



Tennessee Valley Authority, Post Office Box 2000, Spring City, Tennessee 37381

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NOV 21 1991

WBRD-50-390/91-38
WBRD-50-391/91-38

10 CFR 50.55(e)

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555

Gentlemen:

In the Matter of the Application of)
Tennessee Valley Authority)

Docket Nos. 50-390
50-391

WATTS BAR NUCLEAR PLANT (WBN) UNITS 1 AND 2 - LACK OF DOCUMENTATION FOR FIRE
BARRIER MATERIAL IN SEISMIC EXPANSION JOINTS - WBRD-50-390/91-38, AND
WBRD-50-391/91-38 - INTERIM REPORT

The subject deficiency was initially reported to NRC Region II
on October 22, 1991, in accordance with 10 CFR 50.55(e) as Significant
Corrective Action Report WBSA910271. Enclosed is TVA's Interim Report. TVA
expects to provide a final report by May 1992.

If there are any questions, please telephone P. L. Pace at (615) 365-1824.

Sincerely,

John H. Garrity

Enclosure

cc: See page 2

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U.S. Nuclear Regulatory Commission

NOV 21 1991

cc (Enclosure):

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ENCLOSURE

WATTS BAR NUCLEAR PLANT (WBN)
LACK OF DOCUMENTATION FOR FIRE BARRIER
SCAR WBSA910271
WBRD 50-390, 391/91-38
10 CFR 50.55(e)
INTERIM REPORT

DESCRIPTION OF DEFICIENCY

The expansion joint between the Auxiliary Building and the Shield Building at Elevations 713.0, 729.0, 737.0, and 757.0 contains a material for which specific documentation supporting the fire resistive rating to an accepted UL or Factory Mutual standard (flame spread less than 25 feet) is not available. These seals have been in place since initial design and construction and were not considered fire barriers at that time. Without this documentation, the configuration is not a credited fire barrier. Some rooms contain 10 CFR 50, Appendix R equipment and thus do not meet the Appendix R criteria.

Additionally, these Auxiliary Building/Shield Building joints have been found to be a potential leakage path in the event of a High Energy Line Break (HELB) or Moderate Energy Line Break (MELB) within certain spaces that could cause floor flooding or wetting of the essential equipment within the subject spaces below.

This issue was originally identified at Sequoyah Nuclear Plant (SQN) and was reported to NRC as Licensee Event Report 50-327/91010.

SAFETY SIGNIFICANCE

This expansion joint must comply with the requirements of 10 CFR 50, Appendix R. Specifically, the noncompliance involved the lack of separation of cables and equipment by a fire barrier having a three-hour fire rating. In this instance, the noncompliance resulted from the use of indeterminate material in the expansion joint between the Auxiliary and Shield Buildings. This joint is considered to be a fire boundary as specified in the Appendix R Compartmentation Drawings (47W420-series). Because of this indeterminate material, the wall to floor/ceiling joints cannot be verified to constitute a three-hour rated fire barrier. Failure of this seal to provide the required fire barrier could result in the inability to mitigate a fire in accordance with Appendix R and the subsequent inability to safely shutdown the plant.

The expansion joint is also required to provide a barrier for floor-to-floor and room-to-room flooding due to postulated pipe break events. The flooding associated with a pipe break should not preclude the capability to safely shut down the plant. This analysis has not yet been completed.

INTERIM PROGRESS

A preliminary test of the fire resistance of the expansion joint material has provided reasonable assurance that the material is certifiable as a fire barrier. Further qualification tests are being pursued to definitively establish a basis for acceptability of this configuration as a fire barrier.

ENCLOSURE

WATTS BAR NUCLEAR PLANT (WBN)
FIRE BARRIER LACK OF DOCUMENTATION
SCAR WBSA910271
WBRD 50-390, 391/91-38
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INTERIM REPORT

INTERIM PROGRESS (continued)

Based on the SQN analyses, TVA is considering the following corrective actions:

1. TVA will perform an evaluation of the existing expansion joint design and material to determine the disposition for the fire and flooding barrier based on the SQN test results. Corrective actions will be determined, as necessary, at that time.
2. TVA will revise Design Criteria WB-DC-20-8, "Auxiliary-Control Building Structures," to identify requirements for expansion joints between reactor shield/auxiliary buildings.
3. TVA will perform a walkdown of the applicable seismic expansion joint wall seals to determine their as-built condition. The walkdown data will be evaluated and design changes initiated, as required, for repair modifications.
4. Surveillance Instructions will be revised to include expansion joint inspection requirements.

TVA will provide a complete report to finalize the corrective actions to address this issue by May 1992.