



830 Power Building

TENNESSEE VALLEY AUTHORITY  
CHATTANOOGA, TENNESSEE 37401

*Central File*  
50-390  
391

November 22, 1976

Mr. Norman C. Moseley, Director  
Office of Inspection and Enforcement  
U.S. Nuclear Regulatory Commission  
Region II - Suite 818  
230 Peachtree Street, NW.  
Atlanta, Georgia 30303

Dear Mr. Moseley:

OFFICE OF INSPECTION AND ENFORCEMENT CIRCULAR 76-02 - IE:II:NCM  
50-327, -328, -390, -391, -438, -439 - SEQUOYAH, WATTS BAR, AND  
BELLEFONTE NUCLEAR PLANTS - RELAY FAILURES

In response to your August 18, 1976, letter which transmitted IE  
Circular 76-02, our investigations of the class IE applications  
for Sequoyah, Watts Bar, and Bellefonte Nuclear Plants reveals  
that we have not used the subject Westinghouse relays in class  
IE circuits.

Very truly yours,

  
J. E. Gilleland  
Assistant Manager of Power

CC: Dr. Ernst Volgenau, Director  
Office of Inspection and Enforcement  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555

*afon*



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION II  
230 PEACHTREE STREET, N. W. SUITE 818  
ATLANTA, GEORGIA 30303

AUG 18 1976

In Reply Refer To:  
IE:II:NCM

50-438 50-327  
50-439 50-328  
50-259 50-390  
50-260 50-391  
50-296

Tennessee Valley Authority  
ATTN: Mr. Godwin Williams, Jr.  
Manager of Power  
830 Power Building  
Chattanooga, Tennessee 37401

Gentlemen:

The enclosed Circular, 76-02 is forwarded to you for information and action. This is the second issue of an expanded system for communication from the Office of Inspection and Enforcement to applicants and licensees, to supplement the issuance of IE Bulletins.

Bulletins have been, and will continue to be limited to subjects considered to be of appropriate significance to require prompt response. Circulars will cover subjects of lesser significance, immediacy or for which a longer response time appears appropriate. Future IE Circulars may be addressed to any class of NRC licensees, and may or may not require response.

Sincerely,

N. C. Moseley  
Regional Director

Enclosure:  
IE Circular 76-02

August 18, 1976  
IE Circular No. 76-02

RELAY FAILURES-WESTINGHOUSE BF (ac) AND BFD (dc) RELAYS

DESCRIPTION OF CIRCUMSTANCES:

DURING TESTING OF Westinghouse BFD relays, the Point Beach nuclear power plant experienced malfunctions with two relays in the reactor trip system. The malfunctions were caused by the pin that connects the plunger to the operating head rubbing against the contact block. Although the coils were fully energized the relay contacts remained in the deenergized position. A similar malfunction occurred in one of a set of relays undergoing accelerated aging tests at the Westinghouse Beaver facility.

The malfunction relating to pin misalignment may be common to both BF (ac) and BFD (dc) relays. Portions of a Westinghouse service letter containing information about these relays are attached to this circular. Further instructions regarding this relay problem can be obtained from Westinghouse Nuclear Service Division, Pittsburgh, Pennsylvania 15230.

ACTION TO BE TAKEN BY LICENSEES AND PERMIT HOLDERS:

The following actions should be taken with respect to all Westinghouse BF (ac) and BFD (dc) relays in safety related systems:

1. Describe the action taken or that you plan to take to verify that normally energized relays in safety related systems are in fact operable and that the relay contacts are in the energized position.
2. Describe the action taken or that you plan to take to verify that normally deenergized relays in safety related systems operate properly when energized and that the relay contacts are in the energized position.

Reports for facilities with operating licenses should be submitted within 60 days after receipt of this circular, and reports for facilities with construction permits should be submitted within 90 days after receipt of this circular. Your report should include the date when the above actions were or will be completed.

Reports should be submitted to the Director of the NRC Regional Office and a copy should be forwarded to the NRC Office of Inspection and Enforcement, Division of Reactor Inspection Programs, Washington, D. C. 20555.

Approval of NRC requirements for reports concerning possible generic problems has been obtained under 44 U.S.C 3152 from the U. S. General Accounting Office. (GAO Approval B180255 (R0072), expires 7/31/77)

**ATTACHMENT:**

Extract from Westinghouse Service Letter:

BF (ac) AND BFD (dc) RELAYS

EXTRACT FROM WESTINGHOUSE SERVICE LETTER:

B & BFD RELAYS

DURING THE TESTING OF CERTAIN Westinghouse BFD relays at an operating nuclear power plant, two relays in the reactor trip system were found to have malfunctions. Although the coils were fully energized, the relay contacts remained in the deenergized position. It was determined that, in both cases, the pin that connects the plunger to the operating head was rubbing against the contact block. This rubbing action resulted in friction that impeded the plunger movement when the relay coil was energized thereby preventing contact movement. The malfunctioning relays were immediately replaced. When disassembled it was found that the relays would operate normally when the pin was centered in the plunger.

COINCIDENTLY, Westinghouse (Beaver) the relay manufacturer, experienced a similar malfunction in one of a set of similar relays which are currently undergoing accelerated aging tests.

Westinghouse (Beaver) and Westinghouse (NES) are currently investigating this situation in detail as it applies to both BF (ac) and BFD (dc) models. Consideration is being given to various means by which the pin could be held captive, thereby precluding further pin misalignment, if such a course of action becomes necessary.

RECOMMENDED ACTION

Visually inspect normally energized relays to verify that such relays are in fact picked up. Observe the performance of normally deenergized relays during normal periodic testing.