



10 CFR 50.73

RA15-011

April 20, 2015

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

LaSalle County Station, Units 1 and 2  
Facility Operating License Nos. NPF-11 and NPF-18  
NRC Docket Nos. 50-373 and 50-374

Subject: Licensee Event Report 2015-003-00 Secondary Containment Inoperable  
Due to Interlock Doors Open

In accordance with 10 CFR 50.73(a)(2)(v)(C) and (D), Exelon Generation Company (EGC), LLC, is submitting Licensee Event Report Number 2015-003-00 for LaSalle County Station Units 1 and 2.

There are no regulatory commitments in this letter. Should you have any questions concerning this report, please contact Mr. Guy V. Ford, Regulatory Assurance Manager, at (815) 415-2800.

Respectfully,

Harold T. Vinyard  
Plant Manager  
LaSalle County Station

Enclosure: Licensee Event Report

cc: Regional Administrator – NRC Region III  
NRC Senior Resident Inspector – LaSalle County Station

**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, 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**

LaSalle County Station, Unit 1

**2. DOCKET NUMBER**

05000373

**3. PAGE**

1 OF 5

**4. TITLE**

Secondary Containment Inoperable Due to Interlock Doors Open

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
2	17	2015	2015	003	00	04	20	2015	LaSalle County Station, Unit 2	05000374
									FACILITY NAME	DOCKET NUMBER

  

9. OPERATING MODE	11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)			
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	<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 checked="" 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

Joe Kutches, Maintenance Director

## TELEPHONE NUMBER (Include Area Code)

(815) 415-2500

**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	SDC	Y					

**14. SUPPLEMENTAL REPORT EXPECTED**
☐ YES (If yes, complete 15. EXPECTED SUBMISSION DATE)
 ☒ NO
**15. EXPECTED SUBMISSION DATE**

MONTH DAY YEAR

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

On February 17, 2015, Unit 1 was in Mode 1 at 100% power and Unit 2 was in Mode 5 with no fuel movements in progress. Operations with the potential to drain the reactor vessel (OPDRVs) were in progress in the secondary containment on Unit 2. At 1145 hours CST, it was reported that both air-lock doors between the Unit 1 diesel generator corridor and the Unit 1 Reactor Building were open at the same time for approximately 5-10 seconds. While both interlock doors were open, Technical Specification (TS) Surveillance Requirement (SR) 3.6.4.1.2 ("Verify one secondary containment access door in each access opening is closed") was not met. Secondary containment was declared inoperable for the time that both interlock doors were open. TS 3.6.4.1 Required Action (RA) A.1 to restore secondary containment to OPERABLE status within 4 hours was entered and exited at 1145 hours CST on February 17, 2015.

The cause was a failure of a controller circuit card in the door interlock logic. The circuit card was replaced, which restored the interlock functionality. Corrective actions include determining the cause of vendor quality issues with the controller circuit card and replacing the card with a more reliable model.

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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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LaSalle County Station, Unit 1	05000373	2015	- 003	- 00	2 OF 5

**NARRATIVE**

LaSalle County Station Units 1 and 2 are General Electric Company Boiling Water Reactors with 3546 Megawatts Rated Core Thermal Power.

**A. CONDITION PRIOR TO EVENT:**

Unit(s): 1 / 2      Event Date: February 17, 2015      Event Time: 1145 CST  
Reactor Mode(s): 1/5      Mode(s) Name: Power Operation/Refueling      Power Level: 100%/0%

**B. DESCRIPTION OF EVENT:**

On February 17, 2015, Unit 1 was in Mode 1 at 100% power and Unit 2 was in Mode 5 with no fuel movements in progress. Operations with the potential to drain the reactor vessel (OPDRVs) were in progress in the secondary containment on Unit 2. At 1145 hours CST, it was reported that both air-lock doors between the Unit 1 diesel generator corridor and the Unit 1 Reactor Building were open at the same time for approximately 5 -10 seconds.

While both interlock doors were open, Technical Specification (TS) Surveillance Requirement (SR) 3.6.4.1.2 ("Verify one secondary containment access door in each access opening is closed") was not met. Secondary containment was declared inoperable for the time that both interlock doors were open. Actions were immediately taken to suspend OPDRVs in progress. TS 3.6.4.1 Required Action (RA) A.1 to restore secondary containment to OPERABLE status within 4 hours was entered and exited at 1145 hours CST on February 17, 2015.

This occurrence is reportable under 10 CFR 50.73(a)(2)(v)(C) and (D) as an event or condition that could have prevented the fulfillment of the safety function of the structures or systems that are needed to control the release of radioactive material and to mitigate the consequences of an accident. An ENS report was made to the NRC at 1535 hours EST (EN# 50827) on February 17, 2015, pursuant to 10 CFR 50.72(b)(3)(v)(C) and (D).

An Engineering Evaluation has determined this event did not meet the NEI 99-02 definition of a Safety System Functional Failure.

**C. CAUSE OF EVENT:**

Troubleshooting identified the cause of the event as a early, infant failure of the UR2-4 controller card in the door interlock circuit due to manufacturing problems.

**D. SAFETY ANALYSIS:**

The safety significance of this event was minimal. The Reactor Building-to-outside differential pressure remained negative throughout the period that the secondary containment was inoperable. The secondary containment was inoperable for approximately 5-10 seconds, which was significantly less than the four-hour Completion Time to restore the secondary containment to operable status allowed by TS 3.6.4.1 Required Action A.1.

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The function of the secondary containment is to contain, dilute, and hold up fission products that may leak from the primary containment following a Design basis Accident (DBA). Engineering Evaluation (EC 396711) was performed to show that this event had no impact on the safety function associated with secondary containment.

The time that both doors were simultaneously opened was approximately 5-10 seconds. This event did not result in the reactor enclosure differential pressure dropping below the design bases set point of -0.25 inches w.g. Both the inner and outer doors were promptly closed by station personnel which ended the event. This event did not involve any kind of door or airlock material condition preventing door closure. Additionally, both the inner and outer doors were closed by normal expected means and were capable of remaining closed as designed.

The computed dose for EC 396711 was based on the door opening during the 780 second time period prior to Standby Gas Treatment (SBGT) system drawdown and filtration. This discounts the initial 120 seconds of an event where no release takes place, per calculation L-003068, "Re-Analysis of Loss of Coolant Accident (LOCA) Using Alternative Source Terms".

The approximate 5-10 second opening of the secondary containment doors is bounded by calculation L-003068, "Re-Analysis of Loss of Coolant Accident (LOCA) Using Alternative Source Terms". Should an event occur, with both secondary containment doors open simultaneously for 30 seconds or less, this would result in a potential dose increase of approximately 3.85%. The 3.85% decrease in margin is inconsequential in comparison to the 10 CFR 100 regulatory limits.

EC 396711 also evaluated the pressure impact on the secondary containment and the ability of the SBGT system to achieve the TS required negative pressure. The results of the evaluation show SBGT would restore secondary containment pressure within 3 minutes which is well below the 15 minute maximum drawdown time required by TS.

Based on the short duration of door opening (approximately 5-10 seconds), no material condition preventing door closure or maintaining the doors closed and attendance by knowledgeable personnel who closed the doors immediately, the secondary containment safety function was maintained.

**E. CORRECTIVE ACTIONS:**

- The controller circuit card was replaced.
- The failed card, along with cards that had previously not passed pre-installation bench testing, was returned to the vendor for analysis.
- Following the identification of the cause of the premature controller circuit card failures, a more reliable card will be procured.

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**F. PREVIOUS OCCURRENCES:**

LER 2015-001-00

On December 12, 2014, both Units 1 and 2 were in Mode 1 at 100% power with no fuel movements in progress. At 1324 hours CST, it was reported that both air-lock doors of the Unit 2 Reactor Building 710' elevation between the Unit 2 diesel generator corridor and the Unit 2 Reactor Building were open at the same time for approximately 10 seconds. While both interlock doors were open, Technical Specification (TS) Surveillance Requirement (SR) 3.6.4.1.2 ("Verify one secondary containment access door in each access opening is closed") was not met. Secondary containment was declared inoperable for the time that both interlock doors were open. TS 3.6.4.1 Required Action (RA) A.1 to restore secondary containment to OPERABLE status within 4 hours was entered and exited at 1324 hours CST on December 12, 2014.

The cause was a degradation of the door closure mechanism, and the contributing cause was a less than robust design of the door interlock assembly. Corrective actions from the previous occurrences to identify, procure and install a more robust interlock assembly design were in progress at the time of the event. Additional corrective actions, including periodic preventative maintenance to inspect, tighten, and replace fasteners as necessary, were in place but did not preclude this event.

LER 2014-001-00

On February 18, 2014, Unit 1 was in Mode 5 with fuel moves in progress during refueling outage L1R15, and Unit 2 was in Mode 1 at 100% power. At 1820 hours CST, it was reported that both air-lock doors of the Unit 2 Reactor Building 710' elevation between the Unit 2 diesel generator corridor and the Unit 2 Reactor Building were open at the same time for approximately 3 seconds. While both interlock doors were open, Technical Specification (TS) Surveillance Requirement (SR) 3.6.4.1.2 ("Verify one secondary containment access door in each access opening is closed") was not met. Secondary containment was declared inoperable for the time that both interlock doors were open. TS 3.6.4.1 Required Action (RA) C.1 to suspend fuel movements on Unit 1 and RA A.1 to restore secondary containment to OPERABLE status within 4 hours were entered and exited at 1820 CST on February 18, 2014.

The cause of the event was degradation of the door closure mechanism and door frame seal. A contributing cause was a less than robust design of the door interlock assembly. Corrective actions from the previous occurrences to identify, procure and install a more robust interlock assembly design were still in progress at the time of the event. Additional corrective actions included creating a periodic preventative maintenance task to inspect, tighten, and replace fasteners as necessary.

LER 2013-007-01

On October 22, 2013, both Units 1 and 2 were in Mode 1 at 100% power. At 1129 hours CDT, it was reported that both air lock doors on the Unit 1 Reactor Building 710' elevation between the Chemistry Hot Lab and the Reactor Building were open at the same time for approximately 10 seconds. While both interlock doors were open, Technical Specification (TS) Surveillance Requirement (SR) 3.6.4.1.2 ("Verify one secondary containment access door in each access opening is closed") was not met. Secondary containment was declared INOPERABLE for the time that both interlock doors were open. TS 3.6.4.1 Required Action A.1 for both Units 1 and 2 to restore secondary containment to OPERABLE status within 4 hours was entered and exited at 1129 CDT on October 22, 2013.

The cause of the event was a less than robust design of the door interlock assembly. Troubleshooting found that the mounting fasteners that secure the entire locking assembly to the frame of door # 226 (Reactor Building side of the interlock) were loose, which prevented the electro-mechanical solenoid operated bolt from properly

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aligning with the door-mounted catch. This misalignment prevented the bolt from entering the catch on door # 226 when door # 225 (Chemistry Hot Lab side) was opened. This malfunction resulted in the capability to open both interlock doors at the same time, and was similar to a previous occurrence on February 28, 2013.

LER 2013-001-02

On February 28, 2013, Unit 1 was in Mode 1 at 100% power and Unit 2 was in Mode 5 for refueling outage L2R14. At 0400 hours CST, it was reported that both air lock doors on the Unit 1 Reactor Building 710' elevation between the Chemistry Hot Lab and the Reactor Building were open at the same time for approximately 10 seconds. While both interlock doors were open, Technical Specification (TS) Surveillance Requirement (SR) 3.6.4.1.2 ("Verify one secondary containment access door in each access opening is closed") was not met for Unit 1. Secondary containment was declared INOPERABLE for the time that both interlock doors were open. TS 3.6.4.1 Required Action A.1 to restore secondary containment to OPERABLE status within 4 hours was entered and exited for Unit 1 at 0400 CST on February 28, 2013.

The cause of the event was determined to be a less than robust design of the door interlock assembly. Troubleshooting found that the mounting fasteners that secure the entire locking assembly to the frame of door # 226 (Reactor Building side of the interlock) were loose, which prevented the electro-mechanical solenoid operated bolt from properly aligning with the door-mounted catch. This misalignment prevented the bolt from entering the catch on door # 226 when door # 225 (Chemistry Hot Lab side) was opened. This malfunction resulted in the capability to open both interlock doors at the same time.

This occurrence was similar to the October 2013 event. In addition to repairing the interlock assembly by tightening the fasteners, actions were initiated to periodically inspect the assemblies and to identify and install a more robust design. The new design had been identified but not installed when the October 2013 event occurred.

**G. COMPONENT FAILURE DATA:**

Security Door Controls, UR2-4 Controller Card, Component ID 1695558