



Dresden Nuclear Power Station

6500 North Dresden Road  
Morris, IL 60450

815-942-2920 Telephone  
www.exeloncorp.com

10 CFR 50.73

SVPLTR # 14-0003

January 15, 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 237/2013-007-00, Secondary Containment Inoperable  
Due to Two Interlock Doors Being Open Simultaneously

Enclosed is Licensee Event Report 237/2013-007-00, 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,

A handwritten signature in black ink, appearing to read "S M Marik".

Shane M. Marik  
Site Vice President  
Dresden Nuclear Power Station

Enclosure: Licensee Event Report 237/2013-007-00

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

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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.

<b>1. FACILITY NAME</b> Dresden Nuclear Power Station, Unit 2	<b>2. DOCKET NUMBER</b> 05000237	<b>3. PAGE</b> 1 OF 4
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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	16	2013	2013	- 007 -	00	01	15	2014	Dresden Unit 3	05000249
									FACILITY NAME	DOCKET NUMBER
									N/A	05000

<b>9. OPERATING MODE</b>  5	<b>11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §:</b> <i>(Check all that apply)</i>									
<b>10. POWER LEVEL</b>  000	<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 <i>(Include Area Code)</i> 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					

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

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

At 10:19:02 CST on November 16, 2013, indication was received in the Control Room that two Secondary Containment doors, in one access opening, were open simultaneously. A worker, staged in the interlock, reported that while opening the Reactor Building side door the Turbine Building side door opened several inches. 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 interlock circuit relay malfunction. Dresden engineering has completed the engineering change, and the modification is currently awaiting installation.

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.

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		2013	- 007	- 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: 11-16-2013	Event Time: 1019 hours CST
Reactor Mode: 5	Mode Name: Refueling	Power Level: 000 percent
Unit: 03	Event Date: 11-16-2013	Event Time: 1019 hours CST
Reactor Mode: 1	Mode Name: Power Operation	Power Level: 100 percent

**B. Description of Event:**

At 10:19:02 CST on November 16, 2013, indication was received in the Control Room that two Secondary Containment [NG] doors, in one access opening, were open simultaneously. A worker, staged in the interlock, reported that while opening the Reactor Building side door the Turbine Building side door opened several inches. The staged worker immediately secured the doors.

An initial troubleshooting walkdown of the interlock doors was performed by Engineering, Maintenance, and Operations. The troubleshooting walkdown did not identify any degraded system components. The interlock was operated approximately fifty cycles and was excessively challenged. An interlock logic failure could not be recreated and the interlock doors performed as designed.

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:**

A review of the electrical schematic diagram was performed to determine the possible failure modes. In order for the event to occur as explained by the staged worker, an inadvertent loss of voltage to the latching magnets had to have occurred. Simultaneous pushing of the buttons and limit switch interference was verified to have not caused this event. A loss of power to the latching magnets could have been caused by a wiring short, inadvertent opening of the emergency switches, a fuse failure, or an intermittent malfunction of a relay.

The failure was determined to not have been caused a wiring short, inadvertent opening of the emergency switches or a fuse failure. All of these components are passive components and are less likely to fail intermittently than a component that requires actuation. The exposed wiring terminals were visually inspected and show no obvious signs of degradation. The emergency switches were visually inspected and were verified to not have been pressed throughout this event. Additionally, the emergency switch contacts are normally closed and require manual action to break the contacts.

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**NARRATIVE**

Therefore, it was determined that the failure of the interlock to function properly was do to a relay malfunction within the interlock circuit.

**D. Safety Analysis:**

As discussed in NUREG-1465, "Accident Source Terms for Light-Water Nuclear Power Plants," the coolant activity phase of a loss of coolant accident begins with a postulated pipe rupture and ends when the first fuel rod has been estimated to fail. For BWRs, the coolant activity phase starts at the initiation of the accident and continues for the first two minutes following the accident. During this phase, the only activity released to the containment atmosphere is that associated with very small amounts of radioactivity dissolved in the coolant itself. The amount of radioactivity in the coolant itself is limited by Standard Technical Specifications 3.4.7, "RCS Specific Activity." The gap activity release phase begins when fuel cladding failure commences. This phase involves the release of that radioactivity that has collected in the gap between the fuel pellet and cladding. This process releases to containment a few percent of the total inventory of the more volatile radionuclides, particularly noble gases, iodine, and cesium. During this phase, the bulk of the fission products continue to be retained in the fuel itself.

As discussed in NRC Regulatory Guide 1.183, "Alternative Radiological Source Terms for Evaluating Design Basis Accidents at Nuclear Power Reactors," which is based upon NUREG-1465, the gap release phase for BWRs starts two minutes following initiation of the accident, and continues until the early in-vessel release phase which starts 30 minutes following initiation of the accident.

The Bases for Standard Technical Specifications 3.6.4.1, "Secondary Containment," states that there are two principal accidents for which credit is taken for secondary containment operability. These are a loss of coolant accident (LOCA) and a fuel handling accident involving handling recently irradiated fuel.

Based on the information above, for BWR plants that have adopted an alternative source term in accordance with 10 CFR 50.67, "Accident source term," using the methodology described in NRC Regulatory Guide 1.183, no activity releases are assumed to occur for the first two minutes following initiation of the LOCA.

The Secondary Containment interlock doors were open for approximately five seconds. 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 the modification is currently awaiting installation.

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**NARRATIVE**

**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
1581320	11/5/2013	Unit 2 Reactor Building/Turbine Building Interlock Failure

The search revealed that there were 4 prior occurrences, within the past two years, that specifically relate to a failure of the Unit 2 Interlock.

**G. Component Failure Data:**

N/A