Exelon Generation®

10CFR50.73

LG-14-010
January 8, 2014

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

Limerick Generating Station, Unit 1
Facility Operating License No. NPF-39
NRC Docket No. 50-352

Subject: LER 2014-001-00, Condition That Could Have Prevented Fulfillment of the Reactor Enclosure Secondary Containment Integrity Safety Function

This Licensee Event Report (LER) addresses a condition that could have prevented fulfillment of the reactor enclosure secondary containment integrity safety function. Both airlock doors on one reactor enclosure airlock were briefly opened simultaneously due to the airlock design. This LER is being submitted pursuant to the requirements of 10CFR50.73(a)(2)(v)(C).

There are no commitments contained in this letter.

If you have any questions, please contact Robert B. Dickinson at (610) 718-3400.

Respectfully,

Original signed by

Thomas J. Dougherty
Vice President – Limerick Generating Station
Exelon Generation Company, LLC

cc: Administrator Region I, USNRC
USNRC Senior Resident Inspector, LGS

NRC FORM 366 (10-2010) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0104 EXPIRES: 10/31/2013

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.

LICENSEE EVENT REPORT (LER)

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

1. FACILITY NAME	2. DOCKET NUMBER	3. PAGE
Limerick Generating Station, Unit 1	05000352	1 OF 3

4. TITLE

Inoperable Reactor Enclosure Secondary Containment Integrity Due to Open Airlock

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
										05000
10	30	2013	2014	- 001 -	00	01	08	2014	FACILITY NAME	DOCKET NUMBER 05000

9. OPERATING MODE

1

10. POWER LEVEL

100

11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: *(Check all that apply)*

☐ 20.2201(b)	☐ 20.2203(a)(3)(i)	☐ 50.73(a)(2)(i)(C)	☐ 50.73(a)(2)(vii)
☐ 20.2201(d)	☐ 20.2203(a)(3)(ii)	☐ 50.73(a)(2)(ii)(A)	☐ 50.73(a)(2)(viii)(A)
☐ 20.2203(a)(1)	☐ 20.2203(a)(4)	☐ 50.73(a)(2)(ii)(B)	☐ 50.73(a)(2)(viii)(B)
☐ 20.2203(a)(2)(i)	☐ 50.36(c)(1)(i)(A)	☐ 50.73(a)(2)(iii)	☐ 50.73(a)(2)(ix)(A)
☐ 20.2203(a)(2)(ii)	☐ 50.36(c)(1)(ii)(A)	☐ 50.73(a)(2)(iv)(A)	☐ 50.73(a)(2)(x)
☐ 20.2203(a)(2)(iii)	☐ 50.36(c)(2)	☐ 50.73(a)(2)(v)(A)	☐ 73.71(a)(4)
☐ 20.2203(a)(2)(iv)	☐ 50.46(a)(3)(ii)	☐ 50.73(a)(2)(v)(B)	☐ 73.71(a)(5)
☐ 20.2203(a)(2)(v)	☐ 50.73(a)(2)(i)(A)	☒ 50.73(a)(2)(v)(C)	☐ OTHER
☐ 20.2203(a)(2)(vi)	☐ 50.73(a)(2)(i)(B)	☐ 50.73(a)(2)(v)(D)	Specify in Abstract below or in NRC Form 366A

12. LICENSEE CONTACT FOR THIS LER

FACILITY NAME	TELEPHONE NUMBER *(Include Area Code)*
Robert B. Dickinson, Manager – Regulatory Assurance	610-718-3400

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

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)*

Two workers simultaneously opened both doors of a reactor enclosure personnel airlock when entering the airlock at the same time. One worker opened the inboard airlock door and the other worker opened the outboard airlock door. Both doors were closed in less than 10 seconds. This event resulted in a brief inoperability of reactor enclosure secondary containment integrity. This event was caused by a weakness in the design of the reactor enclosure airlocks. A modification is being evaluated for the airlock doors.

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
		YEAR	SEQUENTIAL NUMBER	REV NO.	
Limerick Generating Station, Unit 1	05000352	2014	- 001	- 00	2 OF 3

NARRATIVE

Unit Conditions Prior to the Event

Unit 1 was in Operational Condition (OPCON) 1 (Power Operation) at 100% power. There were no other structures, systems or components out of service that contributed to this event.

Description of the Event

On Sunday, November 10, 2013, Limerick Unit 1 was operating at 100% power. At 1351 hours, the main control room supervisor was notified that both doors (EIIS:DR) on one reactor enclosure airlock had been briefly opened. The reactor enclosure low pressure alarm (EIIS:ALM) did not actuate during the event and the reactor enclosure pressure did not drop below the Technical Specification limit of 0.25 inch of vacuum water gauge. However, reactor enclosure secondary containment (EIIS:NH) integrity was declared inoperable for the period when both doors were open.

An investigation confirmed that two workers had simultaneously opened the inboard and outboard doors on the reactor enclosure 217 foot elevation airlock for a period of less than 10 seconds. The workers immediately re-closed both doors and the breach of secondary containment was terminated. The workers notified Operations shift management of the unexpected containment breach.

Technical Specification (TS) 3.6.5.1.1 Reactor Enclosure Secondary Containment Integrity surveillance requirement 4.6.5.1.1.a requires verification that reactor enclosure pressure is greater than or equal to 0.25 inch of vacuum water gauge which is performed on a 24 hour frequency. The TS surveillance requirement 4.6.5.1.1.b.2 requires at least one door in each access to the reactor enclosure be verified closed which is performed on a 31 day frequency. TS 3.6.5.1.1 is applicable in operational conditions (OPCON) 1, 2 and 3.

An 8-hour NRC ENS notification was required by 10CFR50.72(b)(3)(v)(C) for a condition that at the time of discovery could have prevented fulfillment of a safety function of structures or systems needed to control the release of radioactive material. The ENS notification (#49526) was completed on Sunday, November 10, 2013, at 1615 hours ET. This LER is being submitted pursuant to the requirements of 10CFR50.73(a)(2)(v)(C) for a condition that could have prevented the fulfillment of the safety function of structures or systems needed to control the release of radioactive material.

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
		YEAR	SEQUENTIAL NUMBER	REV NO.	
Limerick Generating Station, Unit 1	05000352	2014	- 001	- 00	3 OF 3

NARRATIVE

Analysis of the Event

There was no actual safety consequence associated with this event. The potential safety consequences of this event were minimal. Both doors on the airlock were open simultaneously for less than 10 seconds.

To prevent an unplanned breach of secondary containment each reactor enclosure airlock is equipped with door open indicating lights which are used to locally verify the door status. If both doors are opened simultaneously a local alarm is actuated. If both doors remain open for greater than 10 seconds an alarm is actuated in the main control room and operators are dispatched to verify the airlock doors are closed.

UFSAR 6.2.3.2.1 describes the secondary containment design. The reactor enclosure secondary containment (Zones I and II) are designed to limit the inleakage to 200% of their zone free volume per day, and the refueling area secondary containment (Zone III) is designed to limit the inleakage to 50% of its zone free volume per day. These inleakage rates are based on a negative interior pressure of 0.25 in wg, while operating the standby gas treatment system (SGTS). Following a LOCA the affected zone is maintained at this negative pressure by operation of the SGTS.

Cause of the Event

This event was caused by a weakness in the design of the reactor enclosure airlocks since there is no mechanical interlock and the door open indicating light does not prevent simultaneous opening of both airlock doors.

Corrective Action Planned

A modification is being evaluated for the airlock doors.

Previous Similar Occurrences

Unit 2 LER 2013-003 was submitted due to a reactor enclosure airlock breach caused by a weakness in the airlock design. Unit 2 LER 2013-002 was submitted due to a reactor enclosure airlock breach caused by an non-functional airlock door open indicating light not providing the correct door status.