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

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November 27, 1984

BLRD-50-438/83-52
BLRD-50-439/83-45

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 - FRONT COVERS SEPARATED FROM BAILEY METER MODULES - BLRD-50-438/83-52, BLRD-50-439/83-45 - FINAL REPORT

The subject deficiency was initially reported to NRC-OIE Inspector Linda Watson on October 4, 1983 in accordance with 10 CFR 50.55(e) as NCR 2454. This was followed by our interim reports dated November 1, 1983 and January 25 and April 18, 1984. A one-week delay of this submittal was discussed with Inspector P. E. Fredrickson on November 21, 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

J. W. Hufham by RHS

J. W. Hufham, Manager
Licensing and Regulations

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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Institute of Nuclear Power Operations
1100 Circle 75 Parkway, Suite 1500
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ENCLOSURE

BELLEFONTE NUCLEAR PLANT UNITS 1 AND 2
FRONT COVERS SEPARATED FROM BAILEY METER MODULES
BLRD-50-438/83-52, BLRD-50-439/83-45
NCR 2454
10 CFR 50.55(e)
FINAL REPORT

Description of Deficiency

While inspecting Bailey Meter Company modules at Bellefonte Nuclear Plant (BLN), TVA's Office of Construction (OC) personnel discovered that front cover plates for several class 1E modules in control cabinets for the nonnuclear instrumentation (NNI) and essential controls instrumentation (ECI) systems had become separated from the frame body of the module. The front cover plate is attached to the frame body by means of two spot welds at the top and bottom of the front cover plate. These spot welds had been broken causing the front plate cover to separate from the module.

The root cause of this problem was inadequate process control by the vendor. This is documented in Babcock and Wilcox (B&W) letter D-4981. The vendor failed to supply sufficient current for the second and subsequent spot welds which secure the front cover to the module. This insufficient current resulted in smaller than acceptable weld nugget sizes.

A secondary contributor to failure of the front cover welds was the excessive forces required to remove the module. This excessive force resulted from a misalignment of the back plane contacts.

Safety Implications

The spot welds on the front cover plates of the class 1E control modules have become separated from the frame body. This will allow the modules greater movement inside the cabinets. Unrestricted movement of the modules inside the cabinet could lead to the possible short-out of wiring in the modules or the module-to-cabinet plug-in coming out of the cabinet. The loss of essential safety-related controls would adversely affect the safe operation of the plant.

Corrective Actions

The modules were returned to the vendor for rework. The vendor has completed the rework and returned the modules to BLN. For the smaller than acceptable weld sizes, the vendor revised his welding procedure to ensure that adequate current is supplied during the welding process so that acceptable welds are produced.

To address the misalignment problem, TVA will realign these back plane contacts that have been documented in this nonconformance report using a special alignment tool in accordance with the vendor's recommendations by March 22, 1985. TVA is obtaining this tool from B&W and requested that B&W provide maintenance instructions governing the tool's use. TVA will incorporate these instructions into the maintenance procedures used by site personnel. TVA anticipates receipt and approval of these instructions by February 15, 1985.