

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401
400 Chestnut Street Tower II

March 28, 1983

P12: 22

WBRD-50-390/82-67
WBRD-50-391/82-64

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 - ATTACHMENT OF CONDUIT AND PIPING
SUPPORTS TO CABLE TRAY SUPPORTS - WBRD-50-390/82-67, WBRD-50-391/82-64 - /B
FINAL REPORT

The subject deficiency was initially reported to NRC-OIE Inspector
K. V. Crlenjak on June 7, 1982 in accordance with 10 CFR 50.55(e) as NCR
WBN SWP 8224. Interim reports were submitted on July 8, and November 29,
1982, and February 23, 1983. Enclosed is our final report. TVA no longer
considers the subject condition to be adverse to the safe operations of the
plant. Therefore, we will amend our records to delete this nonconformance
as a 10 CFR 50.55(e) item.

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

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ENCLOSURE

WATTS BAR NUCLEAR PLANT UNITS 1 AND 2
ATTACHMENT OF CONDUIT AND PIPING SUPPORTS TO CABLE TRAY SUPPORTS
NCR WBN SWP 8224
WBRD-50-390/82-67, WBRD-50-391/82-64
10 CFR 50.55(c)
FINAL REPORT

Description of Deficiency

TVA has approved construction variances to various typical pipe and conduit support drawings that permit attachment of conduit and piping supports to cable tray supports. In addition, site personnel have attached certain conduit and piping to cable tray supports using notes on the typical support drawings. These attachments were for relatively small loads. When evaluating these attachments, TVA evaluated the cable tray supports for structural integrity only and not for seismic movement.

It was later determined that the cable tray supports were not designed to rigid requirements and that some of the supports, especially the cantilevered type, could have significant movement during a seismic event.

The apparent cause was that the designers were not aware of the significant movement of the cable tray supports and evaluated them for structural adequacy only.

Safety Implications

TVA established a sampling program in accordance with the Sequoyah and Watts Bar Design Project special engineering procedure (SWP SEP) 82-03 in order to evaluate the attachment of divisional conduit, essential tubing, or piping to all cable tray supports at Watts Bar Nuclear Plant. The fundamental concern was that seismically-induced movements could adversely affect either the cable tray support clamps or the attached conduit, tubing, or piping.

TVA selected 59 of the worst case cable tray supports for evaluation. The worst case typically consisted of a cantilevered-type cable tray support with attachment of appropriately-classed conduit, pipe, or tube having adjacent spans with a seismic typical support at each end which had relatively no seismic design displacement.

The selected samples were compared to the cable tray support calculations to determine which samples exhibited a seismic movement greater than one-fourth inch. Cable tray supports with a movement equal to or less than one-fourth inch would not have an adverse effect on either the cables, conduit, tubing, or piping.

The evaluation of the sample data indicated that no support experienced movements in excess of one-fourth inch. No failures in a sample population of 59 indicates, with a 95 percent confidence level, that less than 5 percent of the attachments to cable tray supports have stresses that exceed the allowable stress or overload the clamp.

Consequently, TVA has determined that no condition adverse to safety exists and therefore no longer considers 10 CFR 50.55(e) to be applicable.