Exelon Nuclear

10CFR50.73

May 11, 2007

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

Limerick Generating Station, Unit 2
Facility Operating License No. NPF-85
NRC Docket No. 50-353

Subject: LER 2-07-002, Valid Actuation of Main Condenser Low Vacuum Isolation Logic During Outage

This Licensee Event Report (LER) addresses an event that resulted in a valid automatic actuation of the logic for multiple main steam isolation valves when breaking main condenser vacuum during a refueling outage.

Report Number:	2-07-002
Revision:	00
Event Date:	March 12, 2007
Discovered Date:	March 13, 2007
Report Date:	May 11, 2007

This LER is being submitted pursuant to the requirements of 10CFR50.73(a)(2)(iv).

There are no commitments contained in this letter.

If you have any questions or require additional information, please do not hesitate to contact us.

Sincerely,

Original signed by

Christopher H. Mudrick
Vice President - Limerick
Exelon Generation Company, LLC

cc: S. J. Collins, Administrator Region I, USNRC
S. L. Hansell, USNRC Senior Resident Inspector, LGS

NRC FORM 366 (6-2004) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0104 EXPIRES: 06/30/2007

Estimated burden per response to comply with this mandatory collection request: 50 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records and FOIA/Privacy Service Branch (T-5 F52), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects@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 2	05000353	1 OF 3

4. TITLE

Automatic Actuation of Main Condenser Low Vacuum Isolation Logic During Refueling Outage

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
03	12	2007	2007	- 002 -	0	05	11	2007	FACILITY NAME	DOCKET NUMBER 05000

9. OPERATING MODE

4

10. POWER LEVEL

0

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 E. Kreider, 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 of four channels of main condenser low vacuum isolation logic automatically actuated while breaking main condenser vacuum during a refueling outage. The main steam isolation valves were previously closed but would have automatically isolated on the actuation of the two channels. This event was caused by a procedure performance error that resulted in only two of four low vacuum isolation channels being bypassed when four channels were to be bypassed by procedure. The procedure has been revised to address a weakness involving two actions in a single step. The procedure now provides four steps with individual signoffs for bypassing the four low vacuum isolation channels.

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NARRATIVE *(If more space is required, use additional copies of NRC Form 366A)* **(17)**

Unit Conditions Prior to the Event

Unit 2 was in Operational Condition (OPCON) 4 (Cold Shutdown). There were no structures, systems or components out of service that contributed to this event.

Description of the Event

On Monday, March 12, 2007, Unit 2 was in OPCON 4 conducting 2R09 refueling outage activities. Operations personnel were performing the procedure for breaking main condenser vacuum [EIIS:SH] as scheduled. The main steam isolation valves (MSIVs) [EIIS:ISV] were manually closed in preparation for breaking main condenser vacuum. At 14:01 hours, the main condenser vacuum breakers were opened. Vacuum decreased to the low vacuum isolation setpoint and two of four channels (A and D) of the main condenser vacuum isolation logic actuated. There was no valve movement as a result of this isolation demand since the MSIVs were already closed. On Tuesday March 13, 2007, at 07:30 hours, Operations personnel identified that two channels of MSIV isolation logic had actuated and commenced an investigation.

The investigation determined that an Equipment Operator (EO) had been instructed to bypass the main condenser low vacuum isolation logic as required by the procedure for breaking main condenser vacuum (S07.2.A). The EO was required to bypass four channels [EIIS:CHA] (A,B,C and D) of isolation logic using four key-lock switches [EIIS:HS]. However, the EO only bypassed two channels (B and C) of isolation logic using two key-lock switches. This resulted in actuation of A and D channels of MSIV isolation logic when vacuum was broken.

This event involved a valid automatic actuation of the main condenser low vacuum isolation logic for multiple main steam isolation valves. The 8-hour ENS notification (#43231) required by 10CFR50.72(b)(3)(iv) was performed on Tuesday, March 13, 2007 at 15:14 hours. This LER is being submitted pursuant to the requirements of 10CFR50.73(a)(2)(iv).

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NARRATIVE *(If more space is required, use additional copies of NRC Form 366A)* **(17)**

Analysis of the Event

There were no actual safety consequences associated with this event. The potential safety consequences of this event were minimal as the event occurred after the system was properly removed from service and the safety function had already been completed (the MSIVs were closed as directed by procedure prior to breaking main condenser vacuum).

A weakness in the procedure for bypassing the main condenser low vacuum isolation contributed to the event. The procedure included two steps for bypassing the isolation logic. The first step directed bypassing the A and C channels. The second step directed bypassing the B and D channels. However, the EO only bypassed the B and C channels. The inclusion of these two actions in a single step is not in accordance with station guidance for procedure preparation.

Cause of the Event

The event was caused by a human performance deficiency regarding a failure to properly execute the procedure step that bypasses the main condenser low vacuum isolation prior to breaking main condenser vacuum. A contributing condition was a procedure weakness that involved two actions being directed in a single step.

Corrective Action Completed

A stand down was conducted with Operations shift personnel to communicate the issue and reinforce standards.

The procedure for breaking main condenser vacuum was revised to provide an individual step for each low vacuum logic bypass switch.

Previous Similar Occurrences

There was one previous similar occurrence of an automatic actuation of the main condenser low vacuum isolation logic when breaking main condenser vacuum. This event was reported in LER 2-89-014.