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August 7, 1975

General Offices: 212 West Michigan Avenue, Jackson, Michigan 49201 • Area Code 517 788-0550

Division of Reactor Licensing  
US Nuclear Regulatory Commission  
Washington, DC 20555

DOCKET 50-255, LICENSE DPR-20  
PALISADES PLANT, UE 75-7 AND UE 75-8

Attached is a report covering Unusual Events UE 75-7 and UE 75-8. These events concern driving type failures of CRDM No 14 and CRDM No 33. Both control rods, however, could be tripped.

Ralph B. Sewell (Signed)

Ralph B. Sewell  
Nuclear Licensing Administrator

CC: JGKeppler, USNRC  
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UNUSUAL EVENT REPORT  
Palisades Nuclear Plant

1. Report Number: UE 75-7, UE 75-8 50-255
- 2a. Report Date: August 7, 1975
- 2b. Occurrence Date: July 27, 1975
3. Facility: Palisades Nuclear Plant, Covert, Michigan
4. Identification of Occurrence: UE 75-7 - CRDM No 14 failure to move during exercising. UE 75-8 - CRDM No 33 failure to insert.
5. Conditions Prior to Occurrence: CRDM No 14 - Plant was at the steady state power level of 80%. CRDM No 33 - Plant was decreasing in power level to come down to the shutdown condition.
6. Description of Occurrence: On July 27, 1975 control rod exercising (Tech Spec Test, Reference 4.2.2-2, Frequency - two weeks) revealed that CRDM No 14 would not respond to either an insert or a withdrawal signal. During the decrease in power to the plant shutdown condition CRDM No 33 would not insert. CRDM No 33 would withdraw. Both rods, however, could be tripped.
7. Apparent Cause of Occurrence: During the shutdown period, the brakes on CRDM No 14 and CRDM No 33 were disassembled and inspected. The outer shafts (rotating elements) were found to be secure. However, during the inspections particles from the brake linings were found to be between the brake coil and the stationary shaft. The brake components were then cleaned and reassembled. The CRDM were then tested and were found to operate satisfactorily.
8. Analysis of Occurrence: The plant was shut down in accordance with Section 3.10.4.b of Tech Spec. This section reads, "If more than one Control Rod or part length rod becomes misaligned or inoperable, the reactor shall be placed in the hot shutdown condition within 12 hours." Previous to this incident CR No 27 was labeled inoperative, therefore, constituting two inoperable control rods. Prior to plant shutdown, CRDM No 14 was checked from the CRDM electrical Panel C-15. The problem was not uncovered during this check. During the decrease in power, CRDM No 33 did not respond to an insert signal. This indicated a third control rod was "inoperable" (by the Tech Spec definition).
9. Corrective Action:
  - a. CRDM No 14 and CRDM No 33 brake assemblies were disassembled and cleaned. The brakes were reassembled and tested. The control rods performed satisfactorily after this action was taken.
  - b. Inspect all 45 CRDM brake assemblies during the next available opportunity. This inspection should include checking for cleanliness and important critical dimensions.

10. Failure Data:

- a(1) CRDM No 14 and CRDM No 33 were manufactured by Combustion Engineering, Inc. The piece number is J-2966-163-001.
- a(2) The synchronous gear brake motors were manufactured by IMC Magnetics, Corp, Eastern Division, 570 Main Street, Westbury, NY 11591. The motors have CE piece No CND-SD-2108.
- b. Motor brake problems have occurred in the past at Palisades on the CRDM motors. The problems found in the past were excessive motor end play and the rotating element was found to be loose on the rotor shaft.