

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

400 Chestnut Street Tower II

February 24, 1982

BLRD-50-438/81-08

BLRD-50-439/81-08

U.S. Nuclear Regulatory Commission  
Region II

Attn: Mr. James P. O'Reilly, Regional Administrator  
101 Marietta Street, Suite 3100  
Atlanta, Georgia 30303

Dear Mr. O'Reilly:

BELLEFONTE NUCLEAR PLANT UNITS 1 AND 2 - SOLID STATE AC VOLTAGE RELAYS -  
BLRD-50-438/81-08, BLRD-50-439/81-08 - FOURTH INTERIM REPORT

The subject deficiency was initially reported to NRC-OIE Inspector M. Thomas on January 2, 1981 in accordance with 10 CFR 50.55(e) as NCR BLN BLP 8012. This was followed by our interim reports dated February 2, May 14, and September 11, 1981. Enclosed is our fourth interim report. We expect to submit our next report by August 4, 1982. We consider 10 CFR Part 21 to be 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*  
L. M. Mills, Manager  
Nuclear Regulation and Safety

Enclosure

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



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## ENCLOSURE

BELLEFONTE NUCLEAR PLANT UNITS 1 AND 2  
SOLID STATE AC VOLTAGE RELAYS  
BLRD-50-438/81-08, BLRD-50-439/81-08  
10 CFR 50.55(e)  
FOURTH INTERIM REPORT

### Description of Deficiency

The solid state ac voltage relays used on the 6.9 kV Class IE switchgear require a source of dc control power for proper operation. The present design configuration of the relays utilizes a contact from the undervoltage relay to energize an auxiliary relay upon detection of an undervoltage condition. The auxiliary relay initiates alarms and breaker trips. However, when dc control power is lost and then restored (such as might accompany a bus transfer), the auxiliary relay will become energized long enough to initiate the supply feeder breaker trip sequence even though an actual undervoltage condition does not exist. If this were to occur at a time when offsite power was not available and the source of power was the emergency onsite power source (diesel generator), this condition would lead to the inadvertent isolation of a 6.9 kV Class IE switchgear board. In this instance, the boards would have to be manually reconnected.

The 6.9 kV switchgear was designed and supplied by Gould-Brown Boveri, Westminster, Maryland.

### Interim Progress

The vendor (Brown Boveri Electric) is in the process of factory modifying these undervoltage relays to eliminate dropping out on loss of dc voltage. Instruction manuals for modified type 27 relays have been approved by TVA. The completion date for these modifications has been scheduled for June 1982. TVA is requesting the vendor to improve the schedule.