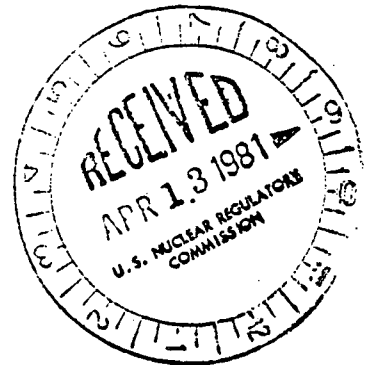


400 Chestnut Street Tower II

April 3, 1981



SQRD-50-328/81-13
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:

SEQUOYAH NUCLEAR PLANT UNIT 2 AND WATTS BAR NUCLEAR PLANT UNITS 1 AND 2 -
FAILURE OF THE GENERATOR SYSTEM TO SUPPLY ADEQUATE VOLTAGE TO THE
SAFETY-RELATED BOARDS - SQRD-50-328/81-13, WBRD-50-390/81-13,
WBRD-5-391/81-12 - SECOND 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's
SQN EEB 8054 and WBN EEB 8009. An interim report was submitted on
February 4, 1981. Enclosed is our second interim report. We expect to
submit our next report by July 1, 1981.

If you have any questions, please get in touch with D. L. Lambert at FTS
857-2581.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

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

SEQUOYAH NUCLEAR PLANT UNIT 2 AND WATTS BAR NUCLEAR PLANT UNITS 1 AND 2
SQRD-50-328/81-13, WBRD-50-390/81-13, WBRD-50-391-81-12
FAILURE OF THE GENERATOR SYSTEM TO SUPPLY
ADEQUATE VOLTAGE TO THE SAFETY-RELATED BOARDS
10 CFR 50.55(e)
SECOND 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 transfer of the safety boards to the preferred offsite supply is also delayed for 30 seconds. If the generator voltage regulator system failed to operate within its specified range during this delay period, inadequate voltage could be supplied to the 6900-volt shutdown boards following the unit trip. If this occurred, both trains of essential safety-related equipment supplied by the 6900-volt shutdown boards would be unable to meet the required response times stated in the safety analysis report.

Interim Progress

TVA is continuing to perform an examination to reanalyze the design basis for the delay in tripping the generator after a turbine trip.

In the interim, TVA believes that the present design provides adequate protection due to the low probability of such an event (described above) occurring. Therefore, operation of unit 2 in the interim, until final corrective measures are identified and implemented, is justified. A description of the design is provided below:

- (a) The generator exciter is constructed with redundant systems, which should give it a very low probability of failure, especially so during a short time interval.
- (b) A failure of the generator exciter that produces a sufficiently overexcited condition will cause a generator trip within two seconds through operation of a volts/hertz protective relay.
- (c) A failure of the generator exciter that produces a sufficiently underexcited condition will cause a generator trip within 20 cycles through operation of a generator backup relay.