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

May 83 MAY 6 A11 : 17

BLRD-50-439/82-36

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:

BELLEFONTE NUCLEAR PLANT UNIT 2 - FAULTY RELAYS IN AUXILIARY POWER DISTRIBUTION SYSTEM BY BROWN BOVERI ELECTRIC - BLRD-50-439/82-36 - FINAL REPORT

The subject deficiency was initially reported to NRC-OIE Inspector D. Quick on May 28, 1982 in accordance with 10 CFR 50.55(e) as NCR 1822. This was followed by our interim reports dated June 28, and December 7, 1982. Enclosed is our final report. 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 858-2688.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

L. M. Mills, Manager
Nuclear Licensing

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

Records Center (Enclosure)
Institute of Nuclear Power Operations
1100 Circle 75 Parkway, Suite 1500
Atlanta, Georgia 30339

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ENCLOSURE

BELLEFONTE NUCLEAR PLANT UNIT 2
FAULTY RELAYS IN AUXILIARY POWER DISTRIBUTION SYSTEM BY BROWN BOVERI ELECTRIC
NCR 1822
BLRD-50-439/82-36
10 CFR 50.55(e)
FINAL REPORT

Description of Deficiency

Two I-T-E (I-T-E Imperial Corporation) type 27 undervoltage relays and two I-T-E type 59 overvoltage relays located in Class IE, unit 2 6.9-kV switchgear (furnished by Brown Boveri Electric, Chalfont, Pennsylvania, on contract 75K5-85583) failed to function during construction testing.

Safety Implications

The failure of the undervoltage relays could disconnect the affected switchgear from the power grid and unnecessarily connect the switchgear to the diesel generators which would start up, then later shut down, leading to a complete power shutdown to the bus supplying power to safety-related equipment.

In the case of the overvoltage relay failures, the motors associated with the safety-related equipment could be degraded because of overvoltage.

Corrective Action

These four relays were returned to Brown Boveri Electric for repair. One type 59 relay was found to have a failed transistor and was repaired. The second type 59 relay was found to have no operational problems after testing by the vendor. The two type 27 relays were modified and repaired under a related nonconformance report (NCR BLN BLP 8012) to prevent drop out on loss of dc voltage. All four relays have been returned to Bellefonte and reinstalled.

TVA considers these to be random deficiencies with no generic implications. Accordingly, no actions to prevent recurrence are necessary.