

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

400 Chestnut Street Tower II

August 14, 1985

85 AUG 19 A10:51

WBRD-50-390/85-26  
WBRD-50-391/85-24

U.S. Nuclear Regulatory Commission  
Region II  
Attn: Dr. J. Nelson Grace, Regional Administrator  
101 Marietta Street, NW, Suite 2900  
Atlanta, Georgia 30323

Dear Dr. Grace:

WATTS BAR NUCLEAR PLANT UNITS 1 AND 2 - NONINDEPENDENT CONTROL POWER SUPPLY TO  
AUXILIARY FEEDWATER PUMPS - WBRD-50-390/85-26, WBRD-50-391/85-24 - FINAL REPORT

The subject deficiency was initially reported to NRC-OIE Inspector  
Al Ignatonis on July 26, 1985 in accordance with 10 CFR 50.55(e) as  
Significant Condition Report (SCR) WBN EEB 8524. Enclosed is our final report.

If you have any questions concerning this matter, please get in touch with  
R. H. Shell at FTS 858-2688.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

*J. A. Hufham*  
for J. W. Hufham, Manager  
Licensing and Risk Protection

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 1100  
Atlanta, Georgia 30339

8508280442 850814  
PDR ADOCK 05000390  
S PDR

## ENCLOSURE

WATTS BAR NUCLEAR PLANT UNITS 1 AND 2  
NONINDEPENDENT CONTROL POWER SUPPLY TO AUXILIARY FEEDWATER PUMPS  
WBRD-50-390/85-26, WBRD-50-391/85-24  
SCR WBN EEB 8524  
10 CFR 50.55(e)  
FINAL REPORT

### Description of Deficiency

On October 3, 1980, TVA issued nonconformance report (NCR) WBN EEB 8007 to document a significant condition adverse to quality (CAQ) for Watts Bar Nuclear Plant (WBN). The CAQ was that a feedwater line rupture on either steam generator 3 or 4, concurrent with a loss of channel 1-I or 2-III vital instrument power (for units 1 and 2 respectively), would prevent the auxiliary feedwater (AFW) system from operating as required. The corrective action for NCR WBN EEB 8007 was to provide a control power supply to the turbine-driven AFW (TDAFW) pump that is independent of the control power supplies for the motor-driven AFW (MDAFW) pumps. TVA issued engineering change notice (ECN) 2998 to implement the necessary corrective actions.

TVA has now identified in this significant condition report (SCR) WBN EEB 8524 that some of the electrical connection drawings associated with ECN 2998 were not revised as required. As a result, the required design changes for wiring to eight relays were not implemented and an independent control power supply for the AFW pumps was not provided.

TVA has determined that the subject deficiency was the result of a design error due to a coordination breakdown between responsible design engineers. Proper intersection coordination of ECN 2998 did not occur. As a result, the necessary schematic drawings were revised; however, some of the connection drawings associated with schematic drawing 45N600-57-22 were not revised.

### Safety Implications

The failure to provide a control power supply to the TDAFW pump which is independent of the control power supply to the MDAFW pumps could result in a complete loss of feedwater to the affected unit under the described accident condition. This could adversely affect the safe operation of the plant.

### Corrective Action

TVA has issued ECNs 5816 and 5817, for units 1 and 2 respectively, to revise the affected connection diagrams to provide a control power supply to the TDAFW pump which is independent of the control power supply to the MDAFW pump.

TVA considers this deficiency to be an isolated occurrence. A review of the other schematic drawings affected by ECN 2988 has shown that all other associated connection drawings were revised as required. As such, no specific action to prevent recurrence is required.

All necessary design work to correct this deficiency is complete per ECNs 5816 and 5817. All necessary construction work will be completed by August 16, 1985.