

TENNESSEE VALLEY AUTHORITY

5N 157B Lookout Place

April 29, 1986

WBRD-50-390/86-42
WBRD-50-391/86-41

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 UNITS 1 AND 2 - POTENTIAL MALFUNCTION OF REACTOR
PROTECTION SYSTEM PERMISSIVE P-10 FUNCTION - WBRD-50-390/86-42,
WBRD-50-391/86-41 - INTERIM REPORT

The subject deficiency was initially reported to NRC-Region II Inspector
Bob Carroll on March 31, 1986 in accordance with 10 CFR 50.55(e) as SCRs WBN
NEB 8613 and WBN NEB 8614, for units 1 and 2, respectively. Enclosed is our
interim report. We expect to submit our next report on or about July 31,
1986. We consider 10 CFR Part 21 applicable to this deficiency.

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

Very truly yours,

TENNESSEE VALLEY AUTHORITY


R. L. Gridley, Director
Nuclear Safety and 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)
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ENCLOSURE

**WATTS BAR NUCLEAR PLANT UNITS 1 AND 2
POTENTIAL MALFUNCTION OF REACTOR PROTECTION SYSTEM
PERMISSIVE P-10 FUNCTION
WBRD-50-390/86-42, WBRD-50-391/86-41
SCR WBN NEB 8613 AND SCR WBN NEB 8614
- - 10 CFR 50.55(e)
INTERIM REPORT**

Description of Deficiency

Westinghouse Electric Corporation has notified TVA of a potential malfunction of the reactor protection system (RPS) P-10 permissive function which could result in a failure of the Watts Bar Nuclear Plant (WBN) RPS to provide adequate protection at low reactor power. Westinghouse notified the NRC of this item on February 26, 1986, in their letter No. NS-NRC-86-3108. The affected P-10 function automatically enables the "low power" reactor trips (power range neutron flux trip - low set point and intermediate range high neutron flux trip) and restores power to the neutron flux detectors when reactor power level falls below the P-10 set point (10 percent power) in 3 of the 4 power range neutron flux channels. In order to meet single failure criteria, all four channels must be operable to ensure that the above-mentioned safety functions are enabled. However, since the technical specifications allow a single power range neutron flux channel to be taken out of service with power removed from its associated P-10 bistable, and since the P-10 bistables must energize to actuate the low power protection logic, a single failure in one channel will disable the low power safety functions mentioned above if a channel is taken out of service.

The RPS at WBN was supplied to TVA by Westinghouse under the nuclear steam supply system (NSSS) contract No. 71C62-54114-1. The subject deficiency is applicable to all plants with Westinghouse-designed reactor protection systems.

Safety Implications

As identified by Westinghouse, the subject condition could result in a plant condition which is outside of the design bases of the plant as analyzed in the WBN FSAR Chapter 15. Thus, the condition potentially could adversely affect the safety of operations of the plant.

Interim Progress

The NRC-NRR raised this issue in 1984 during its review of draft technical specifications for WBN (see E. Adensam's letter to H. G. Parris dated August 22, 1984). In response, TVA proposed necessary changes to the technical specifications. The proposed changes, transmitted in J. A. Domer's letter to E. Adensam dated January 3, 1985, require all four channels to be

operable, and an action statement has been proposed to require inoperable channels to be returned to operable status immediately. These proposed changes constitute TVA's position for the necessary corrective action to be taken for this deficiency.

TVA will provide a final report to NRC for this item upon completion of Westinghouse's determination of root cause and action required to prevent recurrence.

Our next report on this item will be submitted to NRC on or about July 31, 1986.