

Exelon Nuclear  
Limerick Generating Station  
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10CFR50.73

May 16, 2003

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

Limerick Generating Station, Unit 1 and Unit 2  
Facility Operating License Nos. NPF-39 and NPF-85  
NRC Docket Nos. 50-352 and 50-353

Subject: LER 1-03-002, Core Alteration Without Refueling Enclosure Secondary  
Containment Integrity

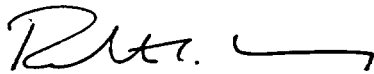
This Licensee Event Report (LER) addresses a Technical Specification (TS) violation that occurred as a result of the core alterations (control rod exercising) without refuel floor secondary containment integrity established while Unit 1 was at 100% power, and Unit 2 was in Mode 5 for refueling outage 2R07.

Report Number: 1-03-002  
Revision: 00  
Event Date: March 17, 2003  
Discovered Date: March 17, 2003  
Report Date: May 16, 2003

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

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

Sincerely,



Robert C. Braun  
Vice President (acting) – Limerick

Attachment 1 Summary of Exelon Commitments Form  
2 LER 1-03-002

cc: H. J. Miller, Administrator Region I, USNRC  
A. L. Burritt, USNRC Senior Resident Inspector, LGS

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SUMMARY OF EXELON COMMITMENTS FOR LGS  
LER 1-03-002

The following table identifies commitments made in this document by Exelon Nuclear. This summary fulfills the requirement of Exelon Nuclear Procedure LS-AA-117-1003. (Any other actions discussed in the submittal represent intended or planned actions by Exelon Nuclear. They are described to the NRC for the NRC's information and are not regulatory commitments.)

Commitment	Committed date (or "outage"):
None	N/A

Estimated burden per response to comply with this mandatory information 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 Management Branch (T-6 E6), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to: bjs1@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 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

**LICENSEE EVENT REPORT (LER)**

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

FACILITY NAME (1)

Limerick Generating Station, Units 1 and 2

DOCKET NUMBER (2)

05000 352 and 353

PAGE (3)

1 OF 3

TITLE (4)

Core Alteration Without Secondary Containment Established

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MO	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO	MO	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
03	17	2003	2003	002	00	05	16	2003		05000
OPERATING MODE (9)			THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5: (Check all that apply) (11)							
1			20.2201(b)			20.2203(a)(3)(ii)			50.73(a)(2)(ii)(B)	50.73(a)(2)(ix)(A)
POWER LEVEL (10)			20.2201(d)			20.2203(a)(4)			50.73(a)(2)(iii)	50.73(a)(2)(x)
100			20.2203(a)(1)			50.36(c)(1)(i)(A)			50.73(a)(2)(iv)(A)	73.71(a)(4)
			20.2203(a)(2)(i)			50.36(c)(1)(ii)(A)			50.73(a)(2)(v)(A)	73.71(a)(5)
			20.2203(a)(2)(ii)			50.36(c)(2)			50.73(a)(2)(v)(B)	OTHER
			20.2203(a)(2)(iii)			50.46(a)(3)(ii)			50.73(a)(2)(v)(C)	Specify in Abstract below or
			20.2203(a)(2)(iv)			50.73(a)(2)(i)(A)			50.73(a)(2)(v)(D)	in NRC Form 366A
			20.2203(a)(2)(v)		x	50.73(a)(2)(i)(B)			50.73(a)(2)(vii)	
			20.2203(a)(2)(vi)			50.73(a)(2)(i)(C)			50.73(a)(2)(viii)(A)	
			20.2203(a)(3)(i)			50.73(a)(2)(ii)(A)			50.73(a)(2)(viii)(B)	

**LICENSEE CONTACT FOR THIS LER (12)**

NAME

Marino C. Kaminski, Manager – Regulatory Assurance

TELEPHONE NUMBER (Include Area Code)

(610) 718-3400

**COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)**

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX

**SUPPLEMENTAL REPORT EXPECTED (14)**

YES (If yes, complete EXPECTED SUBMISSION DATE).			X	NO	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR

**ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)**

On March 16, 2003 the night operating shift was preparing to drain down the reactor cavity during refueling outage 2R07. Control rod exercising was in progress. Cavity drain down began which resulted in the breach of secondary containment at 01:06 hours on March 17, 2003. Contrary to Technical Specification 3.6.5.1.2, control rod exercising continued until late on night-shift and ceased when all control rods had been satisfactorily exercised. The relieving operating shift realized that control rod exercising (a core alteration) had occurred while refueling enclosure secondary containment was inoperable.

Two root causes were identified for the event. The primary cause of the event was less than adequate procedural guidance to verify secondary containment is established prior to control rod withdrawal. The second root cause was the failure of shift management to verify Technical Specification compliance upon breach of refuel enclosure secondary containment integrity. This action would have properly suspended core alterations.

The corrective actions performed included revisions to two procedures, "Pre Control Rod Withdrawal Check" (ST-6-047-370-1 and 2) and "Draining Reactor Well and Dryer/Separator Storage Pool" (S53.4.A), and management's expectation for Technical Specification compliance.

## LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET (2)	LER NUMBER (6)			PAGE (3)		
Limerick Generating Station, Units 1 and 2	05000352 & 05000353	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	2      O F      3		
		2003	-      002	-      00			

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

## Unit Conditions Prior to the Event

Unit 1 was in Operational Condition (OPCON) 1 at 100% power and Unit 2 was in Operational Condition (OPCON) 5 (Refueling) for 2R07 at approximately 488 inches in the cavity. There were no structures, systems or components out of service that contributed to this event.

## Description of the Event

On March 16, 2003 the activity to exercise control rods for 2R07 was in progress. Control rod exercising was suspended during the day shift due to problems encountered with control rod 02-31. The problem was initially believed to be associated with the control rod drive system (EHS:AA). At 22:00 hours a briefing was conducted in which the loss of secondary containment was discussed, however, the requirement to suspend core alterations was not properly addressed. A contributing factor was less than adequate and incorrect precautions in the operating procedure.

Troubleshooting activities isolated the control rod movement problems to control rod 02-31 only. At 22:35 hours exercising rods began in the C and D quadrants.

On March 17, 2003 at 1:06 hours secondary containment was breached in preparation for the cavity drain down. Between 01:17 hours and 02:17 hours 24 rods in Quadrant C were exercised. Drain down began at 2:37 hours and was secured at 4:08 hours. At 04:30 hours control rods in the D quadrant of the core were exercised. The activity was completed by the end of the night shift (06:30 hours) when all control rods had been exercised. At 10:00 hours the relieving shift manager recognized that control rod exercising had occurred while refuel enclosure secondary containment was inoperable.

This event involved an operation or condition that was prohibited by the Unit 1 and Unit 2 TS 3.6.5.1.2 which prohibits core alterations without refuel enclosure secondary containment. Therefore, this LER is being submitted pursuant to the requirements of 10CFR50.73(a)(2)(i)(B)

## Analysis of the Event

There were no actual safety consequences associated with this event. During the time period of March 17, 2003 at 1:06 hours to 11:14 hours while refuel enclosure secondary containment was secured there were no radiological events which would have resulted in a ground level release of radioactivity. During the event, the required decay heat removal systems, inventory control systems, electrical power sources and supporting instrumentation remained operable.

The potential safety consequences of this event were also minimal. No fuel handling was in progress and the control rods were being exercised under constraints of the one-rod-out interlock.

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Limerick Generating Station, Units 1 and 2	05000352 & 05000353	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	3      O F      3	
		2003	- 002	- 00		

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

## Cause of the Event

Two root causes were identified for the event. The primary cause of the event was less than adequate procedural guidance to verify refuel enclosure secondary containment is established prior to control rod withdrawal. The second root cause was the failure of shift management to verify Technical Specification compliance upon breach of refuel enclosure secondary containment integrity. This action would have properly suspended core alterations:

## Corrective Action Completed

The corrective actions performed included revisions to the "Pre Control Rod Withdrawal Check" procedure (ST-6-047-30-1 & 2). The revision verifies refuel enclosure secondary containment integrity prior to the withdrawal of each control rod when containment is required. Procedure S53.4.A "Draining Reactor Well and Dryer/Separator Storage Pool" was also revised to ensure no core alterations are performed while refuel enclosure secondary containment is breached.

## Corrective Actions Planned

Plans are in place to address management oversight issues and reinforce management expectations on Technical Specification compliance.

## Previous Similar Occurrences

There were no previous occurrences of loss of refuel enclosure secondary containment during core alterations.