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Brown Boveri

Switchgear Products Division

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March 13, 1984

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Lanish Part 21 Report

Mr. R. C. DeYoung, Director
Office of Inspection & Enforcement
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Subject: ITE-27N Undervoltage Relay (10CFR Part 21 Report)

Dear Mr. DeYoung:

Brown Boveri has determined that there is a possibility of misoperation of the ITE-27N Undervoltage Relay. The nature of this misoperation is the failure to drop out on certain undervoltage conditions.

This misoperation can occur only when all of the following conditions are met:

1) The AC signal voltage is above the PICKUP level set on the relay.

2) There is a sudden loss of the AC voltage to below 20% of the set pickup level.

3) The sudden loss of AC voltage must occur on a certain portion of the AC 60 Hz. waveform.

Therefore, because of these three (3) conditions having to be met, misoperation will be an uncommon event. No reports of such misoperation have been received from the users listed in the attachment.

This problem is due to excessive feedback around operational amplifier U2.

CORRECTIVE ACTION

All Units: Catalog Nos. 211T1075, 211T0375 and 211T4175
Resistor R11 must be changed from 100k to 200k ohms
(Brown Boveri part #605087-414)

*Units with Definite Time Characteristics - (Cat. #211T4175 only)

A clamping diode (part #605238-004) must be added in the circuit between pins 1 and 2 of integrated circuit U5.

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* NOTE: The list of users whose ITE 27N relays have definite time characteristics and require this additional modification are identified with an asterisk * in Attachment No. 1.

Users should contact Brown Boveri to arrange for the return of the relay circuit boards to the factory for modification.

For those users who have technicians qualified to make repairs to double-sided printed circuit boards with plated-through holes, and who wish to make repairs themselves to reduce turn-around time, Brown Boveri will supply resistors, diodes (where needed) and instructions. Each modified relay should have standard calibration tests to verify operation prior to return to service.

Attachment No. 1 lists the location of ITE 27N relays being used in Class 1E applications.

D. D. DUVALL
Vice President

DDD/jm

Attachment

cc: A. Boetticher
R. Conrad
D. Dalasta
C. Downs
W. Laubach
E. Rhoads
W. Laudan

ATTACHMENT NO. 1

INSTALLATIONS WITH ITE-27N UNDERVOLTAGE RELAY

TVA	No. of Units
* Bellefonte Plant	12
Watts Bar Plant	40
Browns Ferry Plant	26
Sequoyah Plant	14
FLORIDA POWER & LIGHT	
* St. Lucie Unit 2	21
GULF STATES UTILITIES	
* River Bend	2
WPPSS	
* Hanford 2 (Through General Electric San Jose, Calif.)	2
NORTHEAST UTILITIES	
Millstone 1 (Through Gould Inc. Finksburg, MD.)	11