

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401  
400 Chestnut Street Tower II

2 AIO: 55  
February 28, 1984

WBRD-50-390/84-06  
WBRD-50-391/84-06

U.S. Nuclear Regulatory Commission  
Region II  
Attn: Mr. James P. O'Reilly, Regional Administrator  
101 Marietta Street, NW, Suite 2900  
Atlanta, Georgia 30303

Dear Mr. O'Reilly:

WATTS BAR NUCLEAR PLANT UNITS 1 AND 2 - IMPROPER DESIGN LOADS FOR BASE PLATES  
AND ANCHOR BOLTS - WBRD-50-390/84-06, WBRD-50-391/84-06 - FIRST INTERIM REPORT

The subject deficiency was initially reported to NRC-OIE Inspector  
P. E. Fredrickson on January 31, 1984 in accordance with 10 CFR 50.55(e) as  
NCR WBN WBP 8402. Enclosed is our first interim report. We expect to submit  
our next report on or about April 16, 1984.

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*

L. M. Mills, Manager  
Nuclear Licensing

Enclosure

cc: Mr. Richard C. DeYoung, 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

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## ENCLOSURE

WATTS BAR NUCLEAR PLANT UNITS 1 AND 2  
IMPROPER DESIGN LOADS FOR BASE PLATES AND ANCHOR BOLTS  
NCR WBN WBP 8402  
WBRD-50-390/84-06, WBRD-50-391/84-06  
10 CFR 50.55(e)  
FIRST INTERIM REPORT

### Description of Deficiency

The design of the base plates and anchor bolts for supports 67-1ERCW-R337, revision 902, and 47A450-2-97, revision 4, used rigid plate theory without any consideration of the entire connection. Specifically, the configuration of the anchor bolt locations in relation to the attachment does not fulfill the requirements stipulated in Civil Design Standard DS-C1.7.1 to be classed and designed as a rigid plate; therefore, the tensile pullout load cannot be considered to be equally distributed. Due to this condition, the anchor bolts in the immediate proximity of the attachment will take a greater portion of the induced load and according to approximate hand calculations will not be within specified allowable limits.

### Interim Progress

The two supports identified in this NCR are being evaluated using flexible plate analysis. The supports will be reworked if necessary.

A random sample of 300 expansion-anchored plates has been selected to investigate the generic implications of this deficiency on all expansion-anchored pipe supports at Watts Bar Nuclear Plant. The base plates in the sample will be analyzed using flexible plate analysis unless the plate meets the requirements for use of rigid plate analysis.