



LaSalle County Station
2601 North 21st Road
Marseilles, IL 61341
815-415-2000 Telephone
www.exeloncorp.com

10 CFR 50.73

RA18-089

October 30, 2018

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 2018-001-00, Manual Reactor Scram due to Main
Condenser Vacuum Degradation

In accordance with 10 CFR 50.73(a)(2)(iv)(A), Exelon Generation Company, LLC
(EGC) is submitting Licensee Event Report (LER) Number 2018-001-00 for LaSalle
County Station, Unit 2.

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

Respectfully,

JOHN J. KOWALSKI FOR JOHN WASHKO


John Washko
Plant Manager
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, 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 LaSalle County Station, Unit 2	2. Docket Number 05000374	3. Page 1 OF 3
---	-------------------------------------	--------------------------

4. Title
Manual Reactor Scram due to Main Condenser Vacuum Degradation

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
08	31	18	2018	- 001	- 00	10	30	18	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)											
1	<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 checked="" type="checkbox"/> 50.73(a)(2)(iv)(A)			<input type="checkbox"/> 50.73(a)(2)(x)		
10. Power Level	<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)		
29	<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 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 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 John Van Fleet, Operations Director	Telephone Number (Include Area Code) (815) 415-2200
--	---

13. Complete One Line for each Component Failure Described in this Report

Cause	System	Component	Manufacturer	Reportable to ICES	Cause	System	Component	Manufacturer	Reportable to ICES
B	WK	Pipe	NA	Yes	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	Day	Year
		01	15	2019

Abstract (Limit to 1400 spaces, i.e., approximately 14 single-spaced typewritten lines)

On August 31, 2018, while operating at approximately 29 percent power, a reactor manual scram signal was inserted on Unit 2 due to main condenser vacuum degrading. The turbine was tripped following the scram. During the scram, one control rod did not fully insert but was manually fully inserted. The plant was in a stable condition, with reactor pressure being maintained by the turbine bypass valves, and reactor water level was controlled using feedwater. Except for the single control rod insertion, required safety systems and shutdown equipment performed as expected, and there was no impact to Unit 1. This condition was reported on August 31, 2018 (ENS 53576) in accordance with 10 CFR 50.72(b)(2)(iv)(B) for a reactor protection system (RPS) actuation. This condition is reportable in accordance with 10 CFR 50.73(a)(2)(iv)(A) as a condition that resulted in a valid actuation of the RPS.

The condition was attributed to localized impingement degradation of the turbine building equipment drain header resulting in through-wall failure. Corrective actions were taken to install a more robust welded temporary path on the drain header, with a header replacement scheduled for the upcoming Unit 2 refueling outage L2R17 (2019), revise procedures to incorporate lessons learned, and perform a causal investigation that will identify further actions to address identified deficiencies.



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

(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, 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	2. DOCKET NUMBER	3. LER NUMBER		
		YEAR	SEQUENTIAL NUMBER	REV NO.
LaSalle County Station, Unit 2	05000374	2018	- 001	- 00

NARRATIVE

PLANT AND SYSTEM IDENTIFICATION

LaSalle County Station Unit 2 is a General Electric Boiling Water Reactor with 3546 Megawatts Thermal Rated Core Power.

The affected system was the main condenser and turbine building equipment drains (TE) system. Specifically affected was the miscellaneous drain header (2TEC5A) from the A and B turbine-driven reactor feed pump (TDRFP) steam supply drain lines.

CONDITION PRIOR TO EVENT

Unit(s): 2 Date: August 31, 2018 Time: 2105 CDT
 Reactor Mode(s): 1 Mode(s) Name: Power Operation Power Level: 29 percent

DESCRIPTION

On August 31, 2018, at approximately 29 percent power and during a controlled unit shutdown to support a planned maintenance outage L2M20, a reactor manual scram signal was inserted due to main condenser vacuum degrading. The turbine was tripped following the scram. Main condenser vacuum was at approximately six inches mercury (Hg) of back-pressure and slowly improving following the scram and turbine trip. During the scram, one control rod (30-31) did not fully insert. This control rod was manually inserted to notch position 00 (fully inserted), with the first position identified as notch position 24 of 48 (fully withdrawn). The plant was in a stable condition, with reactor pressure being maintained by the turbine bypass valves, and reactor water level was controlled using feedwater.

Four weeks prior to the event, on August 3, 2018, Unit 2 off-gas flow suddenly increased to an abnormal level. A leak (approximately 3-inch diameter hole) was identified on a miscellaneous drain header 2TEC5A, in the heater bay. A temporary repair consisting of an 8-inch pipe that was cut in half to form a patch for the bottom of the header was installed. The fabricated patch included a clamping mechanism and a vent valve to divert the steam during its installation. The patch brought off-gas flow back down to normal.

As steam inputs into the header were removed during the unit shut down four weeks later, the dynamics at the patch changed which allowed air in-leakage to increase. When water was added via the TDRFP gland steam loop seal, air in-leakage was again significantly reduced at the patch. However, as more inputs changed to a vacuum, there was increased air in-leakage. This, combined with other air in-leakage sources, such as the steam packing exhaustor (SPE) loop seal not being full, eventually led to the degradation of main condenser vacuum requiring an unplanned manual scram.

CAUSE

A root cause investigation is in progress. The preliminary results of the investigation indicate that the miscellaneous drain header 2TEC5A may be susceptible to localized impingement degradation resulting in through-wall failure. The subject header has inputs from two one-inch orifices that provide continuous steam into the 2TEC5A header from the 'A' and 'B' TDRFP steam supply drain lines. One of the inputs discharges directly over the hole that developed in the bottom of the 2TEC5A header, and the other is within a few inches. These inputs create high velocity localized impingement. A supplement to this LER will be provided on the result of the causal investigation.



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

(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, 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	2. DOCKET NUMBER	3. LER NUMBER		
		YEAR	SEQUENTIAL NUMBER	REV NO.
LaSalle County Station, Unit 2	05000374	2018	- 001	- 00

NARRATIVE

REPORTABILITY AND SAFETY ANALYSIS

The event was reported on August 31, 2018 (ENS 53576) in accordance with 10 CFR 50.72(b)(2)(iv)(B) for an RPS actuation. This event is reportable in accordance with 10 CFR 50.73(a)(2)(iv)(A) as a condition that resulted in a valid actuation of the RPS.

While operating at approximately 29 percent power, a reactor manual scram signal was inserted on Unit 2 due to main condenser vacuum degrading. The turbine was tripped following the scram. During the scram, one control rod did not fully insert but was manually fully inserted. The plant was in a stable condition, with reactor pressure being maintained by the turbine bypass valves, and reactor water level was controlled using feedwater. Except for the single control rod insertion, required safety systems and shutdown equipment performed as expected, and there was no impact to Unit 1.

CORRECTIVE ACTIONS

Immediate corrective actions taken in response to the condition were:

- Operations personnel performed the required plant shutdown.
- A more robust welded temporary patch was installed on the drain header with a complete header replacement scheduled in the upcoming Unit 2 Refuel Outage L2R17.
- Procedure revisions were implemented as an interim action, to minimize the risk of a similar issue with the SPE loop seal during the start-up from L2M20.

Additional corrective actions will be determined following completion of the root cause investigation.

PREVIOUS OCCURRENCES

Searches were performed of the LaSalle Corrective Action Program (CAP) database, operating experience records, and licensee event reports for the previous three years. No similar previous events for LaSalle Station was identified for the system or failure mode. However, one event was found that involved a pipe vent valve leakage as listed below.

LER 374-2015-003-00

On August 7, 2015, LaSalle Unit 2 was in Mode 3 for a planned maintenance outage. During the initial drywell entry, a steam leak was observed on the reactor recirculation (RR) system line 2RR94AB-3/4", which is upstream of valve 2B33-F080B (RR Pump Discharge Valve 2B33-F067B Inspection Port - Reactor Side Upstream Stop Valve). The leak was determined to be pressure boundary leakage. Technical Specification 3.4.5, "RCS Operational Leakage," Required Actions C.1 and C.2 were entered, which required the unit to be in Mode 3 within 12 hours and in Mode 4 in 36 hours, respectively. The cause of the steam leak was determined to be poor weld quality and vibration induced fatigue. The weld was repaired during the maintenance outage.

COMPONENT FAILURE DATA

Manufacturer: NA
 Device: Turbine Drain Collecting Water Piping
 Component ID: 2TEC5A, Header, Piping, 8 Inch, for Turbine Drain Collection Water Piping (Cat ID 0001400796-4)