

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

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JAN 26 1987

WBRD-50-390/86-52
WBRD-50-391/86-48

10 CFR 50.55(e)

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Office of Nuclear Reactor Regulation
Washington, D.C. 20555

Attention: Dr. J. Nelson Grace, Regional Administrator

WATTS BAR NUCLEAR PLANT (WBN) UNITS 1 AND 2 - CATEGORY I/I(L) PIPING
PENETRATES NONSEISMIC WALLS - WBRD 390/86-52, WBRD-50-391/86-48 - REVISED
FINAL REPORT

The subject deficiency was initially reported to NRC-Region II Inspector Gordon Hunegs on May 7, 1986 in accordance with 10 CFR 50.55(e) as SCR WBN MEB 8639. Enclosed is our revised final report. The revised final report is being provided to more clearly define the actions to prevent recurrence of this deficiency.

We submitted our final report to NRC on October 6, 1986. After submittal, however, it was identified that part of the corrective actions identified as complete actually were not. The memorandum which was to have been issued to all designers had not been issued. This was discussed with the WBN Resident Inspectors on November 28, 1986, and with Steve Elrod on January 6, 1987. The apparent cause for this erroneous statement arose from the fact that the report preparers had submitted the memorandum for signature and assumed that by the time the report was issued to NRC, the memorandum would have been issued. The memorandum was delayed because of the decision to improve the corrective actions to prevent recurrence and was issued January 8, 1987.

Upon discovery of this mistake, TVA management took immediate steps to prevent future similar errors. The process for submittal preparation now requires that documentation indicating action completion is to be reviewed by Site Licensing for verification before providing the submittal to the Director of Nuclear Safety and Licensing for signature.

If there are any questions, please get in touch with R. D. Schulz at (615) 365-8527.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

J. A. Domes
R. Gridley, Director
Nuclear Safety and Licensing

Enclosure
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cc (Enclosure):

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ENCLOSURE
WATTS BAR NUCLEAR PLANT UNITS 1 & 2
CATEGORY I/I(L) PIPING PENETRATES NONSEISMIC WALLS
LOCATED IN THE CONTROL BUILDING
WBRD-50-390/86-52, WBRD-50-391/86-48
SCR WBN MEB 8639
10 CFR 50.55(e)
REVISED FINAL REPORT

DESCRIPTION OF DEFICIENCY

Four seismic category I chilled-water lines penetrate both the east and west stairway walls in the Control Building on elevation 692.0. These lines are installed through a nonseismic plaster wall. This condition was discovered during the preparation of engineering change notice (ECN) 6088, which was issued to add split sleeves for these lines. However, it was discovered that the wall was constructed of nonseismic plaster and would not support the weight of the sleeves.

As a result of the above deficiency, an interface review was performed to determine if any Category I or I(L) equipment was located in the vicinity of or penetrated other nonseismic plaster walls inside Category I structures. The only areas found where nonseismic walls or ceilings in the Control Building could endanger Category I or I(L) piping or ductwork were the areas above all of the doors in corridor 692.0 C-11. No other Category I or I(L) equipment was identified as being affected by nonseismic walls, and no nonseismic walls were found in the other Category I structures at Watts Bar Nuclear Plant (WBN).

The apparent cause of this deficiency is failure by the designers to consider all of the requirements of the WBN Seismic Design Criteria and failure to require documentation of seismic analysis calculations for plaster panels.

SAFETY IMPLICATIONS

During a design basis seismic event, the Category I and I(L) piping and ducts could rupture or collapse as a result of the failure of this wall, rendering the safety-related equipment inoperable. Also, the failure of the chilled water lines or ducts could adversely affect the heating, ventilating, and air-conditioning (HVAC) system, which could cause the temperature inside the Control Building to reach unacceptable levels. As such, this condition could adversely affect the safe operations of the plant.

CORRECTIVE ACTION

The nonseismic walls above the corridor and stairway doors on elevation 692.0 in the Control Building will be replaced with seismically qualified concrete block panels under ECN 6380 before fuel load.

In order to prevent recurrence, a memorandum was issued on January 8, 1987 to call attention and remind all designers that (a) the provisions of the WBN Design Criteria must be met so that Category I and I(L) piping, ductwork, equipment, and other safety systems will not be endangered by nonseismic construction, and (b) seismic analysis calculations supporting output documents must be prepared, approved, and documented in accordance with Nuclear Engineering Procedure (NEP) 3.1, "Calculations."

Additionally, WBN Engineering Project (WBEP), Engineering Procedure (EP) 43.24, and the appropriate design criteria will be revised, and training will be provided to all applicable designers in accordance with NEP-1.2, "Training." Also, drawings 47W200-100 through 47W200-108 will be revised. These revisions will provide improved guidelines and clarification to designers to ensure seismic design requirements are met. Upon issuance of these guidelines, the interface review (reference "Description of Deficiency" above) will be updated to ensure that no Category I/I(L) equipment could be affected by nonseismic walls. All corrective actions will be completed by unit 1 fuel load.