TENNESSEE VALLEY AUTHORITY
CHATTANOOGA, TENNESSEE 37401
400 Chestnut Street Tower II

September 13, 1983

83 SEP 19 P1:14

WBRD-50-390/82-80
WBRD-50-391/82-76

U.S. Nuclear Regulatory Commission
Region II
Attn: Mr. James P. O'Reilly, Regional Administrator
101 Marietta Street, NW, Suite 2900
Atlanta, Georgia 30303

Dear Mr. O'Reilly:

WATTS BAR NUCLEAR PLANT UNITS 1 AND 2 - SHIELDED POWER CABLE BEND RADIUS DEFICIENCY - WBRD-50-390/82-80, -391/82-76 - FINAL REPORT

The subject deficiency was initially reported to NRC-OIE Inspector R. V. Crlenjak on July 29, 1982 in accordance with 10 CFR 50.55(e) as NCR WBN 4194R. Interim reports were submitted on August 30 and December 23, 1982. Enclosed is our final report. We no longer consider 10 CFR 50.55(e) applicable to this deficiency.

NRC-OIE Inspector Linda Watson was notified on July 22, 1983 concerning the root cause and action to prevent recurrence for the subject deficiency. The submittal of this report was delayed due to the additional information.

If you have any questions, please get in touch with R. H. Shell at FTS 858-2688.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

L M Mills

L. M. Mills, Manager
Nuclear Licensing

Enclosure
cc (Enclosure):
Mr. Richard C. DeYoung, Director
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

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ENCLOSURE
WATTS BAR NUCLEAR PLANT UNITS 1 AND 2
SHIELDED POWER CABLE BEND RADIUS DEFICIENCY
WBRD-50-390/82-80, WBRD-50-391/82-76
NCR 4194R
10 CFR 50.55(e)
FINAL REPORT

Description of Deficiency

Some cable tray fittings used at Watts Bar allow bending radii of 8-kV shielded power cables to be less than the minimum required by TVA construction specifications. These specifications require a minimum bending radius of 12 times the cable outside diameter (OD), while the 12-inch radius tray fittings allow the cables to be bent from about 6.6 to 10.7 times cable OD depending on cable size. The design of the plant cable tray system was based on numerous factors; but in some cases, the bending radius required for the largest shielded power cables was not adequately considered.

To identify, evaluate, and resolve class 1E cable bend radius problems at Watts Bar and Bellefonte Nuclear Plants, TVA has appointed a task team of representatives from the Division of Engineering Design and Construction (OEDC). Several problems have been identified at both plants, and NCRs have been written where the installed class 1E cables do not meet the requirements of TVA Construction Specification G-38. These NCRs are being dispositioned on a case-by-case basis. In some cases, relaxed cable bend radius values have been obtained from the cable manufacturers to allow acceptance of the as-installed configurations. For all future installations, TVA will comply with the established cable bend radius values or receive specific relaxation of these values from the manufacturer before cable installation.

Safety Implications

It has been determined through evaluation and testing by the vendors that the stated minimum bend radius discrepancy will not have any effect on the structure or electrical integrity of any 8-kV shielded power cables purchased for or in use at Watts Bar. Therefore, TVA no longer considers 10 CFR 50.55(e) applicable to this item.