

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

400 Chestnut Street Tower II

November 24, 1981

NRC REGION II
ATLANTA, GEORGIA

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WBRD-50-390/81-13
WBRD-50-391/81-12

Mr. James P. O'Reilly, Director
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Region II - Suite 3100
101 Marietta Street
Atlanta, Georgia 30303



Dear Mr. O'Reilly:

WATTS BAR NUCLEAR PLANT UNITS 1 AND 2 - FAILURE OF THE GENERATOR SYSTEM TO
SUPPLY ADEQUATE VOLTAGE TO THE SAFETY-RELATED BOARDS - WBRD-50-390/81-13,
WBRD-50-391/81-12 - FIFTH INTERIM REPORT

The subject deficiency was initially reported to NRC-OIE Inspector
M. Thomas on January 5, 1981 in accordance with 10 CFR 50.55(e) as
NCR WBN EEB 8009. Interim reports were submitted on February 4,
April 13, July 7, and October 19, 1981. Enclosed is our fifth interim
report. We expect to submit our next report by April 7, 1982.

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

Very truly yours,

TENNESSEE VALLEY AUTHORITY

A handwritten signature in cursive script that reads "L. M. Mills".

L. M. Mills, Manager
Nuclear Regulation and Safety

Enclosure

cc: Mr. Victor Stello, Director (Enclosure)
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Washington, DC 20555

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ENCLOSURE

WATTS BAR NUCLEAR PLANT UNITS 1 AND 2
FAILURE OF THE GENERATOR SYSTEM TO SUPPLY ADEQUATE
VOLTAGE TO THE SAFETY-RELATED BOARDS
WBRD-50-390/81-13, WBRD-50-391/81-12
10 CFR 50.55(e)
FIFTH INTERIM REPORT

Description of Deficiency

When a reactor is tripped automatically for reasons other than an electrical fault or generator bearing failure, the main generator is not tripped for 30 seconds. During this time, the turbine stop valves are closed, and the generator is driven as a synchronous motor. The fast transfer of the safety boards to the preferred offsite supply is also delayed for 30 seconds. The safety related loads required to mitigate an accident are required to start during this delay period. If a failure in the generator system prevents it from maintaining adequate voltage (6560V) at the safety related boards during this delay period, a two train failure has occurred and the safety system response time required for reactor safety cannot be met.

Interim Progress

TVA is performing the design effort necessary to force the safety-related 6900-volt shutdown boards to fast transfer to the new common station service transformers (see Watts Bar nonconformance report WBN EEB 8006 Interim Report No. 2) for every reactor trip. This action will eliminate the 30-second delayed transfer of the safety-related 6900-volt shutdown boards to the preferred offsite power supply. The results of this design effort will be provided in subsequent reports.