

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

400 Chestnut Street Tower II

February 4, 1981

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 AND SEQUOYAH NUCLEAR PLANT UNIT 2 -  
AUTOMATIC FIXED WATER SPRAY SYSTEM IN REACTOR BUILDING ANNULUS -  
NCR WBN SWP 8010 - REVISED FINAL REPORT

The subject deficiency was initially reported to NRC-OIE Inspector  
M. Thomas on October 27, 1980, in accordance with 10 CFR 50.55(e).  
An interim report was submitted on November 26, 1980, and our final  
report was provided on January 9, 1981.

On February 10, 1981, F. S. Cantrell of NRC-OIE Region II requested  
additional information concerning the corrective action proposed in the  
final report. The enclosed revised final report addresses this area.

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  
WATTS BAR NUCLEAR PLANT UNITS 1 AND 2  
SEQUOYAH NUCLEAR PLANT UNIT 2  
AUTOMATIC FIXED WATER SPRAY SYSTEM IN REACTOR BUILDING ANNULUS  
NCR WBN SWP 8010  
10 CFR 50.55(e)  
REVISED FINAL REPORT

Description of Deficiency

Electrical cable interdivisional (train A and B) interaction areas in the reactor building annulus of units 1 and 2 are not covered by the automatic fixed water spray system. This situation is not in accordance with the Watts Bar Nuclear Plant supplemental fire protection design criteria and supplemental fire protection recommendations.

Apparently, there was a loss of design continuity between electrical and mechanical designers caused by a failure to properly document interactions on permanent drawings. The deficiency was discovered by field personnel.

Safety Implications

Had the divisional interaction areas in the reactor building annulus remained uncovered by the automatic fixed water spray system, there would have been an increased probability that a single fire could interrupt train A and train B sources of power simultaneously. The lack of coverage in the annulus would have effectively removed redundancy of power sources for safety systems inside containment which would be a degradation in plant safety.

Corrective Action

TVA has reviewed the coverage of train A-train B interaction areas. Fire protection drawings have been developed and issued which properly identify all interaction areas in order to provide adequate water spray coverage.

In order to properly document these fire protection drawings, an engineering change notice (ECN 2685) has been issued. TVA is now in the process of modifying the fire protection system at Watts Bar in order to encompass the additional interaction areas that were identified. The modification will include additional piping and sprinklers where necessary to provide coverage for interaction areas. These modifications will be complete by August 1, 1981, for unit 1 and May 1, 1982, for unit 2.

All TVA design projects have been requested to review their plants to ensure that a similar problem does not exist.

The design projects are each at an alternate stage of completion of the design and construction of fire protection systems. Reviews of each CP plant cannot be considered complete until the actual design of the fire protection system is complete.

If in the process of review of the fire protection system design, TVA should discover interdivisional interaction areas that are not properly covered by that system; a report of nonconformance will be issued, and the item will be documented in that manner.

TVA's designers of Sequoyah Nuclear Plant (unit 1 with OL) have completed the review of the fire protection system. The purpose of the review was to locate interdivisional interaction areas. A single area of train A - train B interaction that was not covered by the fire protection system was discovered. NCR SQNSWP8018 was written and determined to be nonsignificant.

In NCR SQNSWP8018, the one insufficiently covered divisional interaction in the Reactor Building annulus (which is identified on TVA drawing SK-2071) involves the "A" train power to the solenoid for FCV-30-16 and the "B" train power to the solenoid for FCV-30-17. Both are "fail close" containment isolation valves for the purge air system (lower compartment). Operation of these valves is not required by shutdown fire logic to achieve or maintain a safe shutdown, as detailed in the Sequoyah supplemental fire protection design criteria.