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Dresden Nuclear Power Station
R. R. #1
Morris, Illinois 60450
May 29, 1975

Mr. James G. Keppler, Regional Director
Directorate of Regulatory Operation-Region III
U. S. Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, Illinois 60137

SUBJECT: REPORT OF ABNORMAL OCCURRENCE PER SECTION 6.6.A OF THE TECHNICAL SPECIFICATIONS
FAILURE OF MSIV-1C "≤10% CLOSURE" LIMIT SWITCH

References: 1) Regulatory Guide 1.16 Rev. 1 Appendix A

2) Notification of Region III of U. S. Nuclear Regulatory Commission
Telephone: Mr. Johnson, 0930 hours on May 20, 1975
Telegram: Mr. Keppler, 1515 hours on May 20, 1975

3) Drawing Number: Electrical Print 12E2464

Report Number: 50-237/75-29

Report Date: May 29, 1975

Occurrence Date: May 19, 1975

Facility: Dresden Nuclear Power Station, Morris, Illinois

IDENTIFICATION OF OCCURRENCE

The limit switch indicating "≤10% closure" on the 1C Main Steam Isolation Valve failed during the startup of Unit-2 following a refueling outage. This event is contrary to section 3.1 of the Technical Specifications.

CONDITIONS PRIOR TO OCCURRENCE

At the time of the occurrence, Unit-2 was in the STARTUP mode at 110 MWt.

DESCRIPTION OF OCCURRENCE

At 0907 hours on May 19, 1975, the MSIV timing surveillance was started. While testing valve 1A, a channel B half scram was initiated. Investigation revealed that Reactor Protection Relay 590-102D was de-energized. This relay is normally energized through the "≤10% closure" limit switches on MSIV's 1C & 2C.

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According to the valve position indicator lights, both were fully open. MSIV's 1C & 2 C were tested in an attempt to try and pick up the 590-102D relay. These tests had no effect on the relay.

DESIGNATION OF APPARENT CAUSE OF OCCURRENCE (Procedure)

At the time of this occurrence the drywell had not yet been inerted. Operating personnel and a master mechanic entered the drywell to check the operation of the 1C limit switch and discovered that the internal workings of the switch were missing.

During the recent Unit-2 refueling outage, all MSIV limit switches were removed for inspection and cleaning. All the switches were satisfactorily tested for continuity in the shop after being cleaned. Inadvertently, the 1C limit switch was never reinstalled.

It was assumed by station management that all the switches were installed, tested, and operating properly. The safety related work request package required a maintenance functional test, two post-maintenance operational tests, MSIV 10% closure test, and MSIV closure timing test. On April 17, 1975 the work package was signed off as completed. However, the two operational tests had not been performed. The maintenance foreman signed the safety related work package in the location indicating completion of the operational test. When the work package was subsequently reviewed, all signatures were present and the package was considered complete.

Several procedural problems compounded to result in the occurrence. First, the maintenance test required on the switch apparently was not performed. Eight of these switches were being inspected and tested during the same time period. It is surmised that the tested and untested switches became mixed in the maintenance shop. Second, the maintenance foreman signed the work package in the location reserved for the sign-off of the operational test, an error which went unnoticed in subsequent review of the package. Third, the operational tests specified with the package would not have revealed the missing switch unless the tests were performed above 600 psig reactor pressure while certain specified relays were observed. There is another surveillance procedure that, if performed above 600 psig reactor pressure, would have indicated the operation of the switch.

ANALYSIS OF OCCURRENCE

The absence of the "$\leq$10% closure" limit switch on MSIV-1C causes relay 590-102D to drop out. This action simulates that MSIV-1C is greater than 10% closed. Since the above failure was to the "fail-safe" mode, the design criteria (three steam lines greater than 10% closed yields a full scram) was not altered. Therefore, the health and safety of the plant personnel and the public were not jeopardized as a result of this occurrence.

CORRECTIVE ACTION

The unit was operated for four days with the circuit in the "tripped" mode. The unit was then shut down, the switch was installed and proper operation verified.

To prevent recurrence, this incident will be discussed with the personnel involved. Also, a description of the incident will be distributed to all management personnel with emphasis on the need to adequately specify and review tests to be performed. The corrective action will be completed by June 6, 1975.

B. B. Stephenson
Superintendent

BBS:smp

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