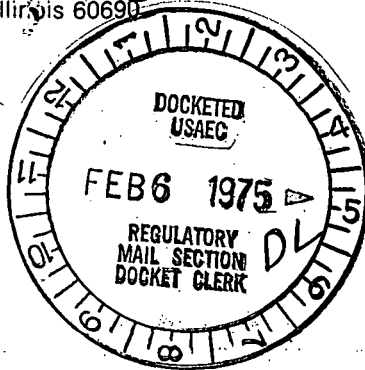




Commonwealth Edison
One First National Plaza Chicago, Illinois
Address Reply to: Post Office Box 767
Chicago, Illinois 60690

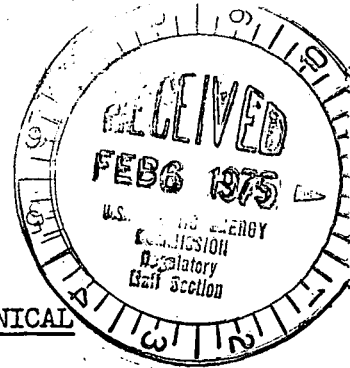
Regulatory Docket File

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. 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
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At approximately 0500 hours on January 25, 1975 two adjacent control blades were inadvertently withdrawn to position 48 during control rod drive overhaul.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.

1390

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

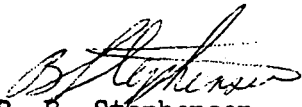
The safety of the plant and public was not in jeopardy during the withdrawal of control rods 10-35 and 6-35. An evaluation of the reactivity worth of control rods 30-31 and 30-35, at BOC-4 in cold -shutdown condition, by General Electric Company, indicates that the reactor is subcritical by 1.34%. These 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

264 75 01 035

BWR SYSTEMS DEPARTMENT
San Jose, California

Received w/ Ltr Dated 2-3-75

22 January 1975

cc: H. A. Branner
G. C. Fallmer
J. F. Henning
E. J. Ramesberg

To: R. A. Harvelt

From: J. L. Bash

Subject: DRESDEN 2 ROC-4 COLD SHUTDOWN MARGIN DATA

Following, for transmittal to the customer, are results of cold shutdown margin calculations for Dresden 2, ROC-4, as loaded:

Maximum Worth Rod: H-8 (center)

k effective

All Rods In:	0.9276
H-8 Withdrawn:	0.9596
H-8 & H-9 Withdrawn:	0.9856
H-8, H-9, H7 withdrawn:	1.0001

This information will be documented in the Core Management Plan for Cycle 4. It is being supplied to Edison ahead of schedule for use in analyzing the recent withdrawal error (H-8 & H-9 were simultaneously withdrawn for O&D work).

Copies of the transmittal should be sent to B. B. Stephenson and Ed Petroski at the Dresden station.

This data was generated using methods proprietary to GE and should be treated as GE PROPRIETARY by Edison.

[Signature]
J. L. Bash

Core Management Engineering, Group II
NYC 156 Ext. 6602

8-323-0111
815-992-2920

[Handwritten] 17m-4697



(MUST NOT CHANGE INTENT OF PROCEDURE)

Regulatory Docket File

Received w/ Ltr Dated 2-3-75

PROCEDURE TITLE CRD REPLACEMENT

NUMBER 300-11

REQUEST CHANGE FROM SHIFT ENGINEER

Termination Date When Completed

By PASS CRD #18-11: Tool will NOT GIVE INDICATING LIGHT THAT DRIVE IS UN COUPLED. Tool checked Twice. DRIVE PROBE RE-INSTALLED CONTROL ROOM INDICATED UN COUPLED.

Reason for change CHECK TOOL ON NEXT CRD
06-35

$$1/25/75$$

REQUESTOR & DATE

Shift Engineer: Check box for affected responsibility, obtain approvals, retain one copy and send second copy to Station Review; mark termination date on change request after end of job and send terminated change request to Station Review.

~~Operations~~

☐ Mechanical or Electrical Maintenance

**SENIOR REACTOR OPERATOR
(DRESDEN & Q.C. ONLY)**

MASTER MECHANIC

MAINTENANCE FOREMAN

☐ Instrument Maintenance

**SENIOR REACTOR OPERATOR
(DRESDEN & Q.C. ONLY)**

INSTRUMENT MAINT. ENG.

INSTRUMENT MAINT. FOREMAN

☐ **Technical Staff** (ZION ONLY)

TECHNICAL STAFF SUPERVISOR

COGNIZANT TECHNICAL STAFF PERSON

☐ Permanent Procedure Change Needed

Acceptance By Station Review

Date**Requested**

Approved

Authorized

DATE _____

DATE _____

STATION SUPERINTENDENT & DATE