

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

5N 157B Lookout Place

NOV 17 AIO: 24  
January 10, 1986

WBRD-50-390/86-03

U.S. Nuclear Regulatory Commission  
Region II

Attention: Dr. J. Nelson Grace, Regional Administrator  
101 Marietta Street, NW, Suite 2900  
Atlanta, Georgia 30323

Dear Dr. Grace:

WATTS BAR NUCLEAR PLANT UNIT 1 - UNACCEPTABLE APPENDIX R INTERACTION ON  
AUXILIARY FEEDWATER WBRD-50-390/86-03 - INTERIM REPORT

The subject deficiency was initially reported to NRC-OIE Inspector  
Al Ignatonis on November 27, 1985 in accordance with 10 CFR 50.55(e)  
as NCR WBN MEB 8543. Enclosed is our interim report. We expect to submit our  
next report on or about January 27, 1986.

Delay in submittal of this report was discussed with Mr. Ignatonis on  
January 6, 1986.

If there are any questions, please get in touch with R. H. Sheil at  
FTS 858-2688.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

*J. A. Hufham*  
J. W. Hufham

Manager of Licensing

Enclosure

cc: Mr. James Taylor, 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  
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ENCLOSURE

WATTS BAR NUCLEAR PLANT UNIT 1  
UNACCEPTABLE APPENDIX R INTERACTION ON AUXILIARY FEEDWATER  
WBRD-50-390/86-03  
SCR WBN MEB 8543  
10 CFR 50.55(e)  
INTERIM REPORT

Description of Deficiency

Adequate separation of redundant auxiliary feedwater (AFW) equipment has not been provided in accordance with 10 CFR 50 Appendix R on auxiliary building elevation 737.0 between columns s-t/A3-A4. This area contains the motor-driven AFW pumps' steam generator level control valves 1-LCV-3-148, -156, -164, and -171. The Watts Bar Nuclear Plant (WBN) unit 1 Appendix R safe shutdown analysis required two or more of these normally closed valves to be manually opened to satisfy one possible shutdown path during a fire. The area also contains the following control circuits for the turbine-driven AFW pump's steam supply line isolation valves which are required for the redundant shutdown path:

<u>Cable</u>	<u>Function</u>
1V1833A	120V ac control for valve 1-FCV-1-15
1V2621A	120V ac control for valve 1-FCV-1-17
1B2623A	120V ac control for valve 1-FCV-1-17
1V2631B	120V ac control for valve 1-FCV-1-18
1M1452A	Transfer control for 1-FCV-1-16 and -51

Safety Implications

A postulated fire in the identified area could prevent operator access necessary to manually open the steam generator level control valves. This could effectively render the motor-driven AFW pumps inoperable. The fire could also cause the spurious closure of one or more of the affected turbine-driven AFW pumps steam supply line isolation valves due to direct fire damage of their control circuits. This could cause the loss of the turbine-driven AFW pump's steam supply, thus rendering the pump inoperable. Although the steam line isolation valves can be reopened using local manual actions, and the turbine-driven pump restored to operation, such efforts would tax the capabilities of available manpower when all other operator actions are considered in a postulated fire scenario. If the valves cannot be reopened promptly, the result could be a total loss of the AFW system, and a subsequent loss of safe shutdown capability. Therefore, if this condition had remained uncorrected, the safe operation of the plant could have been adversely affected.

Interim Progress

TVA will relocate cables 1V2623A and 1M1452A outside of the postulated fire area. The remaining cables for the affected turbine-driven AFW steam line isolation valves will be modified to prevent the possibility of spurious valve closure due to fire damage. This work will be done per engineering change notice (ECN) 6016. A similar configuration exists with unit 2 AFW components at auxiliary building elevation 737.0, between columns s-t/A12-A13. This situation is being addressed in the original Appendix R safe shutdown analysis for unit 2.

TVA is presently evaluating the subject deficiency to determine the root cause, generic implications, and actions to be taken to prevent recurrence. TVA will submit our next report to NRC on this item on or about January 27, 1986.