TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

5N 157B Lookout Place

February 27, 1986

WBRD-50-390/86-28
WBRD-50-391/86-24

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 - INADEQUATE FLEXIBILITY OF 3/8-INCH TUBING ATTACHED TO THE STEEL CONTAINMENT VESSEL - WBRD-50-390/86-28, WBRD-50-391/86-24 - INTERIM REPORT

The subject deficiency was initially reported to NRC-OIE Inspector Bob Carroll on January 29, 1986 in accordance with 10 CFR 50.55(e) as SCR WBN CEB 8576. Enclosed is our interim report. We expect to submit our next report on or about June 20, 1986.

If there are any questions, please get in touch with R. H. Shell at FTS 858-2688.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

R. L. Gridley
Manager of 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
Atlanta, Georgia 30339

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ENCLOSURE

WATTS BAR NUCLEAR PLANT UNITS 1 AND 2
INADEQUATE FLEXIBILITY OF 3/8-INCH TUBING ATTACHED
TO THE STEEL CONTAINMENT VESSEL
WBRD-50-390/86-28, WBRD-50-391/86-24
SCR WBN CEB 8576
10 CFR 50.55(e)
INTERIM REPORT

Description of Deficiency

For 3/8-inch tubing attached to and routed through the steel containment vessel (SCV), design instructions issued in 1979 require that the first tubing support beyond the SCV penetration (inside and outside of the vessel) be located 30 to 40 inches from the penetration. This was to ensure at least 30 inches of tubing would be available to absorb SCV movements. However, as a result of questions by construction personnel regarding the correct interpretation of detail A14 on drawing 47W625-14, it was determined that the SCV penetration includes a stub piece of approximately 16 to 18 inches of 3/8-inch schedule 160 piping through which the 3/8-inch tubing is routed. Because of the rigidity of the piping, the tubing supports should have been located 30 ro 40 inches from the end of the pipe stub. However, the piping length was not considered when locating the first tubing support thereby resulting in installations which could have as little as 12 inches of tubing between the penetration and the support. Such installations are less flexible than intended. This error was caused by a misinterpretation of the design information provided in a 1979 Division of Engineering Design (currently Office of Engineering) memorandum from the chief civil engineer to the manager of the Watts Bar Nuclear Plant (WBN) engineering project.

Safety Implications

This condition of reduced lengths of unrestrained 3/8-inch tubing could result in stresses and loads to the tubing or supports which could exceed the values allowed by Design Criteria WB-DC-40-31.7 or WB-DC-40-31.9 and could cause a loss of the tubing's pressure boundary. This loss in itself could not directly affect plant safety as the only tubing identified as being affected is tubing used in the sampling and water quality system. However, a rupture outside the SCV of tubing and a simultaneous loss of its inboard containment isolation valve or a rupture on both sides of the SCV could result in a breech of the containment boundary. As such, this condition could adversely affect the safe operation of the plant.

Interim Progress

TVA is having sketches of the "as-installed" tubing prepared for both units 1 and 2. The information provided by these sketches will be evaluated and existing designs will be revised and modified as necessary to ensure compliance with the applicable design criteria. TVA will provide the next report on this item on or about June 20, 1986