

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

400 Chestnut Street Tower II

August 5, 1980

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 AND WATTS BAR NUCLEAR PLANTS - CONTROL ROD DROP EVENTS - NCR NEB
79-6 - FINAL REPORT

The subject deficiency was initially reported to NRC-OIE Inspector F. S. Cantrell on November 19, 1979, in accordance with 10 CFR 50.55(e). Interim reports were submitted on December 17, 1979, March 26, 1980, and June 13, 1980. Enclosed is our final report.

If you have any questions concerning this matter, 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, Jr., Director (Enclosure) ✓
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Washington, DC 20555

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SEQUOYAH NUCLEAR PLANT UNITS 1 AND 2
WATTS BAR NUCLEAR PLANT UNITS 1 AND 2
CONTROL ROD DROP EVENTS YIELD LESS CONSERVATIVE
DNBR'S THAN STATED IN FSAR
NCR'S NEB 79-6 AND NEB 79-7
10 CFR 50.55(e)
FINAL REPORT

Description

This condition was discovered by Westinghouse during a generic review of the dropped rod accident analysis methodology and was reported by Westinghouse to NRC-OIE (T. M. Anderson's letter to V. Stello dated November 15, 1979).

The potential problems, as identified by Westinghouse, which comprise this deficiency are (1) plant response to an assumed malfunction in the rod controller circuits, (2) error allowances for the positive and negative high flux rate trip protection systems, and (3) power distribution and reactivity insertion profiles for dropped rod sequences used to define the negative rate trip setpoints. The Westinghouse review has revealed that these problems affected the dropped rod accident analyses in the nonconservative direction.

Safety Implications

Had this condition gone uncorrected, a control rod drop event could have led to some power overshoot and lower DNB ratios than reported in the FSAR. As a worst case, this could have caused localized boiling and fuel damage. Therefore, this condition could have reduced the safety of the plant.

Corrective Action

TVA will revise the operating procedures as instructed by Westinghouse. The only change in procedures that is needed is when the reactor is operated in the automatic mode at power levels greater than 90 percent. The procedure change requires that bank D be withdrawn greater than or equal to 215 steps. This change is sufficient to prevent a power overshoot due to a rod drop event while operating in the automatic mode. This procedural change will be made before ascension to power levels greater than 90 percent.