



Tennessee Valley Authority, 1101 Market Street, Chattanooga, Tennessee 37402

APR 29 1991

WBRD-50-390/91-16  
WBRD-50-391/91-16

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 - CONTAINMENT PRESSURE  
TRANSMITTER ISOLATION BELLOWS QUALIFICATION - WBRD-50-390/91-16,  
WBRD-50-391/91-16 - INTERIM REPORT

The subject deficiency was initially reported to NRC Region II on  
March 29, 1991, in accordance with 10 CFR 50.55(e) as Problem Evaluation  
Reports (PERs) WBPUR 910142 and WBPUR 910145. Enclosure 1 is TVA's  
interim report on this subject. TVA will submit a final report on this  
subject by July 15, 1991.

The commitment made in this report is provided in Enclosure 2.

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

Very truly yours,

TENNESSEE VALLEY AUTHORITY

E. G. Wallace, Manager  
Nuclear Licensing and  
Regulatory Affairs

Enclosures

cc: See page 2

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U.S. Nuclear Regulatory Commission

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cc (Enclosures):

Ms. S. C. Black, Deputy Director  
Project Directorate II-4  
U.S. Nuclear Regulatory Commission  
One White Flint, North  
11555 Rockville Pike  
Rockville, Maryland 20852

INPO Record Center  
1100 Circle 75 Parkway, Suite 1500  
Atlanta, Georgia 30339

NRC Resident Inspector  
Watts Bar Nuclear Plant  
P.O. Box 700  
Spring City, Tennessee 37381

Mr. P. S. Tam, Senior Project Manager  
U.S. Nuclear Regulatory Commission  
One White Flint, North  
11555 Rockville Pike  
Rockville, Maryland 20852

Mr. B. A. Wilson, Chief, Project Chief  
U.S. Nuclear Regulatory Commission  
Region II  
101 Marietta Street, NW, Suite 2900  
Atlanta, Georgia 30323

ENCLOSURE 1

WATTS BAR NUCLEAR PLANT (WBN)  
CONTAINMENT PRESSURE TRANSMITTER ISOLATION BELLOWS QUALIFICATION  
PROBLEM EVALUATION REPORTS (PERs) WBPER 910142 AND WBPER 910145  
WBRD-50-390/91-16 AND WBRD-50-391/91-16

INTERIM REPORT

DESCRIPTION OF DEFICIENCY

TVA has determined that vendor qualification testing supplied for the containment pressure transmitters does not demonstrate ensured containment integrity under post-accident conditions.

The containment pressure transmitters are required for actuation of Engineered Safety Feature Systems and for containment pressure monitoring. Standard construction of the containment pressure transmitters uses double impermeable bellows to measure the differential pressure between primary and secondary containment. The double bellows configuration satisfies the redundant barrier requirement of General Design Criterion 54, "Piping Systems Penetrating Containment." However, the existing qualification testing supplied by the vendor does not specifically demonstrate each bellows' capability to individually maintain pressure integrity when subjected to design pressure conditions. The testing did not consider failure of the inboard bellows which would cause the outboard bellows to represent the only containment isolation barrier. The associated instruments are as follows:

|        |   |
|--------|---|
| Unit 1 | Pdt-30-42,-43,-44,-45 and -30C<br>Pt-30-310 and -311      |
| Unit 2 | Pdt-30-42,-43,-44,-45,-30C and -133<br>Pt-30-310 and -311 |

SAFETY IMPLICATIONS

The containment pressure transmitters perform safety functions related to safety injection signal initiation, Phase B containment isolation signal initiation, post accident monitoring, and normal operating containment pressure monitoring. Instrument redundancy can accommodate loss of a containment pressure transmitter due to a failed inboard bellows without affecting the above safety functions. However, the additional safety function of ensuring post-accident containment integrity with a failed inboard bellows has not been established through qualification testing.

INTERIM PROGRESS

TVA is developing a corrective action plan to address containment pressure transmitter bellows qualification testing. A final report will be submitted by July 15, 1991.

ENCLOSURE 2

LIST OF COMMITMENTS

TVA is developing a corrective action plan to address containment pressure transmitter bellows qualification testing. A final report will be submitted by July 15, 1991.