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LaSalle County Station
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Exelon Nuclear

September 4, 2003

10 CFR 50.73

United States Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555

LaSalle County Station, Units 1 and 2
Facility Operating License Nos. NPF-11 and NPF-12
NRC Docket Nos. 50-373 and 50-374

Subject: Licensee Event Report

In accordance with 10 CFR 50.73(a)(2)(v)(D) and (a)(2)(vii), Exelon Generation Company, (EGC), LLC, is submitting Licensee Event Report Number 03-003-00, Docket No. 050-373.

Should you have any questions concerning this letter, please contact Mr. Glen Kaegi, Regulatory Assurance Manager, at (815) 415-2800.

Respectfully,

Susan Landahl

Susan Landahl
Plant Manager
LaSalle County Station

Attachment: Licensee Event Report

cc: Regional Administrator - NRC Region III
NRC Senior Resident Inspector - LaSalle County Station

IE22

NRC FORM 366 (7-2001)

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104 EXPIRES 7-31-2004

Estimated burden per response to comply with this mandatory information collection request: 50 hrs. 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, and by internet e:mail to bjs1@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NOEB-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 collection.

LICENSEE EVENT REPORT (LER)

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

1. FACILITY NAME	2. DOCKET NUMBER	3. PAGE
LaSalle County Station, Unit 1	05000373	1 of 3

4. TITLE Reactor Core Isolation Cooling High Steam Flow Isolation Differential Pressure Switches Failed Due to Torn Diaphragm

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MO	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO	MO	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
									LaSalle County Station, Unit 2	05000374
7	10	2003	2003	- 003 -	00	09	04	03	FACILITY NAME	DOCKET NUMBER

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)(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)
☐ 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 in NRC From 366A
☐ 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)(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)	

12. LICENSEE CONTACT FOR THIS LER

NAME	TELEPHONE NUMBER (Include Area Code)
Robert Fredricksen, Design Engineering	(815) 415-2381

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	BN	PDS	Static O-Ring (SOR INC)	Y					

14. SUPPLEMENTAL REPORT EXPECTED			15. EXPECTED SUBMISSION DATE	MONTH	DAY	YEAR
☐ YES (If yes, complete EXPECTED SUBMISSION DATE)	☒ NO					

16. ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines)

On 7/7/03, during the performance of surveillance LIS-RI-101, "Unit 1 RCIC Steam Line High Flow Isolation Calibration," differential pressure switch 1E31-N013AA failed its diaphragm integrity test. The surveillance was stopped, and the switch was replaced. The surveillance was continued, and on 7/10/03, differential pressure switch 1E31-N013BA also failed its diaphragm integrity test.

The cause in each case was a rupture of the Kapton diaphragm in the Static O-Ring (SOR, Inc.) differential pressure switch. This condition is a known performance issue with these switches. The corrective action was to replace the failed switches. Efforts to identify, qualify, and install a replacement for the SOR switches are on-going.

The safety significance was minimal. With both divisions of the RCIC Steam Line High Flow isolation inoperable at the same time, the RCIC equipment room Area and Differential Temperature instrumentation were operable and would have closed the steam supply line isolation valves in the event of a break or leak.

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		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
LaSalle County Station, Unit 1	05000373	03	- 002 -	00	2 of 3

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

PLANT AND SYSTEM IDENTIFICATION

General Electric - Boiling Water Reactor, 3489 Megawatts Thermal Rated Core Power

A. CONDITION PRIOR TO EVENT

Unit(s): 1 Event Date: 7/10/03 Event Time: 1110
Reactor Mode(s): 1 Power Level(s): 100
Mode(s) Name: Run

B. DESCRIPTION OF EVENT

On 7/7/03, during the performance of surveillance LIS-RI-101, "Unit 1 RCIC Steam Line High Flow Isolation Calibration," differential pressure (D/P) switch 1E31-N013AA failed its diaphragm integrity test, such that no switch as-found setpoint could be obtained. The surveillance was stopped, and the switch was replaced. The new switch was tested acceptably and returned to service.

On 7/10/03, during the continuation of surveillance LIS-RI-101, D/P switch 1E31-N013BA failed its diaphragm integrity test. The surveillance was stopped, and the switch was replaced.

At the time of discovery of the failure of switch 1E31-N013BA, switch 1E31-N013AA had been replaced and calibrated. However, because both switches were found with diaphragm failures during the same surveillance, this condition was determined to be reportable under 10 CFR 50.73 (a)(2)(vii) as a condition where a single cause caused two independent trains or channels to become inoperable in a single system designed to mitigate the consequences of an accident. Because these failures would have prevented a Reactor Core Isolation Cooling (RCIC)(BN) Steam Line High Flow isolation in the event of a break, it is also reportable under 10 CFR 50.73(a)(2)(v)(D) as a condition that could have prevented the fulfillment of the safety function of systems needed to mitigate the consequences of an accident.

C. CAUSE OF EVENT

The root cause of the diaphragm failures was not determined; however, Static O-Ring, Inc. (SOR) D/P switches have historically experienced ruptures of the Kapton diaphragm material. The switches that failed have been in service since 12/98 (1E31-N013AA) and 12/99 (1E31-N013BA), which are typical life spans for these switches in this application.

The use of SOR D/P switches at LaSalle has been documented in IE Bulletin 86-02 (7/18/86) and a Safety Evaluation Report (4/1/87) "Continued Use of SOR DP Switches at LaSalle County Station." LaSalle elected to replace the SOR switches for the reactor water level trip functions with Rosemount trip units. Due to cost considerations, SOR switches were retained in less critical applications, including the RCIC Steam Line Flow - High isolation. A quarterly (92 day) channel calibration surveillance interval was established and incorporated into Technical Specification Surveillance Requirement 3.3.6.1.3 for these switches, to ensure early detection of failures. This was the first reportable event related to the failure of an SOR switch since 1995.

Efforts to identify a suitable replacement for these switches continue, but have not been successful to date.

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

D. SAFETY ANALYSIS

The safety significance of this event was minimal. The RCIC Steam Line Flow—High function detects a break of the RCIC steam supply lines and closes the steam line isolation valves to prevent inventory loss and potential core uncovery. No credit in the UFSAR accident analysis is taken for this function, since the bounding analysis is performed for large breaks such as recirculation and MSL breaks. However, the isolation function prevents the RCIC steam line break from becoming bounding.

With both divisions inoperable at the same time, the RCIC equipment room Area and Differential Temperature instrumentation is diverse to the high flow isolation function and would have closed the steam line isolation valves in the event of a break or leak in the steam supply lines.

This event constitutes a safety system functional failure.

E. CORRECTIVE ACTIONS

1. The failed switches were replaced with like-for-like SOR D/P switches.
2. Efforts to identify, qualify and install an acceptable replacement for the SOR switches are in-progress (AT# 154201-6).

F. PREVIOUS OCCURRENCES

LER NUMBER	TITLE
LER 374/95-011	Inadvertent ESF Actuation and Reactor Core Isolation Cooling Isolation due to Personnel Error

This LER involved an inadvertent isolation of the RCIC inboard steam line isolation valve that occurred following discovery of a ruptured diaphragm on D/P switch 2E31-N013BA. The isolation was due to a personnel error, in that the circuit breaker to the isolation valve was closed prior to resetting the high flow isolation logic signal. The corrective actions were to replace the failed D/P switch and to address the personnel error issues. These corrective actions would not have prevented this event.

LER 374/93-001	RCIC High Flow Isolation Static-O-Ring (SOR) Failure Due to a Torn Diaphragm

This LER documented the failure of D/P switch 2E31-N013AA due to a torn diaphragm. Corrective actions were to replace the switch, and would not have prevented this event.

G. COMPONENT FAILURE DATA

Static O-Ring, D/P Switch, Model # 103AS-B203-NX-C1A-JJTTX6