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

October 23, 1981

BLRD-50-438/81-62
BLRD-50-439/81-60
WBRD-50-390/81-78
WBRD-50-391/81-74
HTRD-50-518/81-24
HTRD-50-520/81-23

Mr. James P. O'Reilly, Director
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Region II - Suite 3100
101 Marietta Street
Atlanta, Georgia 30303

Dear Mr. O'Reilly:

BELLEFONTE AND WATTS BAR NUCLEAR PLANTS UNITS 1 AND 2 AND HARTSVILLE NUCLEAR PLANT UNITS A1 and A2 - DEFICIENT CABLES MANUFACTURED BY ROCKBESTOS - BLRD-50-438/81-62, BLRD-50-439/81-60; WBRD-50-390/81-78, WBRD-50-391/81-74; HTRD-50-518/81-24, HTRD-50-520/81-23 - FIRST INTERIM REPORT

The subject deficiency was initially reported to NRC-OIE Inspector R. V. Crlenjak on September 21, 1981 in accordance with 10 CFR 50.55(e) as NCR's BLN EEB 8103 and WBN EEB 8110. Hartsville NCR HTN EEB 8101 was initially reported to R. V. Crlenjak on October 5, 1981. Enclosed is our first interim report. We expect to submit our next report by December 29, 1981. We consider 10 CFR Part 21 applicable to this deficiency.

If you have any questions concerning this matter, please get in touch with R. H. Shell at FTS 857-2581.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

for L. M. Mills, Manager
Nuclear Regulation and Safety

Enclosure
cc: Mr. Victor Stello, Jr., Director (Enclosure)
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Washington, DC 20555

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ENCLOSURE

BELLEFONTE AND WATTS BAR NUCLEAR PLANTS UNITS 1 AND 2
AND HARTSVILLE NUCLEAR PLANT UNITS A1 AND A2
DEFICIENT CABLES MANUFACTURED BY ROCKBESTOS
BLRD-50-438/81-62, BLRD-50-439/81-60; WBRD-50-390/81-78, WBRD-50-391/81-74;
HTRD-50-518/81-24, HTRD-50-520/81-23
10 CFR 50.55(e)
FIRST INTERIM REPORT

Description of Deficiency

Coaxial, twinaxial, and triaxial cables with solid dielectrics manufactured by the Rockbestos Company and bearing their part Nos. RSS-6-100 through RSS-6-112 were reported by the manufacturer as subject to failure at temperatures above 230°F. These cable types had previously been qualified by a type test in accordance with IEEE 383-1974 to a containment temperature of 340°F and a high energy line break (HELB) temperature of 440°F using type RSS-6-102 cable. Subsequent testing by the manufacturer on a type RSS-6-104 developed a failure mode wherein the center conductor shorted to the braided shield.

Expansion of the solid dielectric when heated causes foreshorting of the braided shield, which in turn results in longitudinal compression and kinking of the center conductor. This kinking, combined with heat may cause thermal stress cracking of the insulation, thus permitting electrical failure.

These type of cable are potentially planned to be used in Class IE systems within containment wherein they are expected to withstand temperatures in excess of 230°F. In addition, these cables are expected to withstand HELB in excess of 230°F outside of containment in Class IE systems.

The Raychem Corporation manufactured similar cables which were the forerunners of the Rockbestos Company types (Rockbestos having procured Raychem design and rights to manufacture under their part numbers). These cables are also subject to failure at temperatures in excess of 230°F.

The following listing delineates the equivalence of part numbers:

Rockbestos Part No.	Raychem Part No.
RSS-6-100	10499
RSS-6-101	10524
RSS-6-102	10481
RSS-6-103	10439
RSS-6-104	10568
RSS-6-105	10569
RSS-6-106	10497
RSS-6-107	10498
RSS-6-108	10504

Rockbestos Part No.	Raychem Part No.
RSS-6-109	10496
RSS-6-110	10566
RSS-6-111	10564
RSS-6-112	10548

Interim Progress

The investigation to determine the number of actual installations in Class IE systems of these types of cables is continuing. No new installations are being permitted. The manufacturer has ceased to make any additional cable and is evaluating a new design to overcome the temperature deficiency.

To correct any existing temperature deficiency with installed cables, TVA intends to replace them with qualified cables.