

Exelon Generation Company, LLC  
LaSalle County Station  
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May 13, 2002

10 CFR 50.73

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

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

Subject: Licensee Event Report

In accordance with 10 CFR 50.73(a)(2)(i)(B), Exelon Generation Company, (EGC), LLC, is submitting Licensee Event Report Number 02-001-00, Docket No. 050-374.

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

Respectfully,



Mark A. Schiavoni  
Plant Manager  
LaSalle County Station

Attachment: Licensee Event Report

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

JE22

**LICENSEE EVENT REPORT (LER)**

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

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 [bjsl@nrc.gov](mailto:bjsl@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.

<b>1. FACILITY NAME</b> LaSalle County Station, Unit 2	<b>2. DOCKET NUMBER</b> 05000374	<b>3. PAGE</b> 1 of 5
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**4. TITLE** Transient Increases in Unit 2 Unidentified Leakage Due to Clogged Drywell Floor Drain Sump Cover

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
03	16	2002	2002	001	00	05	13	02	LaSalle County Station, Unit 1	05000373
									FACILITY NAME	DOCKET NUMBER

<b>9. OPERATING MODE</b>	1	<b>11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §:</b> (Check all that apply)
<b>10. POWER LEVEL</b>	100	

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

**12. LICENSEE CONTACT FOR THIS LER**

<b>NAME</b> John Rommel, Engineering Programs Manager	<b>TELEPHONE NUMBER (Include Area Code)</b> (815) 415-3804
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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>				<b>15. EXPECTED SUBMISSION DATE</b>		
YES (If yes, complete EXPECTED SUBMISSION DATE)	<input checked="" type="checkbox"/>	NO				

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

On March 16, 2002, the calculated unidentified leakage on Unit 2 reached 3.0 gpm, which exceeded the value calculated the previous day by more than 2.0 gpm. Technical Specification (TS) 3.4.5.d limits the increase in unidentified leakage within the previous 24 hour period to less than or equal to 2.0 gpm. The increase in unidentified leakage was transient, and returned to normal values.

Troubleshooting indicated that debris collected on the drywell floor from previous maintenance activities had clogged the drywell floor drain. This debris restricted flow through the floor drain, which created a hold up of water on the drywell floor. This rendered the leakage detection system incapable of identifying increases in unidentified leakage of 2.0 gpm within 24 hours. Agitation of the debris from normal equipment shifts allowed the water to drain into the sump at an increased rate.

The cause was determined to be inadequate post-outage cleaning of the drywell floor. The drain covers and the drywell floor were cleaned. Periodic maintenance activities will be created to clean and inspect the drywell floor following refueling outages. The safety significance of the event was minor, since the unidentified leakage was less than TS limits, and redundant means to detect reactor coolant leakage were available.

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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): 2                                      Event Date: 03/16/02                      Event Time: 0155 Hours  
 Reactor Mode(s): 1                              Power Level(s): 100  
 Mode(s) Name: Run

**B. DESCRIPTION OF EVENT**

From July 2001 through March 2002, several events occurred where the indicated Unit 2 drywell unidentified leakage intermittently increased, as indicated by the drywell floor sump totalizer. The increase in leakage was typically 1-2 gpm, and lasted for approximately 24 hours. At 0155 on March 16, 2002, the calculated unidentified leakage value reached 3.0 gpm, which exceeded the value calculated the previous day by more than 2.0 gpm. Technical Specification (TS) 3.4.5.d limits the increase in unidentified leakage within the previous 24 hour period to less than or equal to 2.0 gpm.

At 0555 on March 16, 2002, Unit 2 entered TS 3.4.5 Required Actions C.1 and C.2, which require the plant to be in Mode 3 in 12 hours and Mode 4 in 36 hours. At 1215, a normal plant shutdown was commenced, and at 1255 the NRC was notified via the Emergency Notification System (ENS) in accordance with 10 CFR 50.72(b)(2)(i).

By 1540 on March 16, 2002, the indicated unidentified leakage had decreased such that the increase over the previous 24 hours was 1.7 gpm, which was less than the TS limit of 2.0 gpm. The TS Required Actions were exited with the plant at approximately 69 percent power, and an update to the ENS call was made at 2114. Unit 2 was subsequently returned to full power.

A troubleshooting plan to identify the cause of these transient indications was developed and implemented. Steps that could be performed outside of the drywell were completed first. The preliminary conclusion was that the transients were caused by real changes in flow into the floor sump, but were not due to increases in the actual reactor coolant leakage. The cause was that an accumulation of water was occurring within the drywell, with a subsequent release. The two locations identified within the drywell that could hold the quantity of water seen during the different events were the containment ventilation (VP)[VB] cooling drain system (cooler basins and piping) and the drywell floor.

Planned outage L2P01 began on April 9, 2002, and a drywell inspection was performed with the reactor vessel pressure at approximately 400 psig. This inspection found that leakage within the drywell was essentially limited to known leakage from the Residual Heat Removal (RHR)[BO] Shutdown Cooling Suction Valve 2E12-F009. There was approximately 1/4 inch of standing water on the floor, and water in the VP cooler drain basins.

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The cooler drain system was found to be flowing freely and was eliminated as the possible cause of the transients. Inspection of the drywell floor and floor drain system found that the drain holes on the floor drain screen were partially clogged, restricting the flow of water. Minor agitation of the debris for sample collection resulted in an increase in drain flow of approximately 1.0 gpm, which was about the same magnitude that was seen in the previous transients. Vacuuming the debris off the surface of the screen resulted in drain flows of greater than 5.0 gpm.

The conclusion was that debris - mainly paint powder - collected on the drywell floor from previous maintenance activities (e.g., grinding and scraping) and was transported to the drywell floor drain by leakage from the 2E12-F009 valve. The build up of debris was sufficient to restrict water flow through the floor drain to the drywell floor sump, which created an accumulation of water on the drywell floor. Occasional agitation of the debris on the drain cover from normal equipment shifts was adequate to significantly increase flow to the sump and indicate an increase in drywell unidentified leakage. The increased flow was of sufficient magnitude and duration to drain the water that had collected on the drywell floor. The average, steady state leakage remained constant.

On April 16, 2002, it was determined that this condition had rendered the leak detection system incapable of detecting a 2.0 gpm increase within a 24 hour period as required by TS 3.4.5.d. This is a condition prohibited by TS, and is reportable under 10 CFR 50.73(a)(2)(i)(B).

**C. CAUSE OF EVENT**

The root cause of this event was inadequate housekeeping in the drywell. Cleaning of the drywell floor and other surfaces has not been routinely performed to a sufficient level following refueling outages, allowing the accumulation of small debris, which could be transported to the floor drain.

A contributing factor was that the drywell floor drain screen cover design did not consider the potential for fine debris to result in a significant flow restriction.

**D. SAFETY ANALYSIS**

Drywell leakage that is within the limits of Technical Specifications is not risk significant. Drywell leakage is not modeled as an initiating event, nor is the drywell leakage monitoring system modeled as a mitigating system for a transient or accident condition. Although minor unidentified drywell leakage could potentially mask the effects of a LOCA inside containment, the station has confirmed that the leakage is not due to a LOCA. Even so, LOCAs do not represent a large risk contribution in the LaSalle PRA.

Degradation of the drywell leakage detection system, including potential inoperability of the drywell floor drain sump flow monitoring system, is not risk significant because of multiple independent means existing to identify precursors of a LOCA. The three means of detecting leakage inside the drywell are:

- Drywell floor drain sump flow rate (degraded)
- Drywell gaseous and particulate radioactivity levels
- Drywell air cooler condensate flow rate

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

Based on the defense-in-depth in the remaining two systems, adequate containment leakage detection was available. Therefore, the risk significance of the drywell floor drain sump in a degraded condition is low. This event is not considered a Safety System Functional Failure.

**E. CORRECTIVE ACTIONS**

Corrective Action:

1. The debris was removed from the floor drain screen cover and the drywell floor was thoroughly cleaned (Complete).

Corrective Actions to Prevent Recurrence:

2. A periodic maintenance activity and guidance document to perform a thorough cleaning of the drywell after each refueling outage will be created for both Units. (AR# 99520-12).
3. A redesigned floor drain screen cover was installed on Unit 2 during L2P01. (Complete).
4. The design of the floor drain screen cover for Unit 1 will be evaluated, and an appropriate design will be installed during the next drywell entry on Unit 1 (AR# 99520-15).

**F. PREVIOUS OCCURRENCES**

The INPO Plant Events Database was searched for similar events. The following six (including one from LaSalle) are similar to this event:

- LER 455-97-001 Containment Floor Drains Clogged With Debris (Byron).
- LER 373-97-021 Degradation of Leak Detection System (LaSalle).
- LER 454-98-004 Reactor Coolant Leak Detection System Inoperable Due to Personnel Error (Byron).
- LER 424-99-001 Containment Sump Operation Outside of Technical Specifications, (Vogtle).
- Plant Event Report #120-980905-2 Drywell Leakage Detector Inoperable due to Corrosion Product Blockage at Laguna Verde Unit 2.
- Plant Event Report #120-980919-1 Potential Inoperability of Drywell Leak Detection due to Floor Drain Obstruction at Laguna Verde Unit 2.

In each of these events a method(s) of leak detection inside containment was either degraded or inoperable due to the development of a water reservoir or holdup volume. In four of the six events, the water holdup was caused by debris clogging some drain flow path. However, none of the clogging was caused by an unexpected accumulation of foreign material on the containment floor. In these four events, the flow path had clogged either because it was not properly installed or because it had not been inspected or cleaned.

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**G. COMPONENT FAILURE DATA**

Since no component failure occurred, this section is not applicable.