

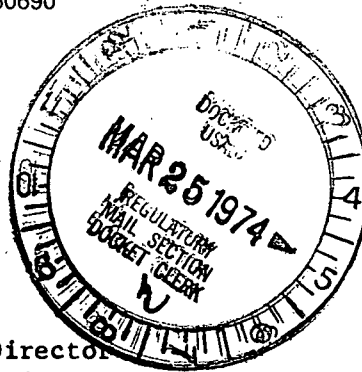


**Commonwealth Edison**  
 One First National Plaza, Chicago, Illinois  
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 Chicago, Illinois 60690

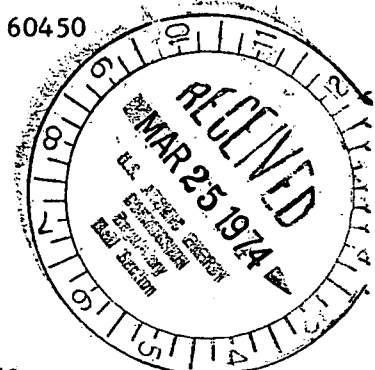
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BBS Ltr.#207-74

**Regulatory Docket File**



Dresden Nuclear Power Station  
 R. R. #1  
 Morris, Illinois 60450  
 March 21, 1974



Mr. J. F. O'Leary, Director  
 Directorate of Licensing  
 U. S. Atomic Energy Commission  
 Washington, D. C. 20545

**SUBJECT: LICENSE DPR-19, DRESDEN NUCLEAR POWER STATION, UNIT #2, REPORT OF ABNORMAL OCCURRENCE PER SECTION 6.6.B.1.a OF THE TECHNICAL SPECIFICATIONS. UNCOUPLING OF CONTROL ROD DRIVE B-11**

- References: 1) Notification of Region III of AEC Regulatory Operations  
 Telephone: Mr. F. Maura, 1410 hours on March 14, 1974.  
 Telegram: Mr. J. Keppler, 1600 hours on March 14, 1974.
- 2) Dwgs: P&ID M-34.

Dear Mr. O'Leary:

This letter is to report a condition relating to the operation of the unit at about 0134 hours on March 14, 1974. A routine 25 control rod drive (CRD) scram test was being conducted to satisfy the two(2) week requirement of Section 4.3.C.3 of the Technical Specifications. CRD B-11 while being withdrawn to position "48", subsequent to scrambling, went into an overtravel condition. The overtravel indication is indicative of an uncoupled CRD. This malfunction is contrary to section 3.3.B.1 of the Technical Specifications which requires that each control rod shall be coupled to its drive or completely inserted and the control rod directional or control valves disarmed electrically.

**PROBLEM**

Unit #2 was operating at 327 MWe. Routine surveillance testing had been completed and 25 control rod drive scram testing had begun. Rod B-11 was successfully scram tested with a 90% insertion time of 3.01 seconds. At 0134 hours on March 14, 1974 while in the process of withdrawing the drive to position "48", a "rod overtravel" alarm annunciated and both the four rod and full core displays for the rod went blank. At 0222 hours, the drive was given a continuous withdraw signal which cleared the overtravel alarm and returned the position "48" indication. The drive was subsequently inserted and withdrawn in 6 notch increments. TIP traces were taken to verify that the blade followed the CRD. In addition, the drive was given a continuous withdraw signal at "48" to verify it had recoupled.

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At 1103 hours, the CRD was scrambled three (3) times to see if the uncoupling could be duplicated. The drive was scrambled successfully two (2) times. However, after the third scram, while withdrawing, the drive went to overtravel. This time, friction testing equipment was set-up to determine the pressure drop across the drive which would indicate if the CRD had uncoupled. At 1530 hours friction testing was initiated. The trace clearly shows the blade was uncoupled (Fig.1). The test was conducted by slowly increasing the drive water pressure to approximately Pr+50 psig. During the tests, the drive recoupled. At 1725 hours, the CRD was coupled and inserted to position "00". Drive B-11 (06-43) was disarmed and taken out of service at 1905 hours.

### INVESTIGATION

CRD flange no. 761C was overhauled and placed in position B-11 during the spring 1972 refueling outage. Scram times prior to the overtravel and during attempts to uncouple a second time plus a withdraw stall flow are listed below:

<u>DATE</u>	<u>INSERT TIMES (Sec.)</u>						<u>Buffer</u>
	<u>5%</u>	<u>10%</u>	<u>20%</u>	<u>50%</u>	<u>90%</u>	<u>100%</u>	
2-10-74	0.36	0.54	0.81	1.76	3.05	3.65	0.43
3-4-74	0.34	0.50	0.79	1.75	3.03	3.64	0.43
3-14-74	0.32	0.49	0.77	1.73	3.01	3.62	0.43
3-14-74	0.33	0.49	0.76	1.69	2.95	3.55	0.43
3-14-74	0.30	0.46	0.74	1.68	2.95	3.54	0.42
3-14-74	0.34	0.50	0.77	1.72	2.98	3.58	0.42

Withdraw stall flow for B-11 on 2-10-74 was 2.2 gpm.

A review of the data indicates no abnormal conditions.

### CORRECTIVE ACTIONS

The corrective action taken was to couple the CRD, insert it to position "00", electrically disarm it and take it out of service at 1905 hours March 14, 1974.

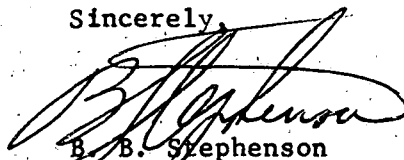
The control rod drive will be removed during the next extended maintenance outage. At that time, a thorough inspection will be made to determine the mode of failure and a follow-up letter submitted to your office.

March 21, 1974

EVALUATIONS

This drive uncoupling did not endanger public health or safety because the blade was capable at all times of being inserted into the reactor core. Additionally, the drive recoupled whenever it was given an insert signal. This uncoupling phenomenon occurred once before, February 19, 1973. At that time, three(3) CRDs experienced uncoupling during reactor startup. The anomaly was explained as having occurred because of dislocated inner filters. At this time the failure mechanism is not known, therefore, a follow-up letter will be issued subsequent to B-11's overhaul.

Sincerely,



B. B. Stephenson  
Superintendent

BBS:MST:do