LaSalle Generating Station
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Exelon Nuclear

10 CFR 50.73

RA11-053

September 8, 2011

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555

LaSalle County Station, Unit 1 and Unit 2
Facility Operating License No. NPF-11 and NPF-18
NRC Docket No. 50-373/50-374

Subject: Licensee Event Report 2010-003-01

Enclosed is revision one to Licensed Event Report, Standby Liquid Control Test Tank Seismic Analysis. The original submission did not include the reporting requirements pursuant to 10CFR50.73(a)(2)(v)(D), "Any event or condition that could have prevented the fulfillment of the safety function of structures or systems that are needed to mitigate the consequences of an accident." Exelon Generation Company (EGC), LLC, is submitting Licensee Event Report Number 2010-003-01.

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

Respectfully,

Peter J. Karaba
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 (10-2010) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0104 EXPIRES: 10/31/2013

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.

# LICENSEE EVENT REPORT (LER)

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

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| LaSalle County Station, Unit 1 | 05000373 | 1 OF 3 |

**4. TITLE**
Standby Liquid Control Test Tank Seismic Analysis

| 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 |
| | | | | | | | | | LaSalle County Station, Unit 2 | 05000374 |
| 10 | 28 | 2010 | 2010 | - 003 - | 01 | 09 | 16 | 2011 | FACILITY NAME | DOCKET NUMBER |
| | | | | | | | | | | |

**9. OPERATING MODE**
1

**10. POWER LEVEL**
100

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

| | | | |
|---|---|---|---|
| ☐ 20.2201(b) | ☐ 20.2203(a)(3)(i) | ☐ 50.73(a)(2)(i)(C) | ☒ 50.73(a)(2)(vii) |
| ☐ 20.2201(d) | ☐ 20.2203(a)(3)(ii) | ☐ 50.73(a)(2)(ii)(A) | ☐ 50.73(a)(2)(viii)(A) |
| ☐ 20.2203(a)(1) | ☐ 20.2203(a)(4) | ☐ 50.73(a)(2)(ii)(B) | ☐ 50.73(a)(2)(viii)(B) |
| ☐ 20.2203(a)(2)(i) | ☐ 50.36(c)(1)(i)(A) | ☐ 50.73(a)(2)(iii) | ☐ 50.73(a)(2)(ix)(A) |
| ☐ 20.2203(a)(2)(ii) | ☐ 50.36(c)(1)(ii)(A) | ☐ 50.73(a)(2)(iv)(A) | ☐ 50.73(a)(2)(x) |
| ☐ 20.2203(a)(2)(iii) | ☐ 50.36(c)(2) | ☒ 50.73(a)(2)(v)(A) | ☐ 73.71(a)(4) |
| ☐ 20.2203(a)(2)(iv) | ☐ 50.46(a)(3)(ii) | ☐ 50.73(a)(2)(v)(B) | ☐ 73.71(a)(5) |
| ☐ 20.2203(a)(2)(v) | ☐ 50.73(a)(2)(i)(A) | ☒ 50.73(a)(2)(v)(C) | ☐ OTHER |

**12. LICENSEE CONTACT FOR THIS LER**

| FACILITY NAME | TELEPHONE NUMBER *(Include Area Code)* |
|---|---|
| William (Bill) Hilton, Design Engineering Manager | (815) 415-3912 |

**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 |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |

**14. SUPPLEMENTAL REPORT EXPECTED**

☐ YES *(If yes, complete 15. EXPECTED SUBMISSION DATE)* ☒ NO

**15. EXPECTED SUBMISSION DATE**

| MONTH | DAY | YEAR |
|---|---|---|
| | | |


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

As part of an NRC Component Design Bases Inspection, the seismic analysis of the Unit 1 and Unit 2 Standby Liquid Control (SBLC) system test tanks was challenged. On October 27, 2010, the operability determination process was initiated and Engineering began verifying design data and calculations. During this review, on October 28, 2010, Engineering determined that the historical calculation used the wrong formula in determining the test tank's natural frequency. The consequence is that if the test tank is filled with water, the possibility exists that the test tank could fall over during a seismic event and adversely affect both trains of SBLC. Calculations confirm that with the test tanks empty, the mounting is seismically qualified. The SBLC test tanks on both units had been drained of water on October 27, 2010, and thus both Unit 1 and 2 SBLC systems were fully operable upon discovery of the calculation error.

This error occurred in 1981 and therefore is historical. The cause of the event was less than adequate (historical) design information and analysis. The current process for performing design analyses requires an owner review of vendor calculations. An acceptance review of the vendor calculations prior to issuing the document is procedurally required. Corrective actions included performing a Engineering evaluation to support the seismic analysis of the SBLC test tank mounting with the test tank drained, and draining of the test tank.

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NARRATIVE

LaSalle County Station (LSCS) Unit 1 is a General Electric Boling Water Reactor with 3546 Megawatts Thermal Rated Core Power. Unit 2 is a General Electric Boiling Water Reactor with 3489 Megawatts Thermal Rated Core Power.

A. CONDITION PRIOR TO EVENT:

Unit(s): 1 and 2 Event Date: October 28, 2010 Event Time: 1045 CDT
Reactor Mode(s): 1 Mode(s) Name: Power Operation Power Level: 100 percent

B. DESCRIPTION OF EVENT:
During the NRC Component Design Bases Inspection, the seismic analysis of the Unit 1 and Unit 2 Standby Liquid Control (SBLC) [BR] system test tanks was challenged. On October 27, 2010, the operability determination process was initiated, and Engineering began verifying design data and calculations. The SBLC test tanks on both units were drained of water on October 27, 2010. On October 28, 2010, Engineering determined that the historical calculations used the wrong formula in determining the test tank's natural frequency. The consequences of this event is that if the test tank is filled with water, the possibility exists that the test tank could fall over during a seismic event and adversely affect both trains of SBLC. Calculations confirm that with the test tanks empty, the mounting is seismically qualified. Therefore, the Unit 1 and Unit 2 SBLC systems were fully operable upon discovery of the calculation error.

The event was reported to the NRC Operations Center at 1521 (ET) on October 28, 2010 (EN # 46372). The event is reportable in accordance with 10CFR50.73(a)(2)(v)(A)/(C)/(D), an event or condition that could have prevented the fulfillment of the safety function of structures or systems that are needed to shutdown the reactor and maintain it in a safe condition, control the release of radioactive material, and mitigate the consequences of an accident. In addition this event is reportable under 10CFR50.73(a)(2)(i)(B), a condition which is prohibited by Technical Specification. The potential for both trains of SBLC system to be inoperable existed for a period of time greater than allowed by the LSCS Technical Specification. This event is also reportable under 10CFR50.73(a)(2)(vii), an event where a single cause or condition caused two independent trains to become inoperable in a single system. A failure of the SBLC test tank had the potential to render both trains of SBLC inoperable.

C. CAUSE OF EVENT:
The possibility of non-safety-related, non-seismic items falling over during a seismic event was not a consideration in the original design of LSCS. It was identified as an industry issue near the completion of LSCS's construction. An evaluation of the test tank seismic mounting was performed by an outside vendor and documented in a design analysis. In 1981 the analysis demonstrated the adequacy of the fasteners that attached the test tank's legs to the floor but, did not verify the structural adequacy of the legs. Typically, a separate design analysis is performed to address structural integrity of the test tank mounting to withstand hydrodynamic loads resulting from a seismic event. A search of the LSCS's controlled documents did not identify the existence of such an analysis. The existing mounting design analysis was inaccurate and incomplete to support

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NARRATIVE

structural integrity of the SBLC test tank. The cause of the event is less than adequate (historical) design analysis and information.

D. SAFETY ANALYSIS:
The safety significance of this event is minimal. The safety function of the SBLC system is to provide the capability of bringing the reactor, at any time in a fuel cycle, from full power and minimum control rod inventory to a subcritical condition. The probability of a design basis earthquake concurrent with an anticipated transient without scram (ATWS) condition is low. Additionally there is procedural guidance for injecting sodium pentaborate solution using the Reactor Water Clean-up (RWCU) system with the SBLC system unavailable.

E. CORRECTIVE ACTIONS:
This event occurred in 1981 and therefore is historical. An Engineering evaluation was performed to support seismic analysis of the SBLC test tank mounting with the test tank drained. Procedural controls have been put in place to direct the operator to drain the SBLC test tank following surveillance testing that requires use of the test tank.

F. PREVIOUS OCCURRENCES:
A review of LSCS Licensee Event Reports (LERs) for the last three years did not identify any LERs associated with seismic analysis of the SBLC system.

G. COMPONENT FAILURE DATA:
Component failures were not involved with this event.