TENNESSEE VALLEY AUTHORITY
CHATTANOOGA, TENNESSEE 37401
400 Chestnut Street Tower II

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February 13, 1984

WBRD-50-391/83-42

U.S. Nuclear Regulatory Commission
Region II
Attn: Mr. James P. O'Reilly, Regional Administrator
101 Marietta Street, NW, Suite 2900
Atlanta, Georgia 30303

Dear Mr. O'Reilly:

WATTS BAR NUCLEAR PLANT UNIT 2 - HPFP PIPE NOT SEISMICALLY SUPPORTED OVER SIS PUMP - WBRD-50-391/83-42 - REVISED FINAL REPORT

The subject deficiency was initially reported to NRC-OIE Inspector Linda Watson on July 11, 1983 in accordance with 10 CFR 50.55(e) as NCR WBN WBP 8308. Interim reports were submitted on August 8 and September 14, 1983. A final report was submitted on November 17, 1983. Enclosed is our revised final report.

If you have any questions, please get in touch with R. H. Shell at FTS 858-2474.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

L. M. Mills, Manager
Nuclear Licensing

cc (Enclosure):
Mr. Richard C. DeYoung, 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
Atlanta, Georgia 30339

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ENCLOSURE

WATTS BAR NUCLEAR PLANT UNIT 2
HPFP PIPE NOT SEISMICALLY SUPPORTED OVER SIS PUMP
NCR WBN WBP 8308
WBRD-50-391/83-42
10 CFR 50.55(e)
REVISED FINAL REPORT

Description of Deficiency

TVA's Division of Construction (CONST) has installed 2-inch and smaller diameter sprinkler piping for the high pressure fire protection (HPFP) system above the safety injection system (SIS) pump 2A-A between column lines A9 and A11; and V and U on elevation 692 in the auxiliary building for position retention only. TVA drawing 47W491-18 R4 requires that this piping be supported for both pressure boundary integrity and position retention. Although, the sprinkler pipe in this area is normally dry, during a seismic event the deluge valve which is not seismically qualified, could fail open and fill the pipe with water. Thus, a break in the sprinkler pipe above the SIS pump could result in spraying water on the SIS pump.

This deficiency was caused by the fact that areas designated for piping to be supported for both position retention and pressure boundary integrity (seismic areas) were not shown on every sheet in the same drawing series which showed various piping details of the same floor plan. At the time of issue, it was considered sufficient to label the seismic requirements on only one sheet. This labeling was done by the use of heavy lines on the drawing to indicate the seismic boundaries of the piping. CONST failed to review all drawings in the 47W491 series before supporting the 2-inch diameter and smaller size fire suppression piping in the SIS pump room. Therefore, the piping which should have been supported for both position retention and pressure boundary integrity was incorrectly supported for dead weight only.

Safety Implications

Since the pump motor is not designed to remain operable under a spray of water, the availability of the SIS pump could not be guaranteed. Therefore,in the event of an accident, this condition could adversely affect the safe operation of the plant.

Corrective Action

1. CONST will seismically support piping for pressure boundary integrity and position retention in accordance with TVA drawing 47W491-18 R4 in the SIS pump room 2A-A and ensure that piping in the other SIS pump rooms is also supported in accordance with the above drawing. This will be accomplished by May 17, 1984.

2. CONST has reviewed the 47W491 series piping drawings to determine if the correct types of typical supports were installed. Other drawing series were reviewed to determine if this condition was generic. It was found that this condition recurred in the unit 2 SIS pump room as well as the units 1 and 2 auxiliary feedwater pump rooms.

3. TVA's Division of Engineering Design (EN DES) has determined that the concept of using heavy lines for boundaries to designate seismic support requirements has led to much confusion on the part of CONST personnel. To eliminate this confusion, the seismic boundaries will be removed from the 47W491 drawings under ECN 4462. In lieu of the use of heavy lines, a walkdown inspection was performed in conjunction with NCR WBN SWP 8265 (WBRD-50-390, 391/83-05). For this inspection, all IEEE Class 1E equipment such as pump motors, switches, and junction boxes were examined, and sealing or shielding of electrical components against water spray or support of noncritical (noncategory I-L) piping for pressure boundary integrity in the vicinity of the equipment was provided.

In order to prevent recurrence, EN DES has issued additional sheets to the 47W200 series equipment drawings under ECN 4282 as part of corrective action for NCR WBN SWP 8265, beginning with sheet 100, to identify all areas of the Category I structures containing noncritical piping which is not supported for pressure boundary integrity. These drawings indicate all class 1E equipment and components located in these areas and notes what action is required for protection against water spray. EN DES will issue Watts Bar engineering procedure 42.24 which will provide guidance for proper use of these drawings to project personnel.

EN DES has also revised all piping drawings to indicate seismic analysis problem boundaries on all systems as corrective action to NCR WBN QAB 8204 under ECN 3721.

Nonconformance Report NCR WBN SWP 8265, (which was reported separately) was written to include and cover generic aspects of all piping systems not supported for pressure boundary integrity in areas adjacent to safety-related equipment.

The specific concern of seismically supporting HPFP piping (identified in NCRs WBN WBP 8308 and WBN WBP 8309, WBRD-50-390, 391/83-38) has been determined not to apply to Bellefonte. HPFP pressure boundary retention concerns for Sequoyah are being tracked by a NCR. These items are also being tracked for the deferred projects and investigation into them will occur upon restart of design and construction efforts.