

July 9, 2012

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 2012-001-00, Condition Prohibited by Technical Specifications

This Licensee Event Report (LER) addresses a condition prohibited by Technical Specifications.

The Unit 2 Division 2 redundant reactivity control system was inoperable due to instrument signal drift on a reactor pressure vessel pressure channel. An investigation determined that the channel was inoperable for a time longer than permitted by the Technical Specifications.

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

There are no regulatory 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

LICENSEE EVENT REPORT (LER)(See reverse 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 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.

1. FACILITY NAME

Limerick Generating Station, Unit 2

2. DOCKET NUMBER

05000353

3. PAGE

1 OF 4

4. TITLE

Condition Prohibited by Technical Specifications Due to Redundant Reactivity Control System Setpoint Drift

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
05	10	2012	2012	- 001	- 00	07	09	2012	FACILITY NAME	DOCKET NUMBER 05000
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)		
10. POWER LEVEL			<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)		
			<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 type="checkbox"/> 50.73(a)(2)(v)(C)		<input type="checkbox"/> OTHER		
			<input type="checkbox"/> 20.2203(a)(2)(vi)	<input checked="" type="checkbox"/> 50.73(a)(2)(i)(B)		<input type="checkbox"/> 50.73(a)(2)(v)(D)		Specify in Abstract below or in NRC Form 366A		

12. LICENSEE CONTACT FOR THIS LER

NAME

Robert B. Dickinson, Manager – Regulatory Assurance

TELEPHONE NUMBER (Include Area Code)

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
B	JC	PT	G080	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)

The Unit 2 Division 2 redundant reactivity control system was determined to be inoperable due to instrument signal drift on a reactor pressure vessel pressure channel. An investigation determined that the channel was inoperable for a time longer than permitted by the Technical Specifications. The apparent cause of the unplanned inoperability of the affected channel was a premature failure of the reactor pressure analog trip module card. A contributing cause was the lack of adequate testing on the affected card self-excitation circuit. The degraded card was replaced, calibrated and tested successfully. The Daily Surveillance Log/OPCONS 1,2,3 RRCS channel check has been revised to ensure unacceptable RRCS channel signal drift will be identified and evaluated as required. The RRCS ATWS-Reactor Pressure Vessel-High; Calibration /Functional Test will be revised to test the card self-excitation circuit.

**LICENSEE EVENT REPORT (LER)
CONTINUATION SHEET**

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
Limerick Generating Station, Unit 2	05000353	YEAR	SEQUENTIAL NUMBER	REV NO.	2 OF 4
		2012	- 001	- 00	

NARRATIVE

Unit Conditions Prior to the Event

Unit 2 was in Operational Condition (OPCON) 1 (Power Operation) at approximately 100% power. There were no structures, systems or components out of service that contributed to this event.

Description of the Event

On Thursday, May 10, 2012, Unit 2 was operating at 100% power. Engineering System Manager performance monitoring on the redundant reactivity control system (RRCS) (EIIS:JC) was in progress. The System Manager identified that the Unit 2 plant monitoring system (PMS) computer point (S044) for RRCS Division 2 channel B reactor pressure vessel (RPV) pressure was indicating approximately 20 psig lower than the other three Unit 2 RPV pressure channels.

Further investigation identified that the daily surveillance test (ST-6-107-590-2) channel check taken at the RRCS auxiliary equipment room panel display (20-C635) also recorded a 20 psig deviation of the pressure transmitter (EIIS:PT) PT-042-2N403F reading for channel 2B as compared to the other three RRCS channels (1A, 1B and 2A). All four channel readings noted in the daily surveillance test were within the test acceptable range (990 - 1100 psig). Based on analysis of setpoint, as left calibration information and current readings, Engineering was concerned that the 2B channel of RRCS may not function at the trip setpoint of less than or equal to 1149 psig. Engineering notified Operations shift management of the deficiency. The Unit 2 Division 1 RRCS functions were not affected by this condition.

At 2100 hours, shift management declared the degraded channel inoperable and Technical Specification (TS) 3.3.4 ATWS Recirculation Pump Trip System Instrumentation, action "b" was entered. Action "b" requires placing the inoperable channel in the tripped condition within 24 hours.

The investigation used computer trending and identified that degraded performance of the analog trip module (ATM) card was evident following refueling outage 2R11 (April 2011). The investigation also identified that the card performance was further degraded following the failure of an RRCS auctioneered power supply which occurred on September 8, 2011. The degraded channel was later identified as inoperable during the initial performance of an RRCS performance monitoring activity on May 10, 2012. A new ATM card was

**LICENSEE EVENT REPORT (LER)
CONTINUATION SHEET**

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
Limerick Generating Station, Unit 2	05000353	YEAR	SEQUENTIAL NUMBER	REV NO.	3 OF 4
		2012	- 001	- 00	

NARRATIVE

installed, calibrated and tested satisfactorily. The degraded card had been in-service since January 31, 2007.

A review of instrument operating history identified that the channel was inoperable from September 8, 2011 to May 10, 2012; therefore, the channel was inoperable for approximately 8 months which exceeded the TS allowed outage time.

This event involved a condition prohibited by Technical Specifications. Therefore, this LER is being submitted pursuant to the requirements of 10CFR50.73(a)(2)(i)(B).

Analysis of the Event

There was no actual safety consequence associated with this event. The potential safety consequences of this event were minimal. The redundant Unit 2 Division 1 RRCS trip system was not affected by this degraded channel. The Unit 2 Division 1 trip system was operable during the affected period. The Unit 2 Division 2 trip system remained capable of actuation at a reactor pressure approximately 20 psig higher than its required setpoint.

With the 2B channel inoperable the Unit 2 Division 2 trip system may not have actuated on a high reactor pressure condition. However, the Unit 2 Division 1 trip system would have actuated to mitigate a reactor high pressure event. The operable Division 1 trip system remained capable of actuating the alternate rod insertion, reactor recirculation pump trip, feedwater runback, and standby liquid control system initiation as designed.

Cause of the Event

The apparent cause of the unplanned inoperability of the Unit 2 Division 2 RRCS system was a premature failure of the reactor pressure ATM card. A contributing cause was the lack of adequate testing on the ATM card self-excitation circuit.

Corrective Action Completed

The degraded ATM card was replaced, calibrated and tested successfully.

The Daily Surveillance Log/OPCONS 1,2,3 RRCS channel check has been revised to ensure unacceptable RRCS channel signal drift will be identified and evaluated as required.

**LICENSEE EVENT REPORT (LER)
CONTINUATION SHEET**

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
		YEAR	SEQUENTIAL NUMBER	REV NO.	
Limerick Generating Station, Unit 2	05000353	2012	- 001	- 00	4 OF 4

NARRATIVE

Corrective Action Planned

The RRCS ATWS-Reactor Pressure Vessel-High; Calibration/Functional Test will be revised to test the ATM card self-excitation circuit.

Previous Similar Occurrences

There were no recent previous similar occurrences of RRCS inoperability that resulted in a condition prohibited by TS.

Component Data:

System	Redundant Reactivity Control System
PS-X-M1-20136	Reactor Pressure Analog Trip Module
Manufacturer	General Electric Company
Model number	152D8036G004