



Tennessee Valley Authority, Post Office Box 2000, Spring City, Tennessee 37381

OCT 31 1994

CDR-50-390/94-12
CDR-50-390/94-13

10 CFR 50.55(e)

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555

Gentlemen:

In the Matter of the Application of)
Tennessee Valley Authority)

Docket Nos. 50-390

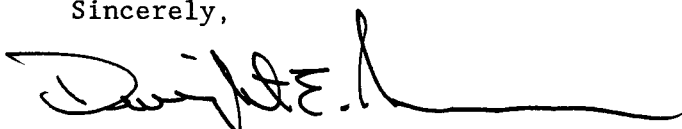
WATTS BAR NUCLEAR PLANT (WBN) - DEFICIENCIES INVOLVING RIGID CONDUIT
ATTACHMENT TO CABLE TRAY SUPPORTS - CDR 50-390/94-12 AND DEFICIENCIES
INVOLVING INADEQUATE VERTICAL CABLE SUPPORTS - CDR 50-390/94-13

The purpose of this letter is to provide reports to address the subject deficiencies in accordance with 10 CFR 50.55(e). The first subject deficiency, initially documented as Problem Evaluation Report (PER) WBPER940412 and later incorporated into Significant Corrective Action Report (SCAR) WBSCA940041, Revision 2, was initially reported to the NRC Operations Center on September 30, 1994. The second subject deficiency, documented as SCAR WBSCA940051, was initially reported to the NRC Operations Center on October 1, 1994.

Enclosure 1 to this submittal contains the report for CDR 50-390/94-12. Enclosure 2 contains the report for CDR 50-390/94-13. Enclosure 3 provides a list of commitments made in this submittal.

If you have any questions, please telephone P. L. Pace at (615) 365-1824.

Sincerely,


Dwight E. Nunn
Vice President
New Plant Completion
Watts Bar Nuclear Plant

Enclosures

cc: See page 2

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cc (Enclosures):

INPO Record Center
700 Galleria Parkway
Atlanta, Georgia 30339

NRC Resident Inspector
Watts Bar Nuclear Plant
Rt. 2, Box 700
Spring City, Tennessee 37381

Mr. P. S. Tam, Senior Project Manager
U.S. Nuclear Regulatory Commission
One White Flint North
11555 Rockville Pike
Rockville, Maryland 20852

U.S. Nuclear Regulatory Commission
Region II
101 Marietta Street, NW, Suite 2900
Atlanta, Georgia 30323

ENCLOSURE 1

WATTS BAR NUCLEAR PLANT (WBN) - UNIT 1 DEFICIENCY INVOLVING RIGID CONDUIT INSTALLATIONS TO CABLE TRAY SUPPORTS CDR 50-390/94-12 FINAL REPORT

DESCRIPTION OF DEFICIENCY

On July 25, 1994, during a documentation review activity, four conduits containing safety related cables were identified as being installed as rigid conduit rather than flexible conduit either between tray supports and adjacent structure such as a concrete wall or between adjacent tray supports. These conditions are in violation of TVA's General Specification G-40 requirements which dictate an 18 inch minimum length of flexible conduit including a ± 4 " differential movement capability (slack) for seismic and thermal movement.

SAFETY IMPLICATIONS

Examples that have been identified include conduits which carry safety-related cables in the heating, ventilation, and air conditioning (HVAC) and reactor coolant systems. If these conditions go undetected, it is possible that a conduit could break at a connection due to insufficient seismic/thermal movement capability. If this occurred, rough edges could damage the cable inside rendering it inoperable. Dependent on the requirements of the individual cables affected, this could compromise the operability of a critical safety system.

Therefore, this condition could have affected plant safety had it remained uncorrected and is being reported in accordance with 10 CFR 50.55(e).

CAUSE OF THE DEFICIENCY

Although the cause determination has not been finalized for this deficiency, it appears that the personnel involved in conduit installation and the class 1E walkdown did not understand the installation requirements. Discussions with some of these individuals, when these requirements were explained, acknowledged that they had not completely understood the requirements.

CORRECTIVE ACTIONS

The four specific conditions identified above will be corrected in the plant. TVA will provide additional training for the craft in the installation of conduits on cable tray supports.

TVA will revise the conduit installation procedure to clarify the requirements and to provide additional guidance for the installation of conduits on cable tray supports.

As part of the corrective actions associated with other conduits issues (i.e., flex length, separation, etc.), TVA is performing a walkdown of class 1E conduits. Due to the misunderstanding of the requirements described above, TVA has provided additional training for the class 1E walkdown team members regarding the installation of conduits near or on cable tray supports.

To determine the extent of condition of the described discrepancy, TVA will perform a sample of those conduits previously inspected. The sample will be based upon conduits (both class 1E and non-class 1E) known to be routed near or on cable tray supports. The results of this sample will be evaluated and appropriate actions taken to address the deficiencies found. SCAR WBSA940041 will track these actions to completion.

ENCLOSURE 2

WATTS BAR NUCLEAR PLANT (WBN) - UNIT 1 DEFICIENCIES INVOLVING VERTICAL CABLE SUPPORTS CDR 50-390/94-13 FINAL REPORT

DESCRIPTION OF DEFICIENCY

During Inspection 390/94-53, NRC inspectors identified the failure to provide vertical cable support and found improperly installed cable supports for various plant safety system cables. These conditions are contrary to the requirements of the TVA's General Specification G-38, "Installation, Modification, and Maintenance Of Insulated Cables Rated Up To 15,000 Volts" and Modification Addition Instruction, (MAI)- 3.2 "Cable Pulling For Insulated Cables Rated Up To 15,000 Volts."

SAFETY IMPLICATIONS

Cable supports are installed to prevent long-term damage to cables suspended in long vertical conduit drops. Although no immediate failure is postulated if left uncorrected, failure of the cables in the long-term is possible and thus plant safety could have been adversely affected. Therefore, this condition is being reported under 10 CFR 50.55(e).

CAUSE OF THE DEFICIENCY

Since these conditions were the subject of violation 390/94-53-01, a discussion of the causes for the vertical cable support deficiencies was provided in violation response dated October 21, 1994.

In summary, the cause of these deficiencies involved a combination of factors which include design calculation errors, procedure inadequacies, a misinterpretation of the design and installation requirements by field personnel, and personnel failing to follow procedure.

CORRECTIVE ACTIONS

As discussed above, the vertical cable support deficiencies were addressed in the response to violation 390/94-53-01. In summary, TVA has taken steps to address the identified causes. These actions include a detailed review and correction of the affected design calculation, revisions to the design and installation procedures, and additional training for personnel involved in the installation of vertical cable supports. These actions are tracked by SCAR WBSA940051.

ENCLOSURE 3

WATTS BAR NUCLEAR PLANT (WBN) - UNIT 1
LIST OF COMMITMENTS

CDR 50-390/94-12

1. The four specific conditions identified above will be corrected in the plant.
2. TVA will provide additional training for the craft in the installation of conduits on cable tray supports.
3. TVA will revise the conduit installation procedure to clarify the requirements and to provide additional guidance for the installation of conduits on cable tray supports.
4. To determine the extent of condition of the described discrepancy, TVA will perform a sample of those conduits previously inspected. The sample will be based upon conduits (both class 1E and non-class 1E) known to be routed near or on cable tray supports. The results of this sample will be evaluated and appropriate actions taken to address the deficiencies found. SCAR WBSCA940041 will track these actions to completion.

Actions 1 through 4 will be completed by January 31, 1995.