



Tennessee Valley Authority, Post Office Box 2000, Decatur, Alabama 35630

APR 21 1992

O. J. "Ike" Zeigler
Vice President, Browns Ferry Operations

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

Gentlemen:

In the Matter of
Tennessee Valley Authority

)
)

Docket Nos. 50-259
50-260
50-296

BROWNS FERRY NUCLEAR PLANT (BFN) - UNITS 1, 2, and 3 - BRAND REX CABLE - ENVIRONMENTALLY QUALIFIED LIFETIME

- References:
1. TVA to NRC letter dated October 4, 1990, "Revision to the Cable Installation Issues Supplemental Report - Cable Pullby"
 2. TVA to NRC letter dated November 21, 1991, "Watts Bar Nuclear Plant, Units 1 and 2 - Cable Issues Corrective Action Plan (CAP) - Transmittal of University of Connecticut Report for the Resolution of the Pullby Issue"
 3. TVA to NRC letter dated January 23, 1991, "Brand Rex Cable"

This letter provides NRC with the results of supplemental environmental testing which has been completed for cable manufactured by Brand Rex and supplied to TVA under contract number 80X6-825419. Cable supplied under this contract has been installed in 10 CFR 50.49 circuits at BFN. The results of this testing demonstrate that the installed cable is capable of performing its intended safety function for the 40-year design life of the plant.

9204270451 920421
PDR ADCCK 05000239
P PDR

*Accol
1/10*

U. S. Nuclear Regulatory Commission

APR 21 1992

BACKGROUND

As part of the resolution of cable installation issues at BFN, in situ DC high-potential tests were conducted on a number of cables. During the performance of these tests which are described in Reference 1, one Brand Rex cable failed the test acceptance criteria. Subsequent to the BFN tests, cables from the same contract at Watts Bar Nuclear Plant experienced similar failures. The failed BFN cable was sent to the University of Connecticut's (UConn) Electrical Insulation Research Center for further evaluation. The UConn analysis of this cable indicated that the hi-pot test failure was isolated in nature and was due to the presence of atypically large inorganic contaminants in the cable insulation. The UConn test report was provided to NRC by Reference 2. In Reference 3 TVA provided NRC with the results of an engineering evaluation which concluded that the Brand Rex cable in question was capable of performing its intended safety function for at least one cycle. We also stated that additional testing would be performed to verify the qualification of the Brand Rex cable for the life of the plant.

SUPPLEMENTAL TEST RESULTS

The environmental qualification of this cable is based upon generic IEEE-383, 1974 parameters. TVA has completed additional testing to verify the qualification of Brand Rex cable for the design life of the plant. Environmental parameters were chosen which bound the application of these cables at BFN. The cable maintained its rated current and voltage during the 30-day accident simulation test (LOCA) after the cable had been preconditioned to the equivalent of 40 years life plus accident radiation. The qualification of this cable is documented in the Environmental Qualification Documentation Package.

SUMMARY

Based on the results of the tests performed, the ability of the cables to perform their intended safety function for a qualified life of 40 years is unaffected by the insulation anomalies previously identified.

U.S. Nuclear Regulatory Commission

APR 21 1992

If you have any questions, please telephone R. R. Baron, BFN Site
Licensing Manager, at (205) 729-7566.

Sincerely,



O. J. Zeringue

cc: NRC Resident Inspector
Browns Ferry Nuclear Plant
Route 12, Box 637
Athens, Alabama 35611

Mr. Thierry M. Ross, 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