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

83 SEP 2 A9:23 83 OCT 3 A9:28

September 29, 1983

WBRD-50-390/82-28
WBRD-50-391/82-25

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 - CONTAINMENT SPRAY MINIFLOW VALVE DESIGN ERROR - WBRD-50-390/82-28, WBRD-50-391/82-25 - FINAL REPORT

The subject deficiency was initially reported to NRC-OIE Inspector D. Quick on March 5, 1982 in accordance with 10 CFR 50.55(e) as NCR WBN NEB 8205. Interim reports were submitted on April 2, July 2, September 8, and December 1, 1982 and February 25 and July 6, 1983. Enclosed is our final report. We consider 10 CFR Part 21 applicable to this deficiency.

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

L. M. Mills, Manager
Nuclear Licensing

Enclosure
cc (Enclosure):
Mr. Richard C. DeYoung, 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
CONTAINMENT SPRAY MINIFLOW VALVE DESIGN ERROR
NCR WBN NEB 8205
WBRD-50-390/82-28, WBRD-50-391/82-25
10 CFR 50.55(e)
FINAL REPORT

Description of Deficiency

The containment spray (CS) miniflow is supposed to be terminated when the total CS pump flow is greater than 2000 gpm. This logic is called for in the Westinghouse Electric Corporation (Pittsburgh, Pennsylvania) system description WAT/WBT-906/4, section 7.3.1. Contrary to this, the Watts Bar Nuclear Plant (WBN) CS electrical logic diagram (47W611-72-1) does not provide for closure of the miniflow control valves (FCV 72-13 and -34) under the specified flow condition.

The root cause of this deficiency was due to an apparent QA breakdown in Westinghouse's design/review process.

Safety Implication

If the miniflow valves do not close when the CS pump flow exceeds 2000 gpm, then the total flow available to the CS headers would be reduced. Since this could reduce the flow to the CS headers below design conditions, the primary safety function of the CS system could be impaired. This could be a condition adversely affecting the ability to safely shut down the reactor.

Corrective Action

Westinghouse has revised the elementary wiring diagram to conform to the system description. All affected TVA design drawings have been revised and issued consistent with Westinghouse's elementary wiring diagram. These revisions provide for closure of the miniflow valves under the appropriate conditions. Field changes were required as a result of the design modifications. Unit 1 field modifications are complete and the unit 2 rework is scheduled for completion by March 15, 1984.

Westinghouse has revised their internal Design Assurance and Design Verification procedures to require an independent review of technical and QA related details. This action should help prevent the possibility of recurrences of this type deficiency.