



LaSalle County Station
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10 CFR 50.73

RA17-039

April 12, 2017

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

LaSalle County Station, Unit 2
Renewed Facility Operating License No. NPF-18
NRC Docket No. 50-374

Subject: Licensee Event Report 2017-003-00, High Pressure Core Spray System
Inoperable due to Injection Valve Stem-Disc Separation

In accordance with 10 CFR 50.73(a)(2)(i)(B) and 10 CFR 50.73(a)(2)(v)(D), Exelon
Generation Company, LLC (EGC) is submitting Licensee Event Report (LER)
Number 2017-003-00 for LaSalle County Station, Unit 2.

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

Respectfully,

A handwritten signature in black ink that reads "Will J. Trafton".

William J. Trafton
Site Vice President
LaSalle County Station

Enclosure: Licensee Event Report

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



LICENSEE EVENT REPORT (LER)

(See Page 2 for required number of digits/characters for each block)

(See NUREG-1022, R.3 for instruction and guidance for completing this form
<http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1022/r3/>)

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 Information Services Branch (T-2 F43), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by e-mail to Infocollects.Resource@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOF-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 LaSalle County Station, Unit 2	2. DOCKET NUMBER 05000374	3. PAGE 1 OF 4
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4. TITLE
High Pressure Core Spray System Inoperable due to Injection Valve Stem-Disc Separation

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	11	2017	2017	003	00	04	12	2017	NA	NA
									FACILITY NAME	DOCKET NUMBER
									NA	NA

9. OPERATING MODE **11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)**

5	<input type="checkbox"/> 20.2201(b)	<input type="checkbox"/> 20.2203(a)(3)(i)	<input type="checkbox"/> 50.73(a)(2)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)
	<input type="checkbox"/> 20.2201(d)	<input type="checkbox"/> 20.2203(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(ii)(B)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)
	<input type="checkbox"/> 20.2203(a)(1)	<input type="checkbox"/> 20.2203(a)(4)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(ix)(A)
	<input type="checkbox"/> 20.2203(a)(2)(i)	<input type="checkbox"/> 50.36(c)(1)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(iv)(A)	<input type="checkbox"/> 50.73(a)(2)(x)
10. POWER LEVEL 000	<input type="checkbox"/> 20.2203(a)(2)(ii)	<input type="checkbox"/> 50.36(c)(1)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(v)(A)	<input type="checkbox"/> 73.71(a)(4)
	<input type="checkbox"/> 20.2203(a)(2)(iii)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(v)(B)	<input type="checkbox"/> 73.71(a)(5)
	<input type="checkbox"/> 20.2203(a)(2)(iv)	<input type="checkbox"/> 50.46(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(v)(C)	<input type="checkbox"/> 73.77(a)(1)
	<input type="checkbox"/> 20.2203(a)(2)(v)	<input type="checkbox"/> 50.73(a)(2)(i)(A)	<input checked="" type="checkbox"/> 50.73(a)(2)(v)(D)	<input type="checkbox"/> 73.77(a)(2)(i)
	<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)(vii)	<input type="checkbox"/> 73.77(a)(2)(ii)
		<input type="checkbox"/> 50.73(a)(2)(i)(C)	<input type="checkbox"/> OTHER Specify in Abstract below or in NRC Form 366A	

12. LICENSEE CONTACT FOR THIS LER

LICENSEE CONTACT Joe Fiesel, Maintenance Director	TELEPHONE NUMBER (Include Area Code) (815) 415-2500
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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	BG	V	A391	Y	NA	NA	NA	NA	NA

14. SUPPLEMENTAL REPORT EXPECTED <input checked="" type="checkbox"/> YES (If yes, complete 15. EXPECTED SUBMISSION DATE) <input type="checkbox"/> NO	15. EXPECTED SUBMISSION DATE	MONTH 08	DAY 11	YEAR 2017
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ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)

On February 11, 2017, Unit 2 was in Mode 5 for a planned refueling outage. While attempting to fill and vent the Unit 2 High Pressure Core Spray (HPCS) system, no flow was observed from the drywell vent valves or downstream of the HPCS injection valve. The HPCS system was already inoperable to support a scheduled surveillances performed on February 8, 2017 in which the HPCS injection isolation valve had been cycled three times satisfactorily. Troubleshooting determined the cause of the valve malfunction was due to stem-disc separation. The valve was replaced prior to restart of the unit from the refueling outage. The causal evaluation for the valve failure is ongoing, and results of the investigation will be reported in a supplement to this LER.

This component failure is reportable in accordance with 10 CFR 50.73(a)(2)(v)(D) as an event or condition that could have prevented fulfillment of the safety function of structures or system that are needed to mitigate the consequences of an accident. This condition could have prevented the HPCS system, a single train safety system, from performing its design function if the valve failure occurred during an actual demand. This component failure is also reportable in accordance with 10 CFR 50.73(a)(2)(i)(B) as a condition prohibited by Technical Specifications (TS) 3.5.1 "ECCS – Operating," since the HPCS system may have been inoperable for greater than the TS 3.5.1, Required Action B.2, Completion Time of 14 days to restore HPCS system to operable status. There were minimal safety consequences associated with the condition since HPCS was not required to be operable at the time of the failure, and other required emergency safety systems remained operable. There were no actual demands for Unit 2 HPCS, other ECCS systems, or the reactor core isolation cooling (RCIC) system during this period.



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

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LaSalle County Station, Unit 2	05000374	2017	- 003	- 00

NARRATIVE

potential wedge pin failure. At the time of the failure, the station was following vendor and industry guidance for inspection of the valve related to the Flowserve Part 21 Notification.

The causal evaluation into the valve failure is ongoing. The results will be reported in a supplement to this LER upon completion.

REPORTABILITY AND SAFETY ANALYSIS

This component failure is reportable in accordance with 10 CFR 50.73(a)(2)(i)(B) as a condition prohibited by TS due to the failure to complete TS 3.5.1, "ECCS – Operating," Required Action B.2, to restore HPCS system to operable status within the specified Completion Time of 14 days. This component failure is also reportable in accordance with 10 CFR 50.73(a)(2)(v)(D) as an event or condition that could have prevented fulfillment of the safety function of structures or system that are needed to mitigate the consequences of an accident. This condition could have prevented the HPCS system, a single train safety system, from performing its design function.

There were minimal safety consequences associated with the condition since HPCS was not required to be operable at the time of discovery of the condition, and other required emergency safety systems remained operable. The HPCS injection isolation valve 2E22-F004 was cycled open and closed satisfactorily during previous flow surveillances. There were no actual demands for Unit 2 HPCS, other ECCS systems, or the reactor core isolation cooling (RCIC) system during this period.

This condition is under evaluation as a safety system functional failure defined in accordance with NEI 99-02, Regulatory Assessment Performance Indicator Guideline.

CORRECTIVE ACTIONS

Following discovery of the failure, the Unit 2 HPCS injection isolation valve 2E22-F004 was overhauled using a new stem, and the upper wedge threads were repaired. In addition, a stem lube and rotation check was performed satisfactorily. A review of the diagnostic testing results and pin analysis criteria was performed on all the affected valves in this population. The remaining valves in the population were within the latest vendor's recommendation for rotation criteria.

PREVIOUS OCCURRENCES

A review of station Licensee Event Reports for the past three years, related to stem-disc separation issues, identified the following similar instances:

LER 374-2014-001: On August 5, 2014, LaSalle County Station Unit 2 automatically scrammed from 100 percent power on high neutron flux, followed by a Group I containment isolation. Following the Group I isolation, the control room operators noted that the position indication for valve 2B21-F022C, the inboard 2C Main Steam Isolation Valve (MSIV), showed dual indication rather than full closed. Troubleshooting of the 2C MSIV determined that the valve stem disc had separated from the stem, which allowed the main disk to drop into the main steam flow path. The resulting reactor pressure transient added positive reactivity, which caused the high neutron flux scram. Increased steam flow in the other three main steam lines resulted in a nearly simultaneous high main steam line flow Group I containment isolation. The cause of the stem-disc separation on the 2C MSIV was fretting wear attributable to marginal design. The root cause of the event was a legacy decision made in 2008 deferring installation of a manufacturer upgrade that would have prevented the failure. Corrective actions include installing the upgrade on all MSIVs on both units, and reviewing previous deferral decisions made using the same decision-making process.

LER 374-2017-001: On January 23, 2017, operators initiated a manual scram of the LaSalle County Station Unit 2 reactor as a result of observing a generator run-back due to a generator stator winding cooling (GC) system malfunction. Initial troubleshooting identified the most likely cause was plugging in the 'A' GC heat exchanger, based on inspection of the GC system flow-path components. The GC system was realigned to the 'B' heat exchanger until inspections could be performed in the upcoming refueling outage, and the unit was re-started on January 24, 2017. Further inspections of the GC components were performed while the unit was shut down for a planned refueling outage. These inspections determined the cause of the GC system failure was stem-disc separation in the 'A' GC heat exchanger inlet valve. The valve was repaired during the refueling outage. This event is reportable in accordance with 10 CFR 50.73(a)(2)(iv)(A) as an event or condition that resulted in manual or automatic actuation



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of the Reactor Protection System (RPS). There were no safety consequences associated with the event since there was no loss of safety function, and the RPS functioned as designed.

LER 374-2017-002: On January 30, 2017, during routine surveillance testing of the LaSalle County Station Unit 2 Division 3 Diesel Generator Cooling Water (DGCW) system, the cooling water strainer backwash valve was unable to open due to stem-disc separation. The valve was replaced, and the HPCS system was returned to operable on February 2, 2017. This condition could have prevented the HPCS system, a single train safety system, from performing its design function. There was minimal safety consequences associated with the event since the other emergency safety systems remained operable, and the Division 3 DGCW system remained functional as it retained the ability to provide the required flow through the system. The apparent cause of the stem-disc separation was erosion due to the carbon-steel valve internals in a raw water system environment.

COMPONENT FAILURE DATA

Manufacturer: Anchor Darling (A391)
Device: Gate Valve, 12-inch
Component ID: Model C900