

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

400 Chestnut Street Tower II

84 SEP 19
September 27, 1984

BLRD-50-438/84-13
BLRD-50-439/84-12

U.S. Nuclear Regulatory Commission
Region II
Attn: Mr. James P. O'Reilly, Regional Administrator
101 Marietta Street, NW, Suite 2900
Atlanta, Georgia 30323

Dear Mr. O'Reilly:

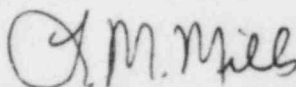
BELLEFONTE NUCLEAR PLANT UNITS 1 AND 2 - NUMEROUS DEFICIENCIES ON E-MAX
PANELS - BLRD-50-438/84-13, BLRD-50-439/84-12 - FINAL REPORT

The subject deficiency was initially reported to NRC-OIE Inspector
P. E. Fredrickson on January 31, 1984 in accordance with 10 CFR 50.55(e)
as NCR 2784. This was followed by our interim reports dated February 29,
and May 25, 1984. Enclosed is our final report. We consider 10 CFR Part
21 applicable to this deficiency.

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, 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 UNITS 1 AND 2
NUMEROUS DEFICIENCIES ON E-MAX PANELS
BLRD-50-438/84-13, BLRD-50-439/84-12
NCR 2784
10 CFR 50.55(e)
FINAL REPORT

Description of Deficiency

Incorrect wiring connections have been identified on isolator cabinets manufactured for TVA for Bellefonte Nuclear Plant (BLN) by E-Max Instruments, Incorporated, Englewood, Colorado. The isolators provide physical separation and electrical isolation between class 1E and nonclass 1E circuits. Additionally, in crate A of isolator 1IX-ISOL-155-F, the module connector labeled 12B was missing. This nonconformance report (NCR) was determined to be significant based upon the repetitive NCRs which have been written against balance-of-plant (BOP) isolator cabinets supplied by E-Max Instruments, Incorporated.

TVA has determined that the cause of the incorrect wiring deficiencies was an inadequate quality assurance (QA) program on the part of the vendor. Additionally, TVA's failure to perform source inspections on the subject equipment could have, in part, resulted in the deficiencies not being identified before shipment.

The missing module connector was due to removal of the connector by a TVA instrument mechanic without proper approval or documentation.

Safety Implications

The incorrect wiring could not cause a failure of automatic plant systems to mitigate a design basis accident. However, an erroneous annunciation signal or instrument reading resulting from incorrect wiring could possibly lead to unnecessary and/or incorrect action/inactions on the part of the operator. This could adversely affect the safe operation of the plant.

Corrective Action

TVA has removed and reconnected, per vendor drawings, all wires found to be incorrectly connected. The missing module connector was determined to be an extra and, as such, had no identified function. Thus, it was not necessary to replace the connector. TVA has also determined that this deficiency does not apply to any other TVA nuclear plants, and has not occurred for BLN on any subsequent contracts with E-Max Instruments, Incorporated.

TVA's QA personnel have worked with E-Max Instruments, Incorporated, to improve the vendor QA program as documented in TVA Audit Report No. DB1-V-0054. Additionally, TVA's Quality Engineering Branch has been instructed to not waive source inspections without concurrence from the responsible technical engineer per TVA's Division of Engineering Design (EN DES) Engineering Procedure (EP) 5.43. These actions will prevent recurrence of this deficiency.

TVA considers the unauthorized removal of the module connector to be an isolated occurrence. TVA has adequate procedures in place to control the maintenance and removal of plant equipment. The individual responsible for the removal is no longer employed by TVA. Thus, no action to prevent recurrence is necessary.