Exelon Generation

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10 CFR 50.73

RA16-014

April 11, 2016

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

LaSalle County Station, Units 1 and 2
Facility Operating License Nos. NPF-11 and NPF-18
NRC Docket Nos. 50-373 and 50-374

Subject: Licensee Event Report 2016-001-00, Secondary Containment Inoperable due to Reactor Building Ventilation Damper Failure

In accordance with 10 CFR 50.73(a)(2)(v)(C) and 10 CFR 50.73(a)(2)(v)(D), Exelon Generation Company (EGC), LLC, is submitting Licensee Event Report Number 2016-001-00 for LaSalle County Station, Units 1 and 2.

There are no regulatory commitments in this letter. Should you have any questions concerning this report, please contact Mr. Guy V. Ford, Regulatory Assurance Manager, at (815) 415-2800.

Respectfully,

Harold T. Vinyard
Plant Manager
LaSalle County Station

Enclosure: Licensee Event Report

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

NRC FORM 366 (11-2015) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0104 EXPIRES: 10/31/2018

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 and Information Collections Branch (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.

LICENSEE EVENT REPORT (LER)

(See Page 2 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

Secondary Containment Inoperable due to Reactor Building Ventilation Damper Failure

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
02	10	2016	2016	- 001	- 00	04	11	2016	LaSalle County Station, Unit 2	05000374
									FACILITY NAME	DOCKET NUMBER

9. OPERATING MODE	11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: *(Check all that apply)*			
1	☐ 20.2201(b)	☐ 20.2203(a)(3)(i)	☐ 50.73(a)(2)(ii)(A)	☐ 50.73(a)(2)(viii)(A)
	☐ 20.2201(d)	☐ 20.2203(a)(3)(ii)	☐ 50.73(a)(2)(ii)(B)	☐ 50.73(a)(2)(viii)(B)
	☐ 20.2203(a)(1)	☐ 20.2203(a)(4)	☐ 50.73(a)(2)(iii)	☐ 50.73(a)(2)(ix)(A)
	☐ 20.2203(a)(2)(i)	☐ 50.36(c)(1)(i)(A)	☐ 50.73(a)(2)(iv)(A)	☐ 50.73(a)(2)(x)
10. POWER LEVEL	☐ 20.2203(a)(2)(ii)	☐ 50.36(c)(1)(ii)(A)	☐ 50.73(a)(2)(v)(A)	☐ 73.71(a)(4)
	☐ 20.2203(a)(2)(iii)	☐ 50.36(c)(2)	☐ 50.73(a)(2)(v)(B)	☐ 73.71(a)(5)
	☐ 20.2203(a)(2)(iv)	☐ 50.46(a)(3)(ii)	☒ 50.73(a)(2)(v)(C)	☐ 73.77(a)(1)
91	☐ 20.2203(a)(2)(v)	☐ 50.73(a)(2)(i)(A)	☒ 50.73(a)(2)(v)(D)	☐ 73.77(a)(2)(i)
	☐ 20.2203(a)(2)(vi)	☐ 50.73(a)(2)(i)(B)	☐ 50.73(a)(2)(vii)	☐ 73.77(a)(2)(ii)
		☐ 50.73(a)(2)(i)(C)	☐ OTHER Specify in Abstract below or in NRC Form 366A	

12. LICENSEE CONTACT FOR THIS LER

LICENSEE CONTACT	TELEPHONE NUMBER *(Include Area Code)*
Joe Fiesel, Maintenance Director	(815) 415-2500

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
X	VA	SOL	A610	Y					

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

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

On February 10, 2016, Unit 1 was in Mode 1 at 91 percent power and Unit 2 was in Mode 1 at 100 percent power. At 2207 hours CST, it was reported that the Unit 1 reactor building ventilation exhaust damper 1VR05YA failed and began to show dual indication. As a result, the Unit 1 reactor building ventilation exhaust fans tripped off, causing a positive reactor building differential pressure on both units. The damper and secondary containment were declared inoperable, and Technical Specification 3.6.4.1 Required Action A.1 was entered on both units to restore secondary containment to operable status within four hours. In addition, Technical Specification 3.6.4.2 Required Action A.1 was entered to isolate the penetration with one closed or deactivated automatic valve within eight hours.

The cause was an intermittent failure of a solenoid on one of the two half damper blades on the 1VR05YA exhaust isolation damper. This led to the exhaust damper blade half intermittently changing its position, which resulted in secondary containment pressure going positive. The solenoid valves on both halves of the 1VR05YA exhaust damper were replaced, and the failed solenoid was sent to a vendor for failure analysis.

NRC FORM 366A (11-2015) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0104 EXPIRES: 10/31/2018

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 and Information Collections Branch (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.

LICENSEE EVENT REPORT (LER) CONTINUATION SHEET

1. FACILITY NAME	2. DOCKET NUMBER	3. LER NUMBER		
		YEAR	SEQUENTIAL NUMBER	REV NO.
LaSalle County Station, Unit 1	05000373	2016	- 001	- 00

NARRATIVE

A. Condition Prior to Event:

Unit(s): 1 / 2 Event Date: February 10, 2016 Event Time: 2207 CST
Reactor Mode(s): 1 / 1 Mode(s) Name: Power Operation/Power Operation Power Level: 91%/100%

B. Description of Event:

On February 10, 2016, Unit 1 was in Mode 1 at 91 percent power and Unit 2 was in Mode 1 at 100 percent power. At 2207 hours CST, it was reported that the Unit 1 reactor building ventilation (VR) exhaust damper 1VR05YA failed and began to show dual indication. As a result, the Unit 1 reactor building ventilation exhaust fans tripped off, causing a positive reactor building differential pressure on both units. The damper and secondary containment were declared inoperable, and Technical Specification 3.6.4.1 Required Action A.1 was entered on both units to restore secondary containment to operable within four hours. In addition, Technical Specification 3.6.4.2 Required Action A.1 was entered to isolate the penetration with one closed or deactivated automatic valve within eight hours.

The loss of secondary containment pressure is reportable in accordance with 10 CFR 50.73(a)(2)(v)(C) and 10 CFR 50.73(a)(2)(v)(D) as an event or condition that could have prevented the fulfillment of the safety function of structures or systems needed to control the release of radioactive material and to mitigate the consequences of an accident. An ENS report was made to the NRC at 0120 EST on February 11, 2016 (EN #51725) pursuant to 10 CFR 50.72(b)(3)(v)(C) and (D).

With the Unit 1 VR system shutdown, the 1VR05YA damper was cycled open. The damper went full open; however, a buzzing sound was heard near its associated solenoid. The solenoids were inspected and it was noticed that the buzzing solenoid was also leaking slightly through its exhaust port. Within a short period of time it was observed that the solenoid intermittently energized and de-energized. When the solenoid was de-energized the damper indication was dual with one half of damper blade closed. The solenoids were replaced on both halves of the damper blades on 1VR05YA. Damper 1VR05YA was declared operable on February 11, 2016 at 1027. The Unit 1 VR system was subsequently restarted.

The 1VR05YA damper is a safety-related component associated with secondary containment isolation; however, the event was not a Safety System Functional Failure (SSFF). An engineering evaluation concluded that the safety function of the 1VR05YA damper is to close during an accident condition to ensure the secondary containment safety function can be satisfied. Since the VR system exhaust isolation damper failed closed during the event, the damper safety function was met; and therefore, this event is not being counted as a Safety System Functional Failure (SSFF) for the NRC performance indicator.

C. Cause of Event:

An apparent cause investigation determined the cause was an intermittent failure of a solenoid on one of the two half damper blades on the 1VR05YA exhaust isolation damper. This led to the exhaust damper blade half intermittently changing its position, which resulted in the pressure of secondary containment going positive.

There has not been a failure of any solenoid valves on all eight VR dampers in the last 15 years. The solenoids on 1VR05YA are replaced on every fourth outage (approximately eight-year frequency). They were last replaced on May 20, 2002 and February 12, 2010. The next scheduled replacement is due in March 2018. This history indicates the solenoid on the 1VR05YA exhaust damper failed prematurely. The last failure on April 29, 2009 was on Unit 2 exhaust isolation damper 2VR05YA (dual indication) due to improper adjustment of the speed controller on the actuator.

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NARRATIVE

D. Safety Analysis:

Reactor building ventilation (VR) is a non-safety system. The VR system provides filtered outdoor air to control the maximum reactor building temperature in generally accessible areas, and to maintain a minimum negative pressure of 0.25 inches of water column with respect to atmospheric pressure. The system operates during normal plant operating conditions, when secondary containment is required. Each unit's VR system is capable of maintaining secondary containment at the required negative pressure with the other unit's VR system shut down. The VR system has no safety design basis except those parts associated with secondary containment isolation dampers, main steam tunnel isolation, and fuel pool exhaust ducts. The loss of secondary containment pressure was reportable as an event or condition that could have prevented the fulfillment of a safety function.

E. Corrective Actions:

- Replaced both solenoid valves on both halves of the 1VR05YA exhaust damper blades.
- Declared damper 1VR05YA and secondary containment operable. Subsequently restarted the Unit 1 VR system.
- Sent the failed solenoid to the vendor for failure analysis. Additional corrective actions will be determined following component failure analysis.

F. Previous Occurrences:

A review of past events identified no reportable occurrences resulting from reactor building ventilation exhaust damper failure in the previous ten years.

G. Component Failure Data:

Part Description: 3-Way Solenoid Valve with Manual Operator, 1/2 IN. NPT, MIN-MAX Operating Pressure
Manufacturer: Automatic Switch Company
Model No.: HT8316A065VMO