



Exelon Generation®

Dresden Nuclear Power Station

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10 CFR 50.73

SVPLTR # 13-0053

January 6, 2014

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

Dresden Nuclear Power Station, Units 2 and 3
Renewed Facility Operating License Nos. DPR-19 and DPR-25
NRC Docket Nos. 50-237 and 50-249

Subject: Licensee Event Report 237/2013-004-00, Secondary Containment Inoperable
Due to Two Interlock Doors Being Open Simultaneously

Enclosed is Licensee Event Report 237/2013-004-00, Secondary Containment Inoperable Due to Two Interlock Doors Being Open Simultaneously. This report describes an event which is being reported in accordance with 10 CFR 50.73(a)(2)(v)(C), any event or condition that could have prevented the fulfillment of the safety function of structures or systems that are needed to control the release of radioactive material.

There are no regulatory commitments contained in this submittal.

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

Respectfully,

Shane M. Marik
Site Vice President
Dresden Nuclear Power Station

Enclosure: Licensee Event Report 237/2013-004-00

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

IE22
NRR

LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

Estimated burden per response to comply with this mandatory collection request: 80 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the FOIA/Privacy Section (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects.resource@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

1. FACILITY NAME Dresden Nuclear Power Station, Unit 2	2. DOCKET NUMBER 05000237	3. PAGE 1 OF 3
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4. TITLE
Secondary Containment Inoperable Due to Two Interlock Doors Being Open Simultaneously

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO.	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
11	05	2013	2013	- 004 -	00	01	06	2014	Dresden Unit 3	05000249
									FACILITY NAME	DOCKET NUMBER
									N/A	05000

9. OPERATING MODE 1	11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)			
10. POWER LEVEL 092	<input type="checkbox"/> 20.2201(b)	<input type="checkbox"/> 20.2203(a)(3)(i)	<input type="checkbox"/> 50.73(a)(2)(i)(C)	<input type="checkbox"/> 50.73(a)(2)(vii)
	<input type="checkbox"/> 20.2201(d)	<input type="checkbox"/> 20.2203(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)
	<input type="checkbox"/> 20.2203(a)(1)	<input type="checkbox"/> 20.2203(a)(4)	<input type="checkbox"/> 50.73(a)(2)(ii)(B)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)
	<input type="checkbox"/> 20.2203(a)(2)(i)	<input type="checkbox"/> 50.36(c)(1)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(ix)(A)
	<input type="checkbox"/> 20.2203(a)(2)(ii)	<input type="checkbox"/> 50.36(c)(1)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(iv)(A)	<input type="checkbox"/> 50.73(a)(2)(x)
	<input type="checkbox"/> 20.2203(a)(2)(iii)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(v)(A)	<input type="checkbox"/> 73.71(a)(4)
	<input type="checkbox"/> 20.2203(a)(2)(iv)	<input type="checkbox"/> 50.46(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(v)(B)	<input type="checkbox"/> 73.71(a)(5)
	<input type="checkbox"/> 20.2203(a)(2)(v)	<input type="checkbox"/> 50.73(a)(2)(i)(A)	<input checked="" type="checkbox"/> 50.73(a)(2)(v)(C)	<input type="checkbox"/> OTHER
	<input type="checkbox"/> 20.2203(a)(2)(vi)	<input type="checkbox"/> 50.73(a)(2)(i)(B)	<input type="checkbox"/> 50.73(a)(2)(v)(D)	Specify in Abstract below or in NRC Form 366A

12. LICENSEE CONTACT FOR THIS LER

NAME Glen Morrow – Regulatory Assurance Manager	TELEPHONE NUMBER (Include Area Code) 815-416-2800
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13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT

CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX
X	NG	IMEC	N/A	Y					

14. SUPPLEMENTAL REPORT EXPECTED			15. EXPECTED SUBMISSION DATE		
<input type="checkbox"/> YES (If yes, complete 15. EXPECTED SUBMISSION DATE) <input checked="" type="checkbox"/> NO			MONTH	DAY	YEAR

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)

On November 05, 2013, control room operators received a control room alarm indicating that the Unit 2 interlock doors were open simultaneously. A door operator operated the turbine side door hand switch allowing personnel traffic to enter the interlock. Simultaneously, the reactor building side door swung open. With two interlock doors open simultaneously, Technical Specifications 3.6.4.1, Surveillance Requirement 3.6.4.1.2, was not met. With the Surveillance Requirement not met, Secondary Containment was declared inoperable, and entry into Technical Specifications 3.6.4.1 Condition A was made. The doors were immediately closed and the Technical Specifications Condition was exited. The apparent cause evaluation identified that the apparent cause of this event was an inadequate design specification of a limit switch.

Based upon the short duration of the secondary containment doors being opened simultaneously and that the Secondary Containment differential pressure remained negative during the course of this event, this event is of low safety significance.

This event is being reported in accordance with 10 CFR 50.73(a)(2)(v)(C), any event or condition that could have prevented the fulfillment of the safety function of structures or systems that are needed to control the release of radioactive material.

**LICENSEE EVENT REPORT (LER)
CONTINUATION SHEET**

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
Dresden Nuclear Power Station, Unit 2	05000237	YEAR	SEQUENTIAL NUMBER	REV NO.	2 OF 3
		2013	- 004 -	00	

NARRATIVE

PLANT AND SYSTEM IDENTIFICATION

Dresden Nuclear Power Station (DNPS) Units 2 and 3 are General Electric Company Boiling Water Reactors 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. Plant Conditions Prior to Event:

Unit: 02	Event Date: 11-05-2013	Event Time: 0842 hours CDT
Reactor Mode: 1	Mode Name: Power Operation	Power Level: 092 percent
Unit: 03	Event Date: 11-05-2013	Event Time: 0842 hours CDT
Reactor Mode: 1	Mode Name: Power Operation	Power Level: 100 percent

B. Description of Event:

On 11/05/2013, Operators received a control room alarm indicating that the Unit 2 Reactor Building [NG] to Turbine Building [NM] interlock doors had been opened simultaneously. A door operator was staged in the interlock at the time of the event and verified both doors had momentarily opened simultaneously (i.e., about one second). At the time of the event, a door operator pressed the turbine side door hand switch allowing personnel traffic to enter the interlock. Simultaneously, the reactor building side door swung open and immediately returned back to the secure position.

This event is being reported in accordance with 10 CFR 50.73(a)(2)(v)(C), any event or condition that could have prevented the fulfillment of the safety function of structures or systems that are needed to control the release of radioactive material.

C. Cause of Event:

An initial troubleshooting walk-down of the interlock doors was performed by Engineering, Maintenance, and Operations. The walk-down identified that the reactor building side door magnets had lost their latching strength and that the door could be easily opened with the magnets energized. Upon further evaluation, the magnets were not making solid contact with the door causing this symptom. The magnets are adjustable and are designed to float horizontally within the frame to allow solid contact with door. The magnets were adjusted to allow more horizontal float in order to make full contact with the door thus eliminating the weak latching symptom.

Further engineering troubleshooting identified the magnets had not come out of adjustment, but instead a newly installed limit switch was physically interfering with the door. Maintenance was performed that replaced the LS-2 limit switch. The newly installed limit switch is approximately 0.150 inch wider than the previously installed mechanically deformed switch. Due to the design configuration of the limit switch, this size difference caused the door to make physical contact with limit switch before making flush contact with the magnets in the door frame. The distance between the magnets and the door caused inadequate latching strength.

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NARRATIVE

A known design vulnerability exists in the U2(3) 517' RB-TB interlock door control logic. The fundamental design of the interlock circuit does not incorporate an exclusive-or logic (XOR) scheme. This means if both doors receive a signal to open at precisely the same time, the logic could allow both doors to open. Simultaneous pushing of the buttons was verified, in both events, to have not occurred by the door operator staged in the interlock. Although this was not an apparent cause of these events, this is a system vulnerability that could lead to an interlock door failure.

Upon review of the interlock circuit logic design and system performance, engineering has determined a more robust interlock circuit is required to obtain desired performance. A modification is required to remove system single point vulnerabilities and incorporate redundant mechanical latching mechanisms.

D. Safety Analysis:

The Secondary Containment interlock doors were open for approximately one second. Based upon the short duration of the secondary containment doors being opened simultaneously and that the Secondary Containment differential pressure remained negative during the course of this event, this event is of low safety significance.

E. Corrective Actions:

As a result of the secondary containment events, site engineering performed an apparent cause evaluation that identified the need to develop a modification to improve the interlock door circuit. Dresden engineering has completed the engineering change, and a modification is currently in process.

F. Previous Occurrences:

A search was performed to determine the number of previous occurrences for this event over the past two years. The following table presents these results for the Unit 2 Interlock:

IR	Date	Sort Description
1305358	12/21/2011	Unit 2 Reactor Building/Turbine Building Interlock Failure
1381599	6/25/2012	Unit 2 Reactor Building/Turbine Building Interlock Failure
1387354	7/11/2012	Unit 2 Reactor Building/Turbine Building Interlock Failure

The search revealed that there were 3 prior occurrences, within the past two years, that specifically relate to a failure of the Unit 2 Interlock.

G. Component Failure Data:

N/A