UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION III
799 ROOSEVELT ROAD
GLEN ELLYN, ILLINOIS 60137

CENTRAL FILES

AUG 17 1976

Northern States Power Company
ATTN: Mr. Leo Wachter
Vice President
Power Production and System
Operation
414 Nicollet Mall
Minneapolis, Minnesota 54401

Docket No. 50-263
Docket No. 50-282
Docket No. 50-306

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,

James G. Keppler
Regional Director

Enclosure:
IE Circular 76-02

cc w/encl:
Mr. L R. Eliason
Plant Manager
Mr. F. P. Tierney, Jr.
Plant Manager

bcc w/encl:
Central Files
IE Files
PDR
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Anthony Roisman, Esq.,
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August 17, 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 B-180255 (R0072), expires 7/31/77)

Attachment:
Extract from Westinghouse Service Letter:
BF (ac) and BFD (dc) Relays

EXTRACT FROM WESTINGHOUSE SERVICE LETTER:

BF & BFD RELAYS

During the testing of certain Westi- -se BFD relays at an operating nuclear power plant, two relays in the reactor trip syster were found to have malfunctions. Although the coils were fully energized, the relay contacts r ained in the deenergized position. It was determined that, in both ca- , 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 immediat.ly replaced. When dissassembled 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 simi'ar malfunction in one of a set of similar relays which are urrently undergoing accelerated aging tests.

Westinghouse (Beaver) and Westinghouse (NPS) are currently investigating this situation in detail as it applies to both BF (ac) and BFD (dc) models. Consideration is being given to var'ous 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.

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CENTRAL FILES

July 28, 1976

Northern States Power Company
ATTN: Mr. Leo Wachter, Vice
President
Power Production and
System Operation
414 Nicollet Mall
Minneapolis, Minnesota 55401

Docket No. 50-263
Docket No. 50-282
Docket No. 50-306

Gentlemen:

The enclosed Bulletin, No. 76-07 is forwarded to you for information and action. A similar document entitled Circular No. 76-01, is being transmitted to each holder of a Construction Permit. Therefore, if you have a nuclear power plant in the construction stage, you will also receive a copy of Circular No. 76-01 which will require separate response. You will note that the significant difference between the two documents is the time allowed for response.

Inspection and Enforcement Bulletins have been and will continue to be limited to subjects considered to be of significance and which require prompt response. In the future, Bulletins will be supplemented by Circulars as a communication medium where the subject matter is of lesser significance, immediacy, or for which a longer response time or no response may be acceptable.

Sincerely,

James G. Keppler
Regional Director

Enclosure:
IE Bulletin No. 76-07

cc w/encl:
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9105,00343

July 28, 1976
IE Bulletin No. 76-07

CRANE HOIST CONTROL - CIRCUIT MODIFICATIONS

DESCRIPTION OF CIRCUMSTANCES:

In response to NRC concerns about the potential for, and consequences of, dropping a spent fuel shipping cask or other heavy load, Commonwealth Edison modified the hoist control system for the fuel cask handling cranes at their Dresden Units 2 and 3 and Quad-Cities Units 1 and 2 to provide additional hoist redundancy and slow speed hoist capability. The original design utilized a General Electric "magspeed" hoist control system. In this system which includes two electro-mechanical brakes in series, spring force holds the brakes engaged while DC solenoids, energized when the hoist motor is energized, disengage the brakes.

The modification which added the slow speed hoist capability included installing additional contactors in the brake solenoid power circuit to energize the solenoids when the low speed hoist motor was energized.

The original hoist control system design utilized a single Size 2 DC contactor (two contacts in series) in the solenoid circuit. The design modification added a circuit in parallel with the original DC contactor which utilized four AC rated Size 1 single contacts in a series-parallel array to distribute current carrying and interrupting burden.

Initial experience with the modified hoist control system at Dresden showed that the circuit interrupting capacity of the series-parallel array was marginal. On several occasions when the low speed motor was stopped in the lowering mode, the solenoid circuit contacts arced resulting in power being supplied to the solenoids long enough so that the load dropped some distance before the brakes engaged. Over travel of as much as 15 inches was reported, but no damage to hoist or load was found.

The crane manufacturer's representatives have advised the NRC that the proposed corrective action is to install a single Size 2 DC contactor (two contacts in series) with arc suppressors, the same as originally provided in the General Electric design, in place of the added four AC rated contacts. The original contactor in the normal speed control circuit has shown satisfactory service since initial operation of the plant in 1969.

ACTION TO BE TAKEN BY LICENSEE:

1. Determine and report to this office within 20 days the following information:

   (a) Have you made, or do you plan to make modifications to the hoist control for your installed cranes similar to the described modifications?

   (b) If such modifications have been made, or are planned, identify changes required in brake power and control circuitry?

   (c) What steps have been taken or are planned, to provide assurance that brake power contactors are adequate for the service?

2. If modifications are planned, provide the schedule for completion and a brief description of your plans for design review and functional testing.

Your response should be submitted to the Director of this Office, with a copy to the Director, Division of Reactor Inspection Programs, Office of Inspection and Enforcement, U. S. Nuclear Regulatory Commission, 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 B-180255 (R0072), expires 7/31/77).