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Limerick Generating Station  
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NUREG 1022

August 29, 2003

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 2-03-002, MSIV Closure Time Considerations

This Licensee Event Report (LER) addresses an unexpected as-found closure time of the Main Steam Isolation Valves (MSIV) in a hot condition during plant shutdown for refueling outage 2R07.

Report Number: 2-03-002  
Revision: 00  
Event Date: March 3, 2003  
Discovered Date: March 4, 2003  
Report Date: August 29, 2003

This report is being submitted as a voluntary LER to document an event pursuant to NUREG 1022 Section 2.7 which may have a generic interest or concern. Two of the eight MSIVs closed faster than the Technical Specification minimum time of 3 seconds.

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

Sincerely,



Ronald J. DeGregorio  
Vice President - LGS

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

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 2-03-002**

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

## LICENSEE EVENT REPORT (LER)

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

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, NE08-10202 (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

FACILITY NAME (1)

Limerick Generating Station, Unit 2

DOCKET NUMBER (2)

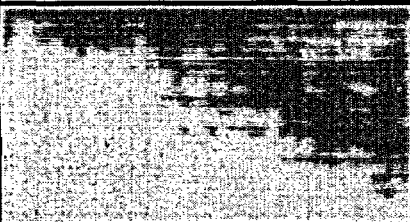
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PAGE (3)

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TITLE (4)

MSIV Closure Time during Hot Conditions

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	03	2003	2003	002	00	08	29	2003		05000	
OPERATING MODE (9)			THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5: (Check all that apply) (11)								
3											
POWER LEVEL (10)			0								
			20.2201(b)			20.2203(a)(3)(ii)			50.73(a)(2)(ii)(B)	50.73(a)(2)(ix)(A)	
			20.2201(d)			20.2203(a)(4)			50.73(a)(2)(iii)	50.73(a)(2)(x)	
			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) OTHER Specify in Abstract below or in NRC Form 366A Voluntary Report	
			20.2203(a)(2)(ii)			50.36(c)(2)			50.73(a)(2)(v)(B)		X
			20.2203(a)(2)(iii)			50.46(a)(3)(ii)			50.73(a)(2)(v)(C)		
			20.2203(a)(2)(iv)			50.73(a)(2)(i)(A)			50.73(a)(2)(v)(D)		
			20.2203(a)(2)(v)			50.73(a)(2)(i)(B)			50.73(a)(2)(vi)		
20.2203(a)(2)(vi)			50.73(a)(2)(i)(C)			50.73(a)(2)(vii)(A)					
20.2203(a)(3)(i)			50.73(a)(2)(ii)(A)			50.73(a)(2)(vii)(B)					

## LICENSEE CONTACT FOR THIS LER (12)

NAME

Keith S. Kemper, 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)

During a Main Steam Isolation Valve (MSIV) stroke time test on March 3, 2003, an unexpected result occurred when two Unit 2 MSIVs had closing times faster than the Technical Specification minimum 3 seconds. The MSIVs were declared inoperable and the plant proceeded to cold shutdown.

No specific cause was identified for the unacceptable stroke time. However, during the investigation inadequacies in the test methodology were identified. The test method did not accurately account for all of the variables that contribute to the minimum closing time.

As part of the corrective action Unit 2 MSIVs were adjusted during 2R07 to ensure that valve closing times were within the Technical Specification required range.

This LER is being submitted as a voluntary LER to document an event pursuant to NUREG 1022 Section 2.7 which may be of a generic interest or concern.

## LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Limerick Generating Station, Unit 2	05000353	2003	- 002	- 00	2 OF 3

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) 3 (Hot Shutdown) for refueling outage 2R07 proceeding to OPCON 4 (Cold Shutdown). There were no structures, systems or components out of service that contributed to this event.

### Description of the Event

On March 3, 2003 as-found closing time testing of the MSIVs was performed in OPCON 3 at the beginning of refueling outage 2R07. Two of the eight Main Steam Isolation Valves (MSIV) closed faster than the Technical Specification minimum of 3 seconds. The MSIVs were declared inoperable and the plant proceeded to OPCON 4. Maintenance was subsequently performed on the valves.

### Analysis of the Event

There were no actual safety consequences associated with this event. Evaluation of the risk using the Significance Determination Process indicated that the risk was in the Green band.

The potential safety consequences of this event were also minimal. An analysis performed by General Electric (GE) showed for the limiting design basis overpressure event that the MSIVs could close as fast as 2.4 seconds and still meet the ASME and Technical Specification acceptance criteria for vessel peak pressure. This analysis bounded the Limerick as-found conditions.

The Limerick Inservice Testing Program tests MSIV closing times at cold shutdown intervals. The valves were previously only tested at the beginning of the operating cycle under cold conditions following maintenance. The previous test methodology measured time from initiation of control switch to control room indicating lights indicating full closed (i.e., switch to light). This method does not measure the actual valve closing time, defined as beginning to end of stem motion.

During the previous operating cycle Limerick changed its test methodology based on industry operating experience to be more consistent with assumptions in the overpressure safety analysis. Limerick also began performing as-found testing under hot conditions at the beginning of refueling outage 2R07. It was following this initial as-found test that 2 of the 8 MSIVs were found to have closing times less than the Technical Specification minimum 3 seconds.

### Cause of the Event

No specific cause was identified for the unacceptable stroke time. However, during the investigation inadequacies in the test methodology were identified. The test method did not accurately account for all of the variables that contribute to the minimum closing time.

**LICENSEE EVENT REPORT (LER)**

FACILITY NAME (1)	DOCKET (2)	LER NUMBER (6)			PAGE (3)		
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**NARRATIVE** (If more space is required, use additional copies of NRC Form 366A) (17)

**Corrective Action Completed**

Unit 2 MSIVs were adjusted during 2R07 to ensure that valve closing times were within the Technical Specification required range.

Unit 1 MSIVs were tested hot during a forced shutdown in April 2003. All eight MSIVs as-found closing times were within the 3-5 second Technical Specification requirement.

**Corrective Actions Planned**

Limerick is revising the test procedures that measure MSIV closing times.

**Previous Similar Occurrences**

There were no previous Limerick LERs of MSIVs closing outside Technical Specification limits.

**MSIV Information**

Manufacturer: Atwood & Morrill Co.

Model Number: 48223-706-7503