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

USNRC REGION II
ATLANTA, GEORGIA
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January 5, 1982

WBRD-50-390/81-25

Mr. James P. O'Reilly, Director
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Region II - Suite 3100
101 Marietta Street
Atlanta, Georgia 30303

Dear Mr. O'Reilly:

WATTS BAR NUCLEAR PLANT UNIT 1 - IMPROPER WELDS ON SURFACE MOUNTED PLATES - WBRD-50-390/81-25 - FINAL REPORT

The subject deficiency was initially reported to NRC-OIE Inspector R. V. Crlenjak on March 4, 1981 in accordance with 10 CFR 50.55(e) as NCR WBN YCP 8101. Interim reports were submitted on April 3, June 11, and September 9, 1981. Enclosed is our final report.

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

Very truly yours,

TENNESSEE VALLEY AUTHORITY

L. M. Mills, Manager
Nuclear Regulation and Safety

Enclosure
cc: Mr. Richard C. DeYoung, Director (Enclosure)
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Washington, DC 20555

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ENCLOSURE
WATTS BAR NUCLEAR PLANT UNIT 1
IMPROPER WELDS ON SURFACE MOUNTED PLATES
WBRD-50-390/81-25
10 CFR 50.55(e)
FINAL REPORT

Description of Deficiency

A number of welds attaching safety-related component supports to surface mounted plates were found to be deficient in that the welds did not meet the minimum weld size described in AISC Section 1.17.5. The welds are identified in the following drawings:

47A0454-2-33	47A055-159
47A055-6	47A055-187
47A055-151	47A055-200
47A055-155	47A055-88
47A055-172	47A0450-4-36
47A055-188	47A464-2-13
47A055-189	

These drawings are for pipe and duct supports and involve the Essential Raw Cooling Water (ERCW), Spent Fuel Pool Cooling (SFPC), Component Cooling (CCS), and Heating, Ventilating, and Air Conditioning (HVAC) Systems. The cause of this deficiency was a design error.

Safety Implications

After an evaluation of the welds identified on the listed drawings, it was determined that none of the weld sizes represented a safety concern. The supports having these welds will perform their intended function.

Corrective Actions

Upon review of the weld descriptions in the listed drawings, it was determined that the weld sizes were designed to carry the appropriate loads, and all weld stresses were under code allowable stresses with the exception of a weld on drawing 47A055-151. Drawing 47A055-151 sizing calculations required a 5/16-inch fillet weld, but a 3/16-inch fillet weld was inadvertently specified by the drawing. In order to qualify the support with a 3/16-inch fillet weld, a reevaluation of actual loads was performed. A review of the drawing showed that the actual span of the support locations was less than the design span. In addition, this support was not used in the upper elevations. Based on these two facts, the design loads and seismic accelerations were reduced for the support calculations, and the 3/16-inch fillet weld was determined to be adequate for the support.

To prevent recurrence of this type of nonconformance, the Welding Task Force has had Construction Specification G29-C revised to add EN DES Process Specification O.C.1.1(a), "Specifications for Welding of Structures Fabricated in Accordance with AISC Requirements for Building." The specification allows TVA's Division of Engineering Design drawings to specifically identify features which may be excluded from AISC requirements. Computations made for work already performed show all welds are structurally adequate as designed and installed. Also, to prevent recurrence of this nonconformance, a memo was issued to designers which instructed them to meet the requirements of AISC Section 1.17.5 (specifies the minimum welds to be used).