TENNESSEE VALLEY AUTHORITY
CHATTANOOGA, TENNESSEE 37401
400 Chestnut Street Tower II

USNRC REGION II
ATLANTA, GEORGIA

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August 29, 1983

WBRD-50-390/83-47

U.S. Nuclear Regulatory Commission
Region II
Attn: Mr. James P. O'Reilly, Regional Administrator
101 Marietta Street, NW, Suite 2900
Atlanta, Georgia 30303

Dear Mr. O'Reilly:

WATTS BAR NUCLEAR PLANT UNIT 1 - TARGET ROCK PORV OPENING AND CLOSING TIMES - WBRD-50-390/83-47 - FIRST INTERIM REPORT

The subject deficiency was initially reported to NRC-OIE Inspector P. E. Fredrickson on July 28, 1983 in accordance with 10 CFR 50.55(e) as NCR WBN NEB 8320. Enclosed is our first interim report. We expect to submit our next report on or about December 7, 1983.

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

Very truly yours,

TENNESSEE VALLEY AUTHORITY

L. M. Mills

L. M. Mills, Manager
Nuclear Licensing

Enclosure
cc (Enclosure):
Mr. Richard C. DeYoung, Director
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Records Center
Institute of Nuclear Power Operations
1100 Circle 75 Parkway, Suite 1500
Atlanta, Georgia 30339

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ENCLOSURE

WATTS BAR NUCLEAR PLANT UNIT 1
TARGET ROCK PORV OPENING AND CLOSING TIMES
NCR WBN NEB 8120
WBRD-50-390/83-47
10 CFR 50.55(e)
FIRST INTERIM REPORT

Description of Deficiency

During hot functional testing at Watts Bar Nuclear Plant (WBN) unit 1, the pressurizer power-operated relief valves (PORV), Target Rock valves model 82UU-001, were tested at 400 lb/in^{2}g, 1700 lb/in^{2}g, 1900 lb/in^{2}g, and 2235 lb/in^{2}g. These tests showed that the valve opening and closing delay times (i.e., from receipt of signal to start of main disc travel) were longer than expected and that the main disc travel time was shorter than expected. The demonstrated delay times (which were up to 0.45 seconds) exceed the 0.2 second delay time used to calculate the PORV set points for the cold overpressure mitigation system (COMS). The demonstrated main disc stroke time of 10 milliseconds is faster than the 60 milliseconds value used to calculate the thermal-hydraulic loads for input into the piping support design.

TVA plans to install similar Target Rock valves as PORVs at WBN unit 2, Sequoyah, and Bellefonte, and believes that the same type of timing discrepancy could exist for these other valves. However, Bellefonte would not use the valves for COMS purposes. The determination of significance for reportability for these plants will be made in accordance with the established procedures.

Interim Progress

The thermal-hydraulic loads and piping supports will be reanalyzed using the 10 millisecond test value to determine the effects of the faster valve operating time. Because the function of the relief valves is to prevent any overpressurization in the primary system, this work will not be required to be completed until heat-up before initial criticality. Before this heat-up, the system will not be pressurized to any extent which would require overpressurization relief mitigation.