# TENNESSEE VALLEY AUTHORITY

CHATTANOOGA TENNESSEE 37401
SN 157B Lookout Place

January 13, 1986

WBRD-50-390/86-04
WBRD-50-391/86-02

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 - FAILURE TO CONSIDER LATERAL LOADING IN TYPICAL SUPPORT DESIGN - WBRD-50-390/86-04, WBRD-50-391/86-02 - INTERIM REPORT

The subject deficiency was initially reported to NRC-OIE Inspector Al Ignatonis on November 27, 1985 in accordance with 10 CFR 50.55(e) as SCR WBN CEB 8537. Enclosed is our interim report. We expect to submit our next report on or about March 21, 1986.

Delay in submittal of this report was discussed with Mr. Ignatonis on January 6, 1986.

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

Very truly yours,

TENNESSEE VALLEY AUTHORITY

J. W. Hufham
Manager of Licensing

Enclosure
cc: Mr. James Taylor, Director (Enclosure)
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Records Center (Enclosure)
Institute of Nuclear Power Operations
1100 Circle 75 Parkway, Suite 1500
Atlanta, Georgia 30339

ENCLOSURE

WATTS BAR NUCLEAR PLANT UNITS 1 AND 2
FAILURE TO CONSIDER LATERAL LOADING
IN TYPICAL SUPPORT DESIGN
WBRD-50-390/86-04, WBRD-50-391/86-02
SCR WBN CEB 8537
10 CFR 50.55(e)
INTERIM REPORT

Description of Deficiency

Supports on typical drawing series 47A058 and 47A059 are designed in such a way as to develop significant lateral loads which have not been documented in the design of the support. These additional loads could cause failure of the supports due to increased member stresses/bolt failure at the baseplate. The supports are for category I(L) piping (position retention only). There are approximately 26 support types on the 47A059 series, 13 supports on the 47A058 series out of 167, and 50 support types for each series, respectively, which restrain the pipe in the lateral direction. The cause of this deficiency is due to the misunderstanding of the criteria requirements for supports on category I(L) piping and inadequate training of the design personnel involved. Pipe support designers incorrectly assumed that rigid category I type supports used in piping requiring category I(L) position retention needed to be qualified only for deadweight seismic loads.

Safety Implications

Systems supported with the typical series mentioned perform no primary safety function. Also, supports on the drawing series in question which resist lateral loads are generally interspersed with other types of position retention only hangers in the majority of cases. If a support did pull out of the wall, there is a good possibility that the adjacent supports can carry the additional load and keep the pipe from damaging adjacent safety-related equipment which is the primary function of these types of typical supports. However, the possibility exists that the pipe may cause damage to safety related systems which could affect the safe operation of the plant.

Interim Progress

The Office of Engineering (OE) is presently performing an evaluation of 47A058 and 47A059 series of supports to ensure their adequacy to handle lateral support loads. Typical support designs not able to carry the type of loads in question will be walked down to identify actual field installations or modifications to handle the loads in question. All Watts Bar Nuclear Plant (WBN) pipe support design personnel will be trained on the design and criteria requirements related to this deficiency.

Our next report on this item will be provided to NRC on or about March 21, 1986.