



Exelon Generation®

**LaSalle Station**

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10 CFR 50.73

RA13-032

June 17, 2013

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

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

Subject: Licensee Event Report 2013-001-00 Pin Hole Leaks Identified in High Pressure Core Spray Piping

In accordance with 10 CFR 50.73(a)(2)(v)(D) and 50.73(a)(2)(ii)(A), Exelon Generation Company (EGC), LLC, is submitting Licensee Event Report Number 2013-001-00 for LaSalle Unit 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

# 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.

<b>1. FACILITY NAME</b> LaSalle County Station, Unit 2	<b>2. DOCKET NUMBER</b> 05000374	<b>3. PAGE</b> 1 OF 3
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**4. TITLE**  
Pin Hole Leaks Identified in High Pressure Core Spray Piping

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
04	18	2013	2013	- 001 -	00	06	17	2013	N/A	N/A
									N/A	N/A

<b>9. OPERATING MODE</b>  3	<b>11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §:</b> <i>(Check all that apply)</i>
<b>10. POWER LEVEL</b>  000	<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 checked="" type="checkbox"/> 50.73(a)(2)(ii)(A) <input type="checkbox"/> 50.73(a)(2)(viii)(A) <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 type="checkbox"/> 50.73(a)(2)(i)(B) <input checked="" type="checkbox"/> 50.73(a)(2)(v)(D)

Specify in Abstract below or in NRC Form 366A

**12. LICENSEE CONTACT FOR THIS LER**

FACILITY NAME Manu Sharma, Engineering Programs Manager	TELEPHONE NUMBER <i>(Include Area Code)</i> 815-415-3815
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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>14. SUPPLEMENTAL REPORT EXPECTED</b> <input type="checkbox"/> YES <i>(If yes, complete 15. EXPECTED SUBMISSION DATE)</i> <input checked="" type="checkbox"/> NO	<b>15. EXPECTED SUBMISSION DATE</b>	MONTH	DAY	YEAR
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**ABSTRACT** *(Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)*

On April 18, 2013, Unit 2 was in Mode 3 following a scram and a loss of offsite power that had occurred on both LaSalle Units the previous day. At 1400 hours CDT, three pin hole through-wall leaks in the U2 High Pressure Core Spray (HPCS) minimum flow line piping were discovered. The leaks were on the outside bend of the first elbow downstream of the minimum flow restricting orifice, and appeared to be leaking a total of approximately 0.5 gpm with the HPCS pump not running.

Unit 2 HPCS was declared inoperable and, because the HPCS minimum flow line is in direct communication with the suppression pool, primary containment was also declared inoperable.

The direct cause of the event was a combination of cavitation and mechanical wear/erosion of the piping wall. The apparent cause was procedural inconsistencies that allowed operation of the HPCS system in minimum-flow for extended periods. Corrective actions included replacing the leaking pipe elbow, and performing ultrasonic inspections of susceptible piping on both Units. Also, HPCS operating procedures will be reviewed and revised as required to provide consistent guidance for minimizing operation of HPCS in minimum flow mode.

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

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
LaSalle County Station, Unit 2	05000374	YEAR	SEQUENTIAL NUMBER	REV NO.	2 OF 3
		2013	- 001	- 00	

**NARRATIVE**

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

**A. CONDITION PRIOR TO EVENT:**

Unit(s): 2	Event Date: April 18, 2013	Event Time: 1400 CDT
Reactor Mode(s): 3	Mode(s) Name: Hot Shutdown	Power Level: 0%

**B. DESCRIPTION OF EVENT:**

On April 18, 2013, Unit 2 was in Mode 3 following a scram and a loss of offsite power that had occurred on both LaSalle Units the previous day. At 1400 hours CDT, three pin hole through-wall leaks in the U2 High Pressure Core Spray (HPCS)[BG] minimum flow line piping were discovered. The leaks were on the outside bend of the first elbow downstream of the minimum flow restricting orifice, and appeared to be leaking a total of approximately 0.5 gpm with the HPCS pump not running.

Unit 2 HPCS was declared inoperable and, because the HPCS minimum flow line is in direct communication with the suppression pool, primary containment was also declared inoperable. The 2C Residual Heat Removal (RHR)[BO] loop was inoperable prior to the event, so Technical Specification (TS) 3.5.1 Required Action H.1 was entered, requiring entry in TS 3.0.3 and the plant to be placed in Mode 4 within 37 hours. Mode 4 was entered at 0250 hours CDT on April 19, 2013.

This occurrence is reportable under 10 CFR 50.73(a)(2)(v)(D) as an event or condition that could have prevented the fulfillment of a safety function needed to mitigate the consequences of an accident, and 10 CFR 50.73(a)(2)(ii)(A) as an event or condition that resulted in the condition of the nuclear power plant, including its principal safety barriers, being seriously degraded. An ENS notification was made to the NRC (EN # 48943) pursuant to 10 CFR 50.72(b)(3)(v)(D) and 50.72(b)(3)(ii)(A) at 2032 hours CDT on April 18, 2013.

This event constitutes a safety system functional failure.

**C. CAUSE OF EVENT:**

The direct cause of the event was a combination of cavitation and mechanical wear/erosion of the piping wall. The apparent cause was procedural inconsistencies that allowed operation of the HPCS system in minimum-flow for extended periods.

General Electric Operations and Maintenance Instructions GEK 63041A states that when in minimum flow mode following emergency operation, prompt operator action should be taken to either place HPCS in a test mode (establish flow through the full flow test valve) or in standby mode in order to minimize wear on the HPCS pump impeller.

Also, operation in minimum flow mode had been addressed in the LaSalle response to NRC Bulletin 88-04, "Potential Safety-Related Pump Loss". The response evaluated the adequacy of minimum flow bypass lines for safety-related centrifugal pumps. Based on this event, the caution added to procedures to consider securing ECCS pumps whenever possible rather than operate at minimum flow for extended periods of time will be strengthened.

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
LaSalle County Station, Unit 2	05000374	YEAR	SEQUENTIAL NUMBER	REV NO.	3    OF    3
		2013	-	001	

**NARRATIVE**

**D. SAFETY ANALYSIS:**

The safety significance of this event was minimal. Although the system was declared inoperable, HPCS was still available with pin hole leaks in the minimum flow line. Containment leakage from the pin hole leaks in the HPCS minimum flow line, although not quantified, would have been minimal due to their size. The leaks were discovered with the Unit shutdown in Mode 3, and the Unit was placed in Mode 4 within 13 hours of discovery.

**E. CORRECTIVE ACTIONS:**

- The leaking pipe elbow was replaced on Unit 2.
- An extent of condition wall-thickness ultrasonic inspection of piping and elbows downstream of the flow orifice on Unit 1 and Unit 2 HPCS minimum flow lines was performed.
- The first elbow after the flow orifice on the Unit 1 HPCS minimum flow line will be replaced during the next refueling outage.
- Operations procedures will be reviewed and revised as required to provide consistent guidance for minimizing operation of HPCS in minimum flow mode.
- ECCS lesson plans will be updated as needed to incorporate guidance for minimizing operation in minimum flow mode.

**F. PREVIOUS OCCURRENCES:**

A review identified no previous reportable events within the past ten years caused by piping leakage from erosion and/or corrosion.

**G. COMPONENT FAILURE DATA:**

Schedule 40, six inch diameter piping.