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TENNESSEE VALLEY AUTHORITY
CHATTANOOGA, TENNESSEE 37401

500C Chestnut Street Tower II

79 JUN 26 P 2:23 JUN 25 1979

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 2 - NRC-OIE LETTER RII:EHG 50-390/79-18, 50-391/79-14 INSPECTION REPORT - RESPONSE TO UNRESOLVED ITEM 391/79-14-01

The subject letter dated May 14, 1979, opened an unresolved item concerning welding on unit 2's containment. Enclosed is additional information requested by E. H. Girard.

If you have any questions concerning this matter, please get in touch with D. L. Lambert at FTS 854-2581.

Very truly yours,

J. E. Gilleland
Assistant Manager of Power

Enclosure
cc: Mr. John G. Davis, Acting 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 2
INSPECTION REPORT 50-390/79-18, 50-391/79-14
UNRESOLVED ITEM 391/79-14-01

Unresolved Item

The inspector examined studs welded to the metal containment above the ice condenser baskets. The studs were found to be arc stud welded. The licensee stated that the studs are being used to support air ducting for the ice condenser. The licensee identified the Code applicable to this welding as ASME Section III (Subsection NE). The applicable edition and addenda of the Code could not be identified during the inspection. However, the inspector noted that the last two editions (74 and 77) of ASME Section III have limited the use of arc stud welding to "minor attachments" and questioned whether their application on the containment could suitably be described as "minor attachments". The inspector has asked the licensee's design engineering personnel to provide the following information with regard to the arc stud welding:

a. Identify the applicable Code edition and addenda.

b. Identify loads to be supported (items and actual maximum design load values).

This item is being identified as unresolved item 391/79-14-01: Apparent deviation or noncompliance with requirements for welding to the metal containment.

Response to Item a

The code of record for the Watts Bar Containment, 1971 Edition ASME Code, Winter 1971 Addenda, Section III, Subsection NE, did not address stud arc welding, but subsection NA 1140 allowed the use of a later edition of the code. Thus, the stud arc welding to the steel containment was done under the jurisdiction of the ASME Code, 1974 Edition with Summer 1975 Addenda, Section III subsection NE (reference NE-4311-1 and NE-4435). Arc stud welding in this application is for support of minor nonpressure items. The present stud design was approved by the prime contractor (Westinghouse Corporation) and welded using an approved welding procedure. To ensure weld integrity, the first two studs were bend tested and one of every hundred from that point on were bend tested. Each stud was visually inspected.

Response to Item b

The items supported from the ice condenser containment wall studs are the wall panel mounting struts and the ice condenser air ducts. Insulation is foamed inplace between the containment vessel wall and the air ducts.

The maximum design loads on the studs including seismic loads are as follows:

	1/2 SSE (OBE)	SSE (DBE)
Radial	337.5 lbs	450.0 lbs
Tangential	337.5 lbs	450.0 lbs
Vertical	675.0 lbs	787.5 lbs

These loads are conservative, since they assume no loads are carried by the foam/containment bond. When you compare the stresses induced by these loads to the allowable stress for 5/8-inch diameter stud, they are only loaded to approximately 25% of their allowable capacity.