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TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

5N 157B Lookout Place

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

U.S. Nuclear Regulatory Commission
Region II
Attention: Dr. J. Nelson Grace, Regional Administrator
101 Marietta Street, NW, Suite 2900
Atlanta, Georgia 30323

Dear Dr. Grace:

WATTS BAR NUCLEAR PLANT UNITS 1 AND 2 - CATEGORY I/I(L) PIPING PENETRATES NONSEISMIC WALLS - WBRD-50-390/86-52, WBRD-50-391/86-48 - 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. Our interim report was submitted on June 6, 1986. Enclosed is our final report.

If there are any questions, please get in touch with J. A. McDonald at (615) 365-8527.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

R. Gridley

R. Gridley, Director
Nuclear Safety and Licensing

Enclosure
cc (Enclosure):
Mr. James Taylor, 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
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Mr. G. G. Zech
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ENCLOSURE

WATTS BAR NUCLEAR PLANT UNITS 1 AND 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)
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.

The apparent cause of this deficiency is failure by the designers to consider all of the requirements of the Watts Bar 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 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 Engineering Change Notice (ECN) 6380 before fuel load.

In order to prevent recurrence, a memorandum has been issued to ensure that all designers are aware 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 must 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." To ensure that seismic Category I or I(L) equipment will not be endangered by the other identified nonseismic walls and ceilings in the Control Building, notes have been added to TVA's drawing series 46W402 and 46W405 which state that plaster and gypsum board walls and ceilings are not seismically qualified.

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