

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

5N 157B Lookout Place

NOV 20 1990

WBRD-50-390/90-03
WBRD-50-391/90-03

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) Docket Nos. 50-390
Tennessee Valley Authority) 50-391

WATTS BAR NUCLEAR PLANT (WBN) UNITS 1 AND 2 - CABLE PROXIMITY TO HOT PIPES -
WBRD-50-390/90-03 AND WBRD-50-391/90-03 - FINAL REPORT

- References:
1. TVA letter to NRC dated June 27, 1989, "Revision to Corrective Action Program (CAP) Plan for Cable Issues"
 2. TVA letter to NRC dated June 15, 1990, "Supplemental Information on WBN Cable Issues"

The subject deficiency was initially reported to NRC Region II on October 25, 1990, in accordance with 10 CFR 50.55(e) as Condition Adverse to Quality Report (CAQR) WBP 900264.

Enclosed is TVA's final report regarding the conduits which are routed too close to thermally hot pipes. Resolution of this item is being implemented by the CAP Plan for Cable Issues (Reference 2) as supplemented by TVA's submittal to NRC on June 15, 1990 (Reference 3). Specifically, Section 4.1.5 of the CAP plan provides the details of TVA's plan to resolve the cable proximity to hot pipes issue.

No new commitments to NRC are contained in this report.

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

Very truly yours,

TENNESSEE VALLEY AUTHORITY



E. G. Wallace, Manager
Nuclear Licensing and
Regulatory Affairs

Enclosure
cc: See page 2

9011270033 901120
PDR ADCK 05000390
S PDC



U.S. Nuclear Regulatory Commission

NOV 20 1990

cc (Enclosure):

Ms. S. C. Black, Deputy Director
Project Directorate II-4
U.S. Nuclear Regulatory Commission
One White Flint, North
11555 Rockville Pike
Rockville, Maryland 20852

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

ENCLOSURE

WATTS BAR NUCLEAR PLANT (WBN)
HOT PIPE
CONDITION ADVERSE TO QUALITY REPORT
(CAQR) WBP 900264
WBRD-50-390/90-03 AND WBRD 50-391/90-03
10 CFR 50.55(e)

FINAL REPORT

DESCRIPTION OF DEFICIENCY

In April of 1986, TVA's Sequoyah Nuclear Plant (WBN) identified a condition (SQ-CAQ-86-03-016) in their main steam valve vaults where cable degradation occurred due to heat from nearby main steam piping. SQN's problems resulted in part from failure to replace insulation after maintenance. In June of 1986, stemming from an incident at the San Onofre Nuclear Station, NRC issued an information notice (IEN 86-49) which highlighted failures of electrical cables exposed to uninsulated thermally hot pipes. Following a generic review for all TVA plants (PIR WBN EEB 8644), it was determined that WBN design criteria did not specify the separation requirements for cables from thermally hot pipes. As described in the Cable Issues Corrective Actions Program (CAP) Plan, TVA has implemented a program to ensure that adequate separation exists between cables and hot pipes. One element of this program includes plant walkdowns to identify those raceways located within the established zone of influence for hot pipes. This CAQR has now identified at least 18 conduits/junction boxes which fail to meet the established separation requirements.

SAFETY IMPLICATIONS

Temperature induced accelerated aging and subsequent degradation of cable insulation may occur when a cable is subjected to temperatures above its maximum design operating temperature. Cables routed in close proximity to hot pipes may be subjected to temperatures which may exceed their qualified design life.

CORRECTIVE ACTION

WBN will initiate the following actions to resolve this issue:

- ° Develop criteria that will detail required clearances between cables/raceways and hot pipes/valves to eliminate impact on the cable's allowable ampacity and qualified life.
- ° WBN will perform walkdowns against the criteria to ensure that adequate separation exists between cables and hot pipes/valves
- ° All deviations will be resolved by analysis, change of pipe insulation, or raceway rework.

ACTION REQUIRED TO PREVENT RECURRENCE

To prevent recurrence of similar installation deficiencies, TVA will incorporate the separation criteria into General Construction Specification G-40 for use on all future installations in the vicinity of thermally hot piping.

In addition, TVA will review maintenance practices and procedures to address the removal and replacement of thermal insulation during operation and ensure proper controls are in place to protect Class 1E cables by restoring the required insulation on hot pipe.

COMPLETION DATE: The corrective actions discussed above will be completed in accordance with the Cable Issues CAP Plan. As previously discussed with the NRC Staff, TVA will notify NRC of CAP completion.