



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

DEC 20 1991

John H. Garrity
Vice President, Watts Bar Nuclear Plant

WBRD-50-390/90-04

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 No. 50-390

WATTS BAR NUCLEAR PLANT (WBN) UNIT 1 - CABLES DAMAGE AT SPLICES -
WBRD-50-390/90-04 - FINAL REPORT

The subject deficiency was initially reported to NRC Region II on November 1, 1990, in accordance with 10 CFR 50.55(e) as Significant Corrective Action Report WBP 900450. TVA submitted interim reports on this issue on November 30, 1990, and February 21, 1991. Enclosed is TVA's final report.

Enclosure 2 provides a list of commitments resulting from this submittal.

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

Sincerely,

John H. Garrity

Enclosures

cc: See page 2

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U.S. Nuclear Regulatory Commission

DEC 20 1991

cc (Enclosures):

INPO Record Center
1100 Circle 75 Parkway, Suite 1500
Atlanta, Georgia 30339

NRC Resident Inspector
Watts Bar Nuclear Plant
P.O. 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

Mr. B. A. Wilson, Project Chief
U.S. Nuclear Regulatory Commission
Region II
101 Marietta Street, NW, Suite 2900
Atlanta, Georgia 30323

WATTS BAR NUCLEAR PLANT (WBN)
CABLE DAMAGE AT SPLICES
CAQR WBP 900450
WBRD-50-390/90-04
10 CFR 50.55(e)
FINAL REPORT

DESCRIPTION OF DEFICIENCY

During the high potential testing of low voltage cables at WBN, two cables failed due to improperly applied splices. Additional external inspections were conducted to determine the extent of this condition at WBN. Significant Corrective Action Report (SCAR) WBP 900450 documents the deficiencies found during this initial examination. The deficiencies found include (1) cable damage at splices (i.e., broken conductor strands, nicks, cuts, bulges, gouges, scratches, indentations), (2) spliced conductors which are not sealed properly, and (3) improper application of the Raychem material. This condition may potentially affect all Class 1E splices performed between May 3, 1989 and October 25, 1990 and all harsh environment terminations.

The root cause of this deficiency has been determined to be a lack of attention to detail by the craft personnel when performing splice related activities.

SAFETY IMPLICATIONS

Terminations in a harsh environment and splices which are improperly prepared may experience moisture intrusion. This condition may cause a failure of the circuit resulting in a loss of power or control function to the safety-related end devices, which could adversely impact the plant's capability to safely shut down.

CORRECTIVE ACTION

Class 1E and non-1E Raychem splices which were worked by Construction personnel between May 3, 1989 and October 25, 1990, were identified. The May 3, 1989 date represents the start of workplan associated with engineering calculation WBP EVAR 8904055 (B26 890511 501) which identified Class 1E splices requiring rework due to a previous concern. Additionally, 10 CFR 50.49 equipment/devices with field cable terminations in harsh environments have also been identified.

TVA will perform a two-party independent inspection for damage to the subject splices and terminations. For multi-conductor cables with an overall Raychem sleeve, the sleeve will be removed prior to performing the inspections. Damage that is identified during these inspections will be evaluated and dispositioned, as required.

To prevent recurrence of this issue, craft personnel are required to attend training classes emphasizing the employees' responsibility regarding the quality of workmanship and verbatim compliance to procedures. Electrical craft are also required to attend training on the proper methods to perform terminations and splices.

Inspections and repairs will be implemented in accordance with the applicable system completion schedules.

ENCLOSURE 2

LIST OF COMMITMENTS

TVA will perform a two-party independent inspection for damage to the subject splices and terminations. For multi-conductor cables with an overall Raychem sleeve, the sleeve will be removed prior to performing the inspections. Damage that is identified during these inspections will be evaluated and dispositioned, as required. Inspections and repairs will be implemented in accordance with the applicable system completion schedules.