NOT MEET APPENDIX R REQUIREMENT - WBRD-50-390/84-49, WBRD-50-391/84-44 - REVISED FINAL REPORT

The subject deficiency was initially reported to NRC-OIE Inspector P. E. Fredrickson on October 29, 1984 in accordance with 10 CFR 50.55(e) as NCR WBN NEB 8414. A final report was submitted on November 21, 1984. Enclosed is our revised 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

J. A. Domer
for J. W. Hufham, Manager
Licensing and Regulations

Enclosure
cc (Enclosure):
Mr. James Taylor, Director
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

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ENCLOSURE

WATTS BAR NUCLEAR PLANT UNITS 1 AND 2

REACTOR COOLANT PUMP OIL DRAIN DOES NOT MEET APPENDIX R REQUIREMENT

WBRD-50-390/84-49, WBRD-50-391/84-44

NCR WBN NEB 8414

10 CFR 50.55(e)

REVISED FINAL REPORT

Description of Deficiency

10 CFR 50, Appendix R, Section III, requires that the reactor coolant pump (RCP) be equipped with an oil collection system. It further requires that all RCP oil leakage shall be "collected and drained to a vented closed container that can hold the entire lube oil system inventory." The present RCP oil drain system at Watts Bar Nuclear Plant (WBN) is designed and installed such that leaked oil will be collected in an 80-gallon auxiliary sump which is located inside the reactor building sump floor and equipment drain. The lube oil system inventory for a single RCP at WBN is approximately 266 gallons. Thus, if the entire inventory were drained, the auxiliary sump would be unable to contain all of the oil.

The RCP oil drain lines were correctly routed to the reactor building floor and equipment drain sump, which has adequate capacity, when they were first designed in January 1978. This was done under engineering change notice (ECN) 1381 to comply with the WBN supplemental fire protection design criteria. However, in order to meet TVA's commitment to maintain a minimum post-loss of coolant accident (LOCA) water level inside the crane wall, a small auxiliary sump was designed to be installed inside the floor and equipment drain sump to collect the flow from drains inside the crane wall. This was done per ECN 1726. Since the RCP oil drain lines connect to the same header which serves the floor drains inside the crane wall, their flow was in turn routed to the auxiliary sump. This auxiliary sump has an inadequate free volume to contain the required lube oil inventory. TVA considers this failure to adhere to the previous commitment to be a design oversight.

Safety Implications

In the event of a failure in the RCP oil seal system, the inadequate capacity of the auxiliary sump would result in lube oil backing up through the floor drains onto the containment floor. This spilled oil could present a fire hazard. A fire inside containment could adversely affect the safe operation of the plant.

Corrective Action

TVA will reroute the drain lines for the RCP oil drip collection pans from the auxiliary sump to the reactor building floor and equipment drain sump. This sump is a closed, vented container and the normal operating level will be lowered to ensure that the free volume is adequate to contain the lubricating oil system inventory of all four pumps. This work will be accomplished per ECN 5218 for unit 1 and ECN 5219 for unit 2.

TVA considers this deficiency to be a design oversight. The condition was identified during a review for compliance with 10 CFR 50, Appendix R, requirements. No action to prevent recurrence is required.

All corrective actions for this item will be completed by March 8, 1985, for unit 1, and by November 15, 1985, for unit 2.