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BBS Ltr. #920-74

Dresden Nuclear Power Station
R. R. #1
Morris, Illinois   60450
December 24, 1974

Mr. James G. Keppler, Regional Director
Directorate of Regulatory Operations-Region III
U. S. Atomic Energy Commission
799 Roosevelt Road
Glen Ellyn, Illinois   60137
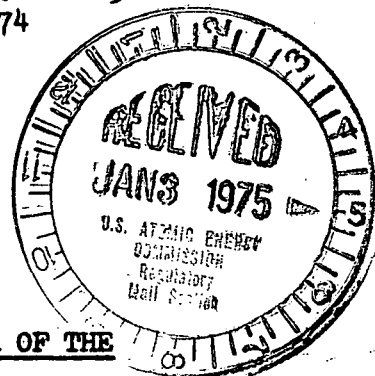
SUBJECT: REPORT OF ABNORMAL OCCURRENCE PER SECTION 6.6.A OF THE
TECHNICAL SPECIFICATION
LOW PRESSURE COOLANT INJECTION SYSTEM RECIRCULATION LOOP BREAK
DETECTION SETPOINT VIOLATION

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

2) Notification Region III of AEC Regulatory Operations
Telephone: P. Johnson 1500 hours December 17, 1974
Telegram: J. Keppler 1547 hours December 17, 1974

3) GEK Manual 27679, 12E2437A

Report Number: 50-237/1974-78

Report Date: December 24, 1974

Occurrence Date: December 16, 1974

Facility: Dresden Nuclear Power Station, Morris, Illinois
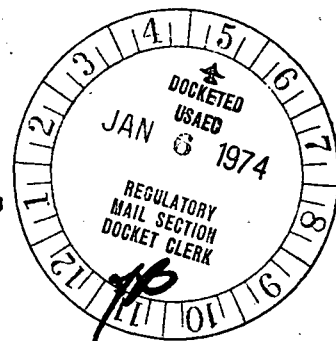
IDENTIFICATION OF OCCURRENCE

Differential pressure switches DPIS 261-34A and DPIS 261-34C in the low
pressure coolant injection system (LPCI) were found to have switch
contacts in the closed position and associated relays 1530-183 and
1530-184 actuated. This condition resulted in LPCI being preselected to
recirculation loop "A".

CONDITION PRIOR TO OCCURRENCE

Dresden Unit 2 was in the shutdown mode with a refueling outage in
progress.

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DESCRIPTION OF OCCURRENCE

At approximately 1700 on December 16, 1974 while performing routine logic testing of Differential Pressure switches DPIS 261-34A and 261-34C it was noted that relays 1530-183 and 1530-184 were in the actuated condition. This condition should only occur when greater than or equal to 1 PSI increasing differential pressure exists between Recirculation Loop A and Loop B. Differential pressure switches DPIS 261-34B and DPIS-34D were checked and verified satisfactory for operation. LPCI flow availability to recirculation loop A, if LPCI had been required, was also verified.

DESIGNATION OF APPARENT CAUSE OF OCCURRENCE (Component Failure)

The cause of the occurrence is believed to be switch failure caused by changing differential pressure across the jet pump risers.

ANALYSIS OF OCCURRENCE

The closure of switch contacts in the differential pressure switches DPIS 261-34A and DPIS 261-34C resulted in the subsequent energization (Pick-up) of relays 1530-183 and 1530-184. Pick-up of the relays identified above, provided a system logic function of identifying recirculation loop A pressure greater than recirculation loop B pressure. If LPCI had been required, the false logic signals generated by the differential pressure switches would have, through the system logic function, proceeded to have system II (Recirculation loop B) valve closed. Differential pressure switched DPIS 261-34B and DPIS 261-34D were checked and found to be operable which, if LPCI had been required, would have, through the system logic function, permitted full LPCI flow into recirculation loop A. Because of the redundancy of the LPCI system and the verification that the switches DPIS 261-34B and DPIS 261-34D were operable, it is concluded that the safety of plant personnel or the general public was not endangered by the switch failures.

CORRECTIVE ACTION

Correction action was to replace the electrical switches in DPIS 261-34A and DPIS 261-34C and to adjust the switches for operation at the setpoint in accordance with the approved factory representative procedure. Future corrective action will be to install dampening devices on all loop select differential switches, to reduce the sensed turbulence level.

FAILURE DATA

The LPCI jet pump riser differential pressure switches are ITT Barton type 288 switches. This is the first known failure for switches

DPIS 261-34A and DPIS 261-34C. Previous failures have been noted on ITT Barton type 288 switches after being subjected to repeated system turbulence levels.

Sincerely,

B. B. Stephenson

BBS:WEH:smp