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BBS Ltr. #69-74



Dresden Nuclear Power Station
 R. R. #1
 Morris, Illinois 60450
 February 3, 1975

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

Regulatory File Cy.

SUBJECT: REPORT OF ABNORMAL OCCURRENCE PER SECTION 6.6.A OF THE TECHNICAL SPECIFICATIONS WITHDRAWAL OF TWO ADJACENT CONTROL BLADES DURING CONTROL ROD DRIVE OVERHAUL

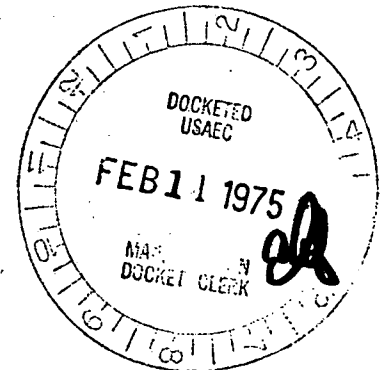
- References:
- 1) Regulatory Guide 1.16 Rev. 1 Appendix A
 - 2) Notification of Region III of AEC Regulatory Operations
 Telephone: Mr. P. Johnson, 1530 hours on January 27, 1975
 Telegram: Mr. J. Keppler, on January 27, 1975
 - 3) DPR-19, Section 3.10.D of Technical Specifications
 - 4) Dresden Station Procedure No. 300-11, CRD Replacement
 - 5) Letter 264 75 01 035 to R. A. Hanvelt from J. L. Rash dated January 28, 1975 (Attachment)

Report Number: 50-237/75-10

Report Date: February 3, 1975

Occurrence Date: January 25, 1975

Facility: Dresden Nuclear Power Station, Morris, Illinois



IDENTIFICATION OF OCCURRENCE

At approximately 0500 hours on January 25, 1975 two adjacent control blades were inadvertently withdrawn to position 48 during control rod drive overhaul. The technical specification governing control rod motion during refuel is Section 3.10.D.

CONDITIONS PRIOR TO OCCURRENCE

At the time of the occurrence, Unit 2 was in the EOC-3 refueling outage with the mode switch locked in the shutdown position. Control rod drive (CRD) overhaul was in progress.

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DESCRIPTION OF OCCURRENCE

During the CRD overhaul, CRD 10-35 was removed for repairs. A repaired drive was installed at 10-35 and an attempt was then made to remove drive 18-11. The uncoupling tool for drive 18-11 failed to indicate that the drive had uncoupled from the blade when an attempt was made at uncoupling it. The drive probe was re-installed and gave indication that the drive had uncoupled. Shift personnel on duty then issued a temporary procedure change to allow the General Electric maintenance crew to skip drive 18-11 and proceed to the next step which was drive 6-35. At this time drive 10-35 had not been valved-in service vented and re-inserted to position 00. Normally the repaired drive is valved-in service after the drive in the next step is withdrawn and valved out of service. In this case drive 18-11 was withdrawn valved-out of service, then valved back in service and drive 6-35 was withdrawn and valved-out of service before drive 10-35 could be valved-in service and re-inserted.

The operator and shift personnel on duty did not notice that control rod 10-35 was still at position 48 before withdrawing rod 6-35.

There was no substantial increase in the count rate on the SRM's at anytime during the incident. Approximately an hour and a half later, a technical staff person entered the control room and observed that two adjacent drives were withdrawn. At this time drive 10-35 was re-inserted.

DESIGNATION OF APPARENT CAUSE OF OCCURRENCE (Personnel Error)

When the uncoupling tool failed to indicate that drive 18-11 was uncoupled, Shift personnel issued a temporary procedure change to allow the General Electric maintenance crew to proceed to the next step in the CRD replacement procedure to verify if their uncoupling tool was operating correctly. This temporary procedure change violated the intent of the original procedure. At this point CRD 10-35 had not yet been valved in. Service Drive 18-11 was then valved in service and drive 6-35 was withdrawn and valved out of service. All personnel involved failed to note that two adjacent control rods would be withdrawn with the implementation of the temporary procedure change. The control rod 06-35 was subsequently withdrawn.

ANALYSIS OF OCCURRENCE


The safety of the plant and public was not in jeopardy during the withdrawal of control rods 10-35 and 6-35. An evaluation of the reactivity worth of control rods 30-31 and 30-35, at BOC-4 in cold shutdown condition, by General Electric Company, indicates that the reactor is subcritical by 1.34%. These two control rods are the highest worth control rods in the reactor at BOC4. Since control rods 6-35 and 10-35 are not as high worth rods as 30-31 and 30-35, the reactor was subcritical by greater than 1.34% K. Attached is a copy of the letter from J. L. Rash to R. A. Hanvelt concerning BOC-4 cold shutdown margin data. All equipment and safety systems functioned normally during the occurrence. The SRM's showed no substantial increase in the count rate. The procedure for the CRD replacement had been written such that if a step in the procedure was skipped, the next CRD to be removed would be adjacent to the CRD withdrawn previously. The procedure also stated that two CRD's could be pulled only if separated by two or more control cells. This separation criterion was not followed by the shift personnel when the temporary procedure change was issued. Had two steps been skipped, the control rods would have been separated by four control cells.

There was no damage to any systems or structures because of this incident. No personnel received injuries or exposure and no radioactive material was released during the incident.

CORRECTIVE ACTION

The immediate corrective action was to insert drive 10-35. A temporary procedure change was subsequently issued instructing the operators to verify that any procedure changes will not result in a control rod being pulled within four cells of any withdrawn control rod. Shift personnel were instructed to follow this four cell criterion.

In the future station nuclear engineers will review procedures involving control rod movement. The control rod drive replacement procedure will also be modified in the future so that several steps may be skipped without violating the separation criteria.


B. B. Stephenson
Superintendent

BBS:ERP:smp

File/AEC