TENNESSEE VALLEY AUTHORITY
CHATTANOOGA, TENNESSEE 37401

5N 157B Lookout Place

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WBRD-50-390/86-46

OCT 31 1986

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 UNIT 1 - DEFICIENCIES INVOLVING CIRCUITS INSIDE PENETRACTIONS - WBRD-50-390/86-46 - SECOND INTERIM REPORT

The subject deficiency was initially reported to NRC-Region II Inspector Bob Carroll on April 2, 1986 in accordance with 10 CFR 50.55(e) as NCR W-353-P. Our first interim report was submitted on May 21, 1986. Enclosed is our second interim report.

Glenn Walton was notified on July 31, 1986 that the final report needed to be rescheduled to October 30, 1986. Evaluation of root cause(s) and actions to prevent recurrence have not been completed, and the final report has now been rescheduled for submittal on or about February 13, 1987.

If there are any questions, please get in touch with J. A. McDonald at (615) 365-8527.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

R Gridley

R. Gridley, Director
Nuclear Safety and Licensing

Enclosure
cc (Enclosure):
Mr. James Taylor, Director
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
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ENCLOSURE
WATTS BAR NUCLEAR PLANT UNIT 1
DEFICIENCIES INVOLVING CIRCUITS INSIDE PENETRATIONS
WBRD-50-390/86-46
NCR W-353-P
10 CFR 50.55(e)
SECOND INTERIM REPORT

## Description of Deficiency

During the performance of Technical Instruction (TI) 72, "Field Verification of Electrical Devices," a number of problems associated with design, workmanship, and maintenance were identified. These problems include types of and methods used to install heat shrinkable devices, missing cable tags, wrong type cable ties, and deficiencies with bolting material and protective covers. Seven of the 22 items listed on the subject NCR are considered to be significant conditions in that they may be directly related to protecting or servicing class 1E safety-related cables. These seven deficiencies are:

1. Raychem heat shrinkable tubing improperly applied.
2. Raychem sleeves taped incorrectly.
3. Incorrect heat shrinkable material used on cable splices.
4. Bare copper conductors exposed.
5. Connectors loose on feedthroughs.
6. Flex conduit to penetration enclosures loose.
7. Bushing on penetration enclosure flex conduit connector missing.

One other item was identified which was deemed potentially significant. This is the installation of temporary and undocumented hoods over penetrations. The hoods were installed to protect feedthroughs without enclosures from damage by construction activities.

## Safety Implications

The deficiencies involve electrical circuits routed through containment penetrations. Some of the circuits are considered to be safety-related. Consequently, there is the potential that circuit malfunctions (short, ground, or open) could occur and cause associated equipment or instrumentation failure. In addition, regarding the temporary and undocumented hoods, failure to remove these hoods could, under design basis accident conditions, result in damage to penetration assemblies. As such, this condition, if left uncorrected, could adversely affect the safety of operations of the plant.

Corrective Action

The root causes of this deficiency have not been accurately determined because of the time elapsed between performance of the activity and identification of the problem. However, TVA is taking steps to identify and correct generic examples and prevent recurrence during future maintenance and modifications activities.

TVA will reinspect all electrical penetrations and correct any deficiencies (including removal of the temporary hoods) before fuel load of unit 1. As the specific nature and extent of deficiencies is identified, necessary actions to prevent recurrence will be defined.

This information will be provided to NRC in our final report, on or about February 13, 1987.