



Dresden Generating Station

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Morris, IL 60450

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10 CFR 50.73

SVPLTR # 15-0061

October 30, 2015

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

Dresden Nuclear Power Station, Unit 2 and 3  
Renewed Facility Operating License Nos. DPR-19 and DPR-25  
NRC Docket No. 50-237 and 50-249

Subject: Licensee Event Report 237/2015-003-00 Unit 2 Turbine Building to Reactor Building Interlock  
Doors Open Simultaneously

Enclosed is Licensee Event Report 237/2015-003-00, "Unit 2 Turbine Building to Reactor Building Interlock Doors 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. Bruce Franzen at (815) 416-2800.

Respectfully,

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

Shane M. Marik  
Site Vice President  
Dresden Nuclear Power Station

**Enclosure:** Licensee Event Report 237/2015-003-00

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

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NRR



**LICENSEE EVENT REPORT (LER)**  
(See Page 2 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 and Information Collections Branch (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to [Infocollects.Resource@nrc.gov](mailto: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**  
Unit 2 Turbine Building to Reactor Building Interlock Doors 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
09	04	2015	2015	003	00	10	30	15	Dresden Unit 3	05000249
									FACILITY NAME	DOCKET NUMBER

<b>9. OPERATING MODE</b>	<b>11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)</b>			
1	<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)
10. POWER LEVEL  100	<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**

LICENSEE CONTACT Bruce Franzen – 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
B	NG	DR	N/A	Y					

<b>14. SUPPLEMENTAL REPORT EXPECTED</b> <input type="checkbox"/> YES (If yes, complete 15. EXPECTED SUBMISSION DATE) <input checked="" type="checkbox"/> NO	<b>15. EXPECTED SUBMISSION DATE</b>	MONTH	DAY	YEAR
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**ABSTRACT** (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)

On 9/4/15 at 08:10 CDT, Technical Specification (TS) 3.6.4.1 Condition A was entered when Security received an alarm that the Unit 2 570' Elevation Turbine Building and Reactor Building interlock doors were open. Security confirmed both doors partially open and contacted Operations. Operations personnel were able to reset the door interlock system and fully close both doors. TS 3.6.4.1 Condition A was exited at 08:49 when both doors were verified closed. During this time, Reactor Building Differential Pressure (dp) remained at -0.65 inches water column, in compliance with TS.

The cause of this event has been determined to be a design flaw that allowed simultaneous opening of the doors. Once opened, the interlock pins, designed to prevent opening of one door with the other open, deployed preventing closure of the doors until the interlock mechanism was bypassed.

Corrective actions include closure of the doors, removal of the interlock from use, and future installation of a modification to eliminate the vulnerability.

The safety significance of this event was low. Reactor Building dp was maintained throughout the event. However, due to the inability to immediately close either door, this event is considered a Safety System Functional Failure. The event is being reported under 10 CFR 50.73 (a)(2)(v)(C), "any event or condition that could have prevented the fulfillment of the safety function of ...systems that are needed to control the release of radioactive material".



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

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 and Information Collections Branch (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to [Infocollects.Resource@nrc.gov](mailto: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.

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Dresden Nuclear Power Station, Unit 2	05000237	YEAR	SEQUENTIAL NUMBER	REV NO.	2 OF 4
		2015	- 003	- 00	

**NARRATIVE**

**PLANT AND SYSTEM IDENTIFICATION**

Dresden Nuclear Power Station (DNPS), Unit 2, 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. Plant Conditions Prior to Event:**

Unit: 02                      Event Date: 09-04-2015                      Event Time: 08:10 CDT  
 Reactor Mode: 1            Mode Name: Power Operation                      Power Level: 100 percent

**B. Description of Event:**

On 9/4/15 at 08:10, Security received an alarm that both the U2 Reactor Building (RB) [NG] 570' elevation and the U2 Turbine Building (TB) [NM] 570' elevation interlock doors were open. Upon arrival at the interlock, Security attempted to close the U2 TB side door. Security contacted the Main Control Room (MCR) at 08:35 stating that both U2 RB/TB 570' elevation interlock doors were unintentionally opened simultaneously by workers and were still both sitting approximately 1/2" open.

Operators dispatched to investigate the situation found both doors slightly open with the door locking mechanism latch pins extended. Operators closed both doors a short time later by utilizing the bypass button located on each door's locking mechanism, and an Operations Supervisor verified power was available to both interlock doors. Throughout the duration of the event, RB differential pressure remained at -0.65" water column. TS 3.6.4.1 Condition A Required Action (RA) A.1 was entered at 08:10 CDT when Security received their alarm as Secondary Containment was inoperable. TS 3.6.4.1 Condition A RA A.1 was exited at 08:49 CDT when both doors were verified closed, which restored Secondary Containment to operable status. Secondary Containment was inoperable for 39 minutes.

The safety significance of this event was low. Reactor Building dp was maintained throughout the event. However, due to the inability to immediately close either door, this event is considered a Safety System Functional Failure for Secondary Containment. The event is being reported under 10 CFR 50.73 (a)(2)(v)(C), "any event or condition that could have prevented the fulfillment of the safety function of ...systems that are needed to control the release of radioactive material".

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**NARRATIVE**

**C. Cause of Event:**

The cause of this event has been determined to be a design flaw that allowed simultaneous opening of the doors. Once opened, the interlock pins, designed to prevent opening of one door with the other open, deployed preventing closure of the doors until the interlock mechanism was bypassed. The design of the 570' elevation interlock doors is such that both doors sit in an unlocked position and only become locked on a valid 'open' signal from the opposite door. On an 'open' signal from the opposite door, a solenoid in the overhead door locking mechanism energizes which engages the door locking latch pin through the eyelet tab mounted on the door frame. The solenoid will stay energized keeping the door in a locked position until a valid 'closed' signal is received from the opposite door. On a valid 'closed' signal the solenoid deenergizes allowing the door locking latch pin to disengage and unlock the door. The 'open' and 'closed' signals come from a switch located in the door jamb. There is one known design vulnerability associated with this type of interlocking design. If both doors are opened at the exact same time, neither will be locked out by their associated latch pin. The solenoids and latch pins will still function as designed on a valid 'open' signal from the opposite door, but the timing is such that the doors will already have begun to open before the latch pins can engage to lock the door. Further, if both doors go open simultaneously and the latch pins engage as designed, as occurred in this event, neither door will be able to close until manually reset by an Operator. The latch pins only disengage when a valid 'closed' signal is received from the opposite door. If both doors open at the same time, the latch pins will not lock the opposite door through its eyelet tab, but rather will prevent the door from fully closing due to the pin blocking the eyelet tab. The door locking mechanisms are equipped with bypass buttons that defeat the interlocking function by deenergizing the solenoid and disengaging the latching pin. The bypass feature on the door locking mechanisms allow for re-establishment of Secondary Containment.

**D. Safety Analysis:**

The function of the secondary containment is to contain, dilute, and hold up fission products that may leak from primary containment following a Design Basis Accident (DBA). In conjunction with operation of the Standby Gas Treatment System (SBGT) [BH] and closure of certain valves [V] whose lines penetrate the secondary containment, the secondary containment is designed to reduce the activity level of the fission products prior to release to the environment, and to isolate and contain fission products that are released during certain operations that take place inside primary containment, when primary containment is not required to be operable, or that take place outside primary containment.

Updated Final Safety Analysis Report (UFSAR) Section 6.2.3.1 provides that the safety objective of the secondary containment system, in conjunction with other engineered safeguards and nuclear safety systems, is to limit the release of radioactive materials so that offsite doses resulting from a postulated DBA will remain below 10 CFR 100 guideline values.

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**NARRATIVE**

The safety significance of this event was low. Reactor Building dp was maintained throughout the event. However, due to the inability to immediately close either door, this event is considered a Safety System Functional Failure for Secondary Containment.

**E. Corrective Actions:**

- Bypass of the interlock mechanism and closure of doors
- Removal of the interlock from use until modification can be completed.
- Planned modification of the interlock mechanism to remove the identified vulnerability

**F. Previous Occurrences:**

Previous occurrences with other interlocks between the Reactor Building and Turbine Building had led to previous Licensee Event Reports. These interlocks have been previously modified and prevented recurrence since November 2014. The 570' elevation interlock previously failed in 2008. The corrective action was to re-inforce expectation of visual verification of door position prior to opening an interlock door.

**G. Component Failure Data:**

Manufacturer	Model	S/N	Type
LockTronic	Challenger	1427	Electric Lock