Exelon Generation Company, LLC Dresden Nuclear Power Station 6500 North Dresden Road Morris, IL 60450–9765 www.exeloncorp.com



10 CFR 50.73

SVPLTR # 11-0012

March 16, 2011

U. S. Nuclear Regulatory Commission ATTN: Document Control Desk Washington, DC 20555-0001

> Dresden Nuclear Power Station, Unit 3 Renewed Facility Operating License No. DPR-25 NRC Docket No. 50-249

Subject: Licensee Event Report 249/2011-001-00, Control Rod Block Instrumentation Failure

Enclosed is Licensee Event Report 249/2011-001-00, Control Rod Block Instrumentation Failure. This event is being reported in accordance with 10 CFR 50.73(a)(2)(i)(B), Any operation or condition which was prohibited the plant's Technical Specifications.

There are no regulatory commitments contained in this submittal.

Should you have any questions concerning this letter, please contact Mr. Dennis Leggett at (815) 416-2800.

Respectfully,

Tim Hanley Site Vice President Dresden Nuclear Power Station

Enclosure

cc: Regional Administrator – NRC Region III NRC Senior Resident Inspector – Dresden Nuclear Power Station

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Bob Rybak – Regulatory Specialist       815-416-2810         IS COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT         CAUSE       SYSTEM       COMPONENT       MANU- FACTURER       REPORTABLE TO EPIX       CAUSE       SYSTEM       COMPONENT       REPORTABLE TO EPIX         X       JD       69       G080       III.       III.       SUBMISSION       DAY       YEAR         WES (If yes, complete 15. EXPECTED SUBMISSION DATE)       INO       III.       NONTH       DAY       YEAR         ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)       On January 15, 2011, during control rod exercising Technical Specifications surveillance testing on Dresden Nuclear Power Station, (DNPS) Unit 3, it was observed by control room personnel, that at times, the Rod Block Monitor (RBM) [JD] count circuit appeared to display too many local power range monitor (LPRM) [JD] inputs when a control rod drives (CRDs) that apply three LPRM strings for signal determination). This situation was not present when a CRD was selected that had either two or four LPRM string associated with it. Based on the information at the time, the crew determined that the RBM remained operable to meet Tech Spec function.         However, during troubleshooting of these RBM anomalies associated with CRDs with three associated LPRM string assignments, it was determined on January 21, 2011, that both RBM trains were inoperable and a channel was placed in trip due to a failed circuit card diode which allowed the RBM count circuit to be non-conservative. The failed card was replaced on January 21, 2011 and	NAME						12. LICEN	SEE CON	FACT F	OR TH	IS LER	]TI			(Inclue	e Area	Code)
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NRC FORM 366A (10-2010)

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE		
Dreaden Nuclear Dewar Station Unit 2	05000249	YEAR	SEQUENTIAL NUMBER	REV NO.	2	05	2
Dresden Nuclear Power Station, Unit 3		2011	- 001 -	00		OF	3

NARRATIVE

## PLANT AND SYSTEM IDENTIFICATION

Dresden Nuclear Power Station (DNPS) Unit 3 is a General Electric Company Boiling Water Reactor with a licensed maximum power level of 2957 megawatts thermal. The Energy Industry Identification System codes used in the text are identified as [XX].

#### A. <u>Plant Conditions Prior to Event</u>:

Unit: 03	Event Date: 01-15-2011	Event Time: 1216 hours CST
Reactor Mode: 1	Mode Name: Power Operation	Power Level: 100 percent

#### B. <u>Description of Event</u>:

On January 15, 2011, during Technical Specifications (TS) surveillance testing of the control rod exercising on Dresden Nuclear Power Station, (DNPS) Unit 3, it was observed by control room personnel, that at times, the rod block monitor (RBM) would indicate more local power range monitors (LPRMs) than expected.

The RBM count circuit appeared to not bypass LPRM inputs for some three LPRM string CRDs (a fourth LPRM string was included for several CRDs that apply three LPRM strings for signal determination). This situation was not present when a control rod was selected that had either two or four LPRM strings associated with it. Based on the information at the time, the crew determined that the RBM remained operable to meet the TS function.

However, during subsequent troubleshooting of the RBM anomalies associated with CRDs with three associated LPRM string assignments, it was determined on January 21, 2011, that both RBM trains were inoperable which required a channel be placed in trip to comply with TS 3.3.2.1.

The RBM is designed to monitor local power using two to four LPRM strings that are in the local area while a CRD is being withdrawn. The number of LPRM strings utilized is based on CRD location within the core. The RBM is required to be operable in MODE 1 when reactor thermal power is greater than or equal to 30 percent and no peripheral control rod is selected per TS 3.3.2.1. The design of the system is to block CRD withdrawal during a Rod Withdrawal Error (RWE) to prevent exceeding the minimum critical power ratio (MCPR) safety limit. The RBM function is not credited by the RWE analysis and therefore the safety significance is minimal.

# C. Cause of Event:

A failed diode on a relay card for RBM 8 allowed LPRMs 48-17, 48-25, and 56-25 to be counted into the RBM circuitry along with the normally selected LPRMs for certain control rods that normally utilize only three LPRM strings. This rendered the RBM INOP count circuit non-conservative with extra LPRM inputs being detected on scale that should not have been counted. This problem was unique only to certain three LPRM string CRDs. A causal investigation will be performed to determine why operations personnel did not identify that the RBM was inoperable.

NRC FORM 366A

(10-2010)

U.S. NUCLEAR REGULATORY COMMISSION

1. FACILITY NAME	2. DOCKET	6	3. PAGE				
Dreaden Nuclear Dewar Station Unit 2	05000249	YEAR	SEQUENTIAL NUMBER	REV NO.	2	05	2
Dresden Nuclear Power Station, Unit 3		2011	- 001 -	00	3	UF	3

NARRATIVE

# D. Safety Analysis:

The design of the RBM system is to block CRD withdrawal during a RWE to prevent exceeding the MCPR safety limit. Since the RBM upscale rod block is not credited in the analysis of a rod withdrawal error, the safety significance of the failure of the relay card is minimal. Therefore, health and safety of the public was not compromised as a result of this condition.

# E. <u>Corrective Actions</u>:

- The failed relay card was replaced.
- A causal investigation will be performed to determine why operations personnel did not identify that the RBM was inoperable.

# F. <u>Previous Occurrences</u>:

A review of DNPS Licensee Event Reports (LERs) for the last three years did not identify any LERs associated with control rod block inoperabilities or failures.

### G. <u>Component Failure Data</u>:

Not Applicable