



RS-16-080

10 CFR 50.71(e)  
10 CFR 50.59  
10 CFR 72.48

April 11, 2016

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

LaSalle County Station, Units 1 and 2  
Facility Operating License Nos. NPF-11 and NPF-18  
NRC Docket Nos. 50-373, 50-374, and 72-70

Subject: LaSalle County Station Updated Final Safety Analysis Report (UFSAR), Revision 22  
and Fire Protection Report (FPR), Revision 7

In accordance with the requirements of 10 CFR 50.71, "Maintenance of records, making of reports," paragraph (e)(4), Exelon Generation Company (EGC), LLC submits Revision 22 to the Updated Final Safety Analysis Report (UFSAR) for LaSalle County Station (LSCS), Revision 7 to the Fire Protection Report (FPR) and summaries of evaluations conducted pursuant to 10 CFR 50.59, "Changes, tests, and experiments" and 10 CFR 72.48. "Changes, tests, and experiments."

The UFSAR is being submitted on Optical Storage Media (OSM) in its entirety, including documents incorporated by reference (e.g., Technical Requirements Manual and Technical Specifications Bases). All UFSAR pages changed as a result of this update are clearly delineated with "Rev. 22, APRIL 2016" in the page footer.

One OSM is included in this submission. The OSM labeled, "Exelon Nuclear – LaSalle County Station UFSAR Rev. 22, April 2016," contains the following components:

- 001 LAS UFSAR Rev. 22.pdf, 681 megabytes, publicly available
- 002 LAS TRM, 4.11 megabytes, publicly available
- 003 LAS Tech Spec Bases.pdf, 1.74 megabytes, publicly available
- 004 LAS FPR Rev. 7.pdf, 10.1 megabytes, publicly available

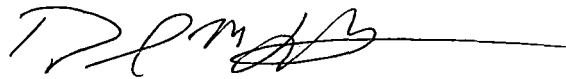
A053  
NM5524  
NRR  
NM55

Attachment A provides a brief summary of the changes incorporated into UFSAR Revision 22. Attachment B provides a brief summary of the changes incorporated into the FPR, Revision 7. Attachment C provides the summary report pursuant to 50.59(d)(2). These activities were evaluated in accordance with the requirements of 10 CFR 50.59, and were implemented in calendar years 2014, 2015 and 2016. Attachment D provides the initial LaSalle County Station summary report pursuant to 72.48(d)(2). This report indicates that no 10 CFR 72.48 evaluations were performed from the initiation of dry cask storage activities through the end of 2015. Attachment E contains the directory path, filename, and size of each individual file.

As required by 10 CFR 50.71(e)(2)(i), I, Manager-Licensing, certify that to the best of my knowledge, the information contained in the enclosures and attachments to this letter accurately reflect information and analyses submitted to the NRC or prepared pursuant to NRC requirements, and changes made under the provisions of 10 CFR 50.59 and 10 CFR 72.48.

There are no commitments in this letter. Should you have any questions concerning this submittal, please contact Amy Hambly at (630) 657-2808.

Respectfully,



David M. Gullott  
Manager – Licensing

Enclosure: OSM – LaSalle County Station – UFSAR Revision 22, FPR Revision 7

Attachments:

Attachment A, "LaSalle UFSAR Revision 22 Change Summary Report"  
Attachment B, "LaSalle FPR Revision 7 Change Summary Report"  
Attachment C, "LaSalle 10 CFR 50.59 Evaluation Summary Report"  
Attachment D, "LaSalle 10 CFR 72.48 Evaluation Summary Report"  
Attachment E, "OSM Directory Structure"

cc: Regional Administrator – NRC Region III  
NRC Senior Resident Inspector – LaSalle County Station  
NRC Project Manager, NRR – LaSalle County Station

## ATTACHMENT A

### LaSalle UFSAR Revision 22 Change Summary Report

**LUCR-0364**      **Revision to UFSAR Sections 4.1, 4.2, 4.3, 4.4, 5.2, 6.2, 6.3, 6.B, 15.0, 15.1, 15.2, 15.3, 15.4, 15.7, 15.10, and 15.A.**

Revised UFSAR Sections 4.1, 4.2, 4.3, 4.4, 5.2, 6.2, 6.3, 6.B, 15.0, 15.1, 15.2, 15.3, 15.4, 15.7, 15.10, and 15 Appendix A to incorporate Unit 1 Reload 16 Cycle 17 fuel updates.

**LUCR-0362**      **Removal of alarm trips from the Hydrogen Water Chemistry (HWC) system.**

Revised UFSAR Section 5.4.15.1.2 and Table 5.4-2 to remove trips for Hydrogen Flow, Hydrogen Pressure, Isolation Monitors in Test, and Hydrogen Injection Module Water Flow Differential Pressure.

**LUCR-0360**      **Revision to UFSAR Sections 3.9.6 and 5.2.4.1.**

Revised UFSAR Sections 3.9.6 and 5.2.4.1 to add detail on the inability to gain greater than 90% coverage on some welds within the scope of GL 88-01.

**LUCR-0359**      **Revision to UFSAR Sections 3.1.2.2.9 and Appendix B.**

Revised UFSAR Sections 3.1.2.2.9 and Appendix B to clarify that the surveillance frequency requirement for EDG Protective-Trip Bypass Test, Loss of Offsite Power (LOOP) Test, Combined Safety Injection Actuation Signal (SIAS) and LOOP Tests, and Synchronizing Test are controlled by the Surveillance Frequency Control Program (SFCP).

**LUCR-0356**      **Revision to UFSAR Section 2.5.5.2.5.a.**

Revised UFSAR Section 2.5.5.2.5.a. to fix editorial omission of the word "not" in a sentence discussing the impact of shad net failure due to a seismic event.

**LUCR-0355**      **Revision to UFSAR Figure 9.5-1 Sheet 22**

Revised UFSAR Figure 9.5-1 Sheet 22 to change fire Zone 5C11 to include DG Corridor Vestibule.

**LUCR-0353**      **Revision to UFSAR Sections 6.2.4.2.2 and 7.A.3.2.1.**

Revised UFSAR Sections 6.2.4.2.2 and 7.A.3.2.1 for Unit 1 Reactor Building Closed Cooling Water System (RBCCW) PCIV Logic.

**LUCR-0352**      **Revision to UFSAR Sections 5.2.4.1 and 3.9.6.**

Revised UFSAR Sections 5.2.4.1 and 3.9.6 to clarify that Risk informed in-service inspection program includes all Class 1 and 2 BWRVIP-75 Category A welds.

**LUCR-0349**      **Revision to UFSAR Section 8.3.1.1.2**

Revised UFSAR Section 8.3.1.1.2 to add description of time delay for Division 1 and 2 DG output breaker reclosure.

## ATTACHMENT A

### LaSalle UFSAR Revision 22 Change Summary Report

#### **LUCR-0348**      **Revision to UFSAR Section 6.2 and Attachment 6.C**

Revised UFSAR Section 6.2 and Attachment 6.C to remove historical information related to transient and accident analyses.

#### **LUCR-0346**      **Revision to UFSAR Sections 3.7.4.2.1 and 3.7.4.3**

Revised UFSAR Sections 3.7.4.2.1 and 3.7.4.3 to describe laptop storage capability and to remove references to a printer for the seismic monitor.

#### **LUCR-0345**      **Revision to UFSAR Sections 8.1.1, 8.2.1.3, 8.2.2, and 8.2.4.**

Revised UFSAR Sections 8.1.1, 8.2.1.3, 8.2.2, and 8.2.4 to remove historical information related to Mid-America Interconnected Network (MAIN).

#### **LUCR-0344**      **Revision to UFSAR Sections 2.4.2.3 and 3.4.1.4**

Revised UFSAR Section 2.4.2.3 to state the flood elevation is below the plant floor elevation rather than plant grade elevation and 3.4.1.4 to state that the flood protection measures are described in Subsection 3.4.1.3 rather than 3.4.1.1.

#### **LUCR-0343**      **Revision to UFSAR Sections 4.1, 4.2, 4.3, 4.4, 5.2, 6.3, 15.0, 15.1, 15.2, 15.3, 15.4, 15.7, and 15 Appendix A.**

Revised UFSAR Sections 4.1, 4.2, 4.3, 4.4, 5.2, 6.3, 15.0, 15.1, 15.2, 15.3, 15.4, 15.7, and 15 Appendix A to incorporate Unit 2 Cycle 15 fuel reload updates.

#### **LUCR-0342**      **Revision to UFSAR Section 9.2.11.3 and Figure 6.2-31 (Sheet 7 of 10).**

Revised UFSAR Section 9.2.11.3 and Figure 6.2-31 (Sheet 7 of 10) to remove blind flange from detail due to permanent installation of Residual Heat Removal (RHR) spool piece #8.

#### **LUCR-0340**      **Revision to UFSAR Sections 5.2.3.2.1 and 5.4.8.2**

Revised UFSAR Sections 5.2.3.2.1 and 5.4.8.2 to add On Line Noble Chem (OLNC) application process.

#### **LUCR-0338**      **Revision to UFSAR Sections 2.3, 9.2, and 10.4; Figures 9.2-2 and 9.2-3; and Appendix B.**

Revised UFSAR Sections 2.3, 9.2, and 10.4; Figures 9.2-2 and 9.2-3; and Appendix B to incorporate Units 1 and 2 License Amendments Nos. 218 and 204 for TS 3.7.3, "Ultimate Heat Sink."

#### **LUCR-0336**      **Revision to UFSAR Section 8.3.1.1.2 and Figure 8.3-1.**

Revised UFSAR Section 8.3.1.1.2 and Figure 8.3-1 to describe Unit 1 KV Bus Transfer Logic Modifications for an Open Phase Condition Concurrent with a LOCA.

## ATTACHMENT A

### LaSalle UFSAR Revision 22 Change Summary Report

**LUCR-0334**      **Revision to UFSAR Section 9.5.2.2.5**

Revised UFSAR Section 9.5.2.2.5 to remove unnecessary detail regarding the specific number of communication channels.

**LUCR-0324**      **Revision to UFSAR Section 9.2.11.3**

Revised UFSAR Section 9.2.11.3 to add clarifying statement regarding spool piece permanent installation.

**LUCR-0313**      **Revision to UFSAR Sections 9.4.2.2, 9.4.3.4.2, and 9.4.4.2**

Revised UFSAR Sections 9.4.2.2, 9.4.3.4.2, and 9.4.4.2 to clarify that the evaporative coolers are abandoned in place and water supply administratively closed.

**LUCR-0304**      **Revision to UFSAR Section 9.1.3.2.2**

Revised UFSAR Section 9.1.3.2.2 to describe that there are separate narrow and wide range level systems, and the new wide-range water level instrumentation installed in the spent fuel pool.

## ATTACHMENT B

### LaSalle FPR Revision 7 Change Summary Report

FDRP	Description
LF2014-002	<p>LF2014-002 revised the Fire Protection Report (FPR) NFPA Code Deviations:</p> <p>To allow surveillance testing of certain fire detection systems every two years instead of annually based on results from performance based evaluations in EC 394900. The following statement was added to the fire protection report NFPA code deviations:</p> <p><u>For existing NFPA Code 13A, deviation 13A-21, revised to state the following:</u></p> <p>For NFPA code 13A, section 4-12.3, "Test detection systems semi-annually and alarms quarterly according to the procedures suggested by the manufacturer" inserted the following deviation: "The Diesel Generator CO<sub>2</sub> total flooding detection systems are tested annually. Refer to Downers Grove Doc ID #'s DG99-000028 and 000145 for justification. All other detection systems are tested every two years. Refer to EC 394900 for justification."</p> <p><u>For new NFPA Code 72E deviation 72E-2, add the following:</u></p> <p>For NFPA code 72E, sections 7.3.15, "Smoke Detectors shall be tested semi-annually in accordance with the manufacturer's instructions" inserted the following deviation: "All smoke detection systems are tested every two years. Refer to EC 394900 for justification."</p>
LF2014-003	<p>LF2014-003 revised the Fire Protection Report NFPA Code Deviations:</p> <p>To allow surveillance testing of Halon Systems annually instead of every 6 months based on results from performance based evaluations in EC 396738. The following statement was added to the fire protection report NFPA code deviations:</p> <p><u>For new NFPA Code 12A deviation 27, add the following:</u></p> <p>For NFPA code 12A sections 1715, "At least semi-annually, the weight and pressure of refillable containers shall be checked. If a container shows a loss in net weight of more than 5 percent or a loss of pressure (adjusted for temperature) of more than 10 percent, it shall be refilled or replaced." Added the following deviation: "Halon tests are conducted annually under LaSalle surveillance LMS-FP-17. See EC 396738 for the evaluation."</p>
LF2014-004	<p>LF2014-004 revised the Fire Protection Report:</p> <p>To create NFPA Code deviation 13-23A against NFPA 13-1976 for the MAF Sprinkler System. There are no sprinkler heads underneath the MAF ventilation ducts that are greater than 48". A copy of the deviation and the justification is provided in FPR Change Package LF2014-004. A mark of the deviation is attached to the change package.</p>

## ATTACHMENT B

### LaSalle FPR Revision 7 Change Summary Report

FDRP	Description
LF2014-005	<p>LF2014-005 revised the Fire Protection Report to make the following changes as summarized below:</p> <ol style="list-style-type: none"> <li>1. Table H.3-2 sheet 7 of 22, for fire zone 4D1, changed "precaution sprinkler" to "pre-action suppression".</li> <li>2. Table H.3-2 Sheet 7 of 22, for fire zone 4D2, changed "sprinkler" to "suppression".</li> <li>3. Table H.3-2 sheet 14 of 22, for fire zone 4D1, changed "Pre-action sprinkler" to "Pre-action suppression".</li> <li>4. Section H.3.4.12, page H.3-79, for fire zone 4E1, in the Protection Criteria and Measures section, changed "resistance" to "resistant".</li> <li>5. Section H.3.4.13, page H.3-81, for fire zone 4E2, in the Protection Criteria and Measures section, changed "resistance" to "resistant".</li> <li>6. Section H.3.4.8, page H.3-73, for fire zone 4D1, in the Protection Criteria and Measures section, changed "sprinkler" to "suppression".</li> <li>7. Section H.3.4.8, page H.3-73, for fire zone 4D1, in the Extinguishing section, changed "sprinkler" to "suppression".</li> <li>8. Section H.3.4.8, page H.3-74, for fire zone 4D1, in the Extinguishing section at the top of the page, add a sentence "The cable spreading room suppression system is a combined spray and sprinkler system."</li> <li>9. Section H.3.4.8, page H.3-74, for fire zone 4D1, in the Extinguishing section at the top of the page, changed "sprinkler" as marked up in four locations as marked up on the sheet provided.</li> <li>10. Section H.3.4.8, page H.3-74, for fire zone 4D1, in the Design Basis Fire section, changed "protection" to "suppression".</li> <li>11. Section H.3.4.9, page H.3-74, for fire zone 4D2, in the Protection Criteria and Measures section, changed "protection" to "suppression".</li> <li>12. Section H.3.5.3, page H.3-95, for fire zone 5A3, in the Protection Criteria and Measures section, changed "sprinkler" to "suppression".</li> <li>13. Section H.3.5.3, page H.3-95, for fire zone 5A3, in the Design Basis Fire section, changed "sprinkler" to "suppression".</li> </ol>

## ATTACHMENT B

### LaSalle FPR Revision 7 Change Summary Report

FDRP	Description
LF2014-005 Continued	<p>14. Section H.3.5.28, page H.3-131, for fire zone 5C11, in the Protection Criteria and Measures section, changed "pre-action" to "pre action".</p> <p>15. Section H.3.5.28, page H.3-132, for fire zone 5C11, in the Extinguishing section, changed "sprinkler" to "suppression".</p> <p>16. Section 6, Suppression Effects Analysis, page 6-13, for fire zones 4D1 and 4D2, changed "pre-action sprinkler" to "pre-action suppression".</p> <p>17. Section 6, Suppression Effects Analysis, page 6-14, for fire zone 4F3, changed "sprinkler" to "suppression".</p> <p>18. Section 6, Suppression Effects Analysis, page 6-17, for fire zone 5C11, changed "sprinkler" to "suppression" in two locations as shown on the marked up copy provided in the change package.</p>
LF2015-001	<p>LF2015-001 revised the Fire Protection Report to make the following changes as summarized below:</p> <ol style="list-style-type: none"> <li>1. FPR Section H.3.4.13, page H.3-81, for fire zone 4E-2, changed "Unit 1" to "Unit 2".</li> <li>2. FPR Table H.4-6 (sheet 4 of 4), EPN 2PL73J at elevation 731, changed nomenclature from "CSCS Equip. Cooling RHR Ser. 1A &amp; B Cubicle Control Panel" to "CSCS Equip. Cooling RHR Ser. 2A &amp; 2B Cubicle Control Panel"</li> <li>3. FPR Table H.4-7 (sheet 3 of 3), changed EPN (Equipment Piece Number) "2D014E" to "2DC14E".</li> <li>4. FPR Table H.4-7 (sheet 3 of 3), changed EPN "2D015E" to "2DC15E".</li> <li>5. FPR Table H.4-7 (sheet 3 of 3), EPN 2H13-P623 at elevation 731, changed Fire Area/Zone "4E1-1" to "4E2-1".</li> <li>6. FPR Table H.4-60 (sheet 1 of 9), EPN 1H13-P623, added component description of "Outboard Valve Relay VB".</li> <li>7. FPR Table H.4-61 (sheet 1 of 4), EPN 2H13-P623, added component description of "Outboard Valve Relay VB".</li> <li>8. FPR Table H.4-62 (sheet 1 of 8), EPN 2H13-P622, added component description of "Inboard Valve Relay VB".</li> <li>9. FPR Table H.4-62 (sheet 4 of 8), RHR Injection Valve, changed EPN from "2E12-F024B" to "2E12-F042B".</li> <li>10. FPR Table H.4-66 (sheet 5 of 6), RHR Bypass to Test Checks Valve, changed EPN from "2E12-F009A" to "2E12-F099A".</li> <li>11. FPR Table H.4-124, Unit 1, RWCU Panel, changed EPN from "1033-Z001-26" to "1G33-Z001-26".</li> </ol>



## ATTACHMENT B

### LaSalle FPR Revision 7 Change Summary Report

FDRP	Description
LF2015-001 Continued	<p>12. FPR Table H.4-124, Unit 2, RWCU Panel, changed EPN from "2033-Z001-26" to "2G33-Z001-26".</p> <p>13. FPR Section H.7 <u>Communications</u>, revised to read as; "UFSAR Section 9.5.2.2 discusses the diversity in the LaSalle communications system. The distribution and diversity of the communication systems at LaSalle Station are spread out such that a single fire anywhere in the plant only affects a small portion of the system. The remaining portion of the system outside the affected fire zone is protected and it will be available and provide more than adequate coverage to Operations and Emergency personnel."</p>
LF2015-002	LF2015-002 revised Fire Protection Report Section H.3.5.28, page H.3-130. EC 403363 Rev.001 re-routes line 1DG05A-4" to eliminate the exterior routing below grade. The EC also removed Door D-478, which is between the Unit 1 DG Corridor and the DG Corridor Vestibule. The exterior walls and roof of the vestibule are qualified as the relocated boundary of fire zone 5C11. The FPR is updated to document the barrier discussion for fire zone 5C11. Note: UFSAR Change # LUCR-355 updated the UFSAR Figure 9.5-1 Sheet 22 to also show the fire barrier changes discussed in package LF2015-002.

## ATTACHMENT C

### LaSalle 10 CFR 50.59 Evaluation Summary Report

#### **L14-117 – REMOVAL OF OFFGAS VULNERABILITIES ON VALVE 2N62-F057**

##### **Description of Activity:**

The proposed activity is to replace the air operated valve actuator on valve 2N62-F057 for Unit 2. The existing actuator is air operated and fails closed on a reversing spring. Air supplied to the actuator opens valve 2N62-F057 and maintains it in the open position. To close the valve and maintain it in the closed position, the air is vented off the diaphragm by a solenoid valve. The solenoid valve supplies air in its normally energized state. When the solenoid valve de-energizes, the actuator spring provides the motive force to close valve 2N62-F057. The replacement actuator will fail open instead of closed, however, vulnerabilities related to the failure of valve 2N62-F057, loss of power, and loss of air inadvertently closing the valve and resulting in a SCRAM on loss of condenser vacuum will be eliminated. A normally energized solenoid valve will continue to be provided. This results in no change to the redundant trip circuitry on the valve. When the trip circuit de-energizes the solenoid valve, air will be supplied to the top of the actuator diaphragm, which will close valve 2N62-F057. An operator manual action to manipulate the valve hand wheel is conducted to verify valve 2N62-F057 is closed and will remain closed. To open the valve and maintain it in the open position, the air is vented off the top of the actuator diaphragm and a spring provides the motive force upward to open valve 2N62-F057. On loss of air, the operator will perform a manual action to close valve 2N62-F057.

##### **Summary of Conclusion for the Activity's 50.59 Review:**

The proposed activity involves changing the isolation of outlet valve 2N62-F057 to verify the automatic action isolations using an operator manual action and replacing the existing fail closed actuator on outlet valve 2N62-F057 with a fail open actuator. This activity eliminates a single point vulnerability that causes plant trips due to loss of vacuum. Since the manual action to verify outlet valve 2N62-F057 closure can be performed prior to reaching any dose release limits, there is no impact on the plant as addressed in Design Analysis L-003884, which considered the time required to manually close the valve using the valve hand wheel. Should valve 2N62-F057 fail open when isolation is required, the manual action can be performed to close the valve and the calculated doses remain within the limits of BTP 11-5-2007.

The review accordingly concluded that this revision to the design bases:

- Does not result in more than a minimal increase the frequency or consequences any accident or transient.
- Does not result in more a minimal increase in the likelihood or consequences of a malfunction.
- Does not create a possibility of a different type of accident or transient.
- Does not create a possibility for a malfunction with a different result.
- Does not result in any design basis limit for a fission product barrier (DBLFPB) being exceeded or altered.
- Does not constitute a departure from UFSAR described method of evaluation.

The 50.59 Evaluation concluded that the activity could be implemented without prior NRC approval.

## ATTACHMENT C

### LaSalle 10 CFR 50.59 Evaluation Summary Report

#### **L15-47 – EVALUATION OF FUEL LICENSING IMPACT OF LOST JET PUMP SEALS IN PRIMARY SYSTEM**

##### **Description of Activity:**

The proposed activity involves the operation of LaSalle Unit 2 with three jet pump plug seals lost in the primary system, subject to, and within the operational restrictions and applicability set forth in the Core Operating Limits Report (COLR). Review of the proposed activity and the associated referenced analyses assumes total flow blockage of the fuel support piece orifice flow to fuel assemblies with peripheral fuel support pieces.

##### **Summary of Conclusion for the Activity's 50.59 Review:**

The focus of the 50.59 review is the impact on the fuel and reload licensing bases from operation with the lost jet pump plug seals. Accordingly, GEH performed an evaluation of the impact of the lost parts using the relevant elements of its reload licensing methodology. The GEH evaluation addressed thermal margin due to the blockage, impact on thermal-hydraulic stability, and impact on Anticipated Operational Occurrences. The GEH evaluations conclude that the Safety Limit minimum critical power ratio (MCPR) limit is not violated, given the postulated flow blockage, thermal hydraulic instability, and transient scenarios associated with the proposed activity, if the reactor is operated within the restrictions of the COLR. Therefore, compliance with the transition boiling limits contained in the fuel cladding integrity MCPR Safety Limit is not challenged. Compliance with the transient cladding strain limits and fuel performance limits during a postulated design basis LOCA, though less likely to be affected by a flow blockage event, is similarly not challenged.

The review accordingly concluded that this revision to the design bases:

- Does not result in more than a minimal increase the frequency or consequences any accident or transient.
- Does not result in more a minimal increase in the likelihood or consequences of a malfunction.
- Does not create a possibility of a different type of accident or transient.
- Does not create a possibility for a malfunction with a different result.
- Does not result in any design basis limit for a fission product barrier (DBLFPB) being exceeded or altered.
- Does not constitute a departure from UFSAR described method of evaluation.

The 50.59 Evaluation concluded that the activity could be implemented without prior NRC approval.

## ATTACHMENT C

### LaSalle 10 CFR 50.59 Evaluation Summary Report

#### **L15-138 – ON-LINE NOBLE METALS CHEMICAL (OLNC) INJECTION**

##### **Description of Activity:**

The proposed activity will apply noble metals on-line (On-Line NobleChem™ — OLNC), which consists of injecting a Platinum solution into the reactor coolant through the feedwater system while the plant is operating in Mode 1, above 70 percent power. The application duration and slow injection rate allow for managing and controlling any increase in reactor coolant conductivity and main steam line radiation increases. The reactor water cleanup system will be in operation to remove impurities, therefore, reducing the conductivity to normal level. Incremental increase in injection will take place to control the plant radiation response in main steam lines and to establish the steady and constant injection rate.

##### **Summary of Conclusion for the Activity's 50.59 Review:**

The online noble metal activity injects noble metal chemicals into the wetted surfaces of the reactor vessel through the feedwater system at a managed and controlled flow rates to ensure adequate film deposition on wetted surfaces of the reactor components to limit crack growth and ensures intergranular stress corrosion cracking (IGSCC) mitigation. The total amount of chemical being injected is minimal to have any adverse impact on the fuel and fuel cladding surfaces. The chemical concentration is diluted so that the amount of impurities released from the restructured corrosion film inside the reactor is timely removed by the reactor water cleanup system. This ensures the chemical environment inside the reactor is maintained and additional corrosion cracking is mitigated. The rate of injection is controlled such as to manage the main steam line radiation impacts on plant personnel, which maintains dose rates ALARA. The ONLC application is within the bounds of UFSAR safety and design bases limits.

The review accordingly concluded that this revision to the design bases:

- Does not result in more than a minimal increase the frequency or consequences any accident or transient.
- Does not result in more a minimal increase in the likelihood or consequences of a malfunction.
- Does not create a possibility of a different type of accident or transient.
- Does not create a possibility for a malfunction with a different result.
- Does not result in any design basis limit for a fission product barrier (DBLFPB) being exceeded or altered.
- Does not constitute a departure from UFSAR described method of evaluation.

The 50.59 Evaluation concluded that the activity could be implemented without prior NRC approval.

## ATTACHMENT C

### LaSalle 10 CFR 50.59 Evaluation Summary Report

#### **L15-167 – REVIEW OF ATRIUM 10 PART LENGTH FUEL ROD OPERATION ABOVE 62 GWD/MTU**

##### **Description of Activity:**

The proposed activity is an evaluation of the potential impact of ATRIUM 10 fuel part-length fuel rod (PLR) operation above 62 GWD/MTU burnup (exposure) on the current plant licensing basis. This activity includes an evaluation of current design analyses to determine potential Alternative Source Term impact as well as an evaluation of the ATRIUM 10 fuel rod thermal-mechanical design basis compliance. The scope of the proposed activity is limited to the ATRIUM 10 fuel design at LaSalle Station. The results and limitation of the proposed activity are not applicable to other fuel designs or stations.

##### **Summary of Conclusion for the Activity's 50.59 Review:**

The proposed activity focused on the impacts on the cladding barrier and radiological consequences described in the safety analyses. The impacts on the cladding barrier were evaluated and was concluded that the proposed activity did not involve any new thermal, mechanical or hydraulic safety analyses, did not alter the bounding technical requirements for the ATRIUM 10 cladding and did not physically change the fuel rod or the way it is operated. The evaluation performed on the radiological consequence safety analysis, specifically those based on Regulatory Guide (RG) 1.183 determined that the Fuel Handling Accident (FHA) was the only accident that required further consideration. The proposed activity includes a revision to the FHA analysis of record to address this condition and concluded that the full length rod operating characteristics bound the partial length rods. This conclusion applies to any application of RG 1.183 footnote 11 involving ATRIUM- 10 fuel at LaSalle Station.

The review accordingly concluded that this revision to the design bases:

- Does not result in more than a minimal increase the frequency or consequences any accident or transient.
- Does not result in more a minimal increase in the likelihood or consequences of a malfunction.
- Does not create a possibility of a different type of accident or transient.
- Does not create a possibility for a malfunction with a different result.
- Does not result in any design basis limit for a fission product barrier (DBLFPB) being exceeded or altered.
- Does not constitute a departure from UFSAR described method of evaluation.

The 50.59 Evaluation concluded that the activity could be implemented without prior NRC approval.

## ATTACHMENT C

### LaSalle 10 CFR 50.59 Evaluation Summary Report

#### **L15-213 – REMOVAL OF OFFGAS VULNERABILITIES ON VALVE 1N62-F057**

##### **Description of Activity:**

The proposed activity is to replace the air operated valve actuator on valve 1N62-F057 for Unit 1. The existing actuator is air operated and fails closed on a reversing spring. Air supplied to the actuator opens valve 1N62-F057 and maintains it in the open position. To close the valve and maintain it in the closed position, the air is vented off the diaphragm by a solenoid valve. The solenoid valve supplies air in its normally energized state. When the solenoid valve de-energizes, the actuator spring provides the motive force to close valve 1N62-F057. The replacement actuator will fail open instead of closed, however, vulnerabilities related to the failure of valve 1N62-F057, loss of power, and loss of air inadvertently closing the valve and resulting in a SCRAM on loss of condenser vacuum will be eliminated. A normally energized solenoid valve will continue to be provided. This results in no change to the redundant trip circuitry on the valve. When the trip circuit de-energizes the solenoid valve, air will be supplied to the top of the actuator diaphragm, which will close valve 1N62-F057. An operator manual action to manipulate the valve hand wheel is conducted to verify valve 1N62-F057 is closed and will remain closed. To open the valve and maintain it in the open position, the air is vented off the top of the actuator diaphragm and a spring provides the motive force upward to open valve 1N62-F057. On loss of air, the operator will perform a manual action to close valve 1N62-F057.

##### **Summary of Conclusion for the Activity's 50.59 Review:**

The proposed activity involves changing the isolation of outlet valve 1N62-F057 to verify the automatic action isolations using an operator manual action and replacing the existing fail closed actuator on outlet valve 1N62-F057 with a fail open actuator. This activity eliminates a single point vulnerability that causes plant trips due to loss of vacuum. Since the manual action to verify outlet valve 1N62-F057 closure can be performed prior to reaching any dose release limits, there is no impact on the plant as addressed in Design Analysis L-003884, which considered the time required to manually close the valve using the valve hand wheel. Should valve 1N62-F057 fail open when isolation is required, the manual action can be performed to close the valve and the calculated doses remain within the limits of BTP 11-5-2007.

The review accordingly concluded that this revision to the design bases:

- Does not result in more than a minimal increase the frequency or consequences any accident or transient.
- Does not result in more a minimal increase in the likelihood or consequences of a malfunction.
- Does not create a possibility of a different type of accident or transient.
- Does not create a possibility for a malfunction with a different result.
- Does not result in any design basis limit for a fission product barrier (DBLFPB) being exceeded or altered.
- Does not constitute a departure from UFSAR described method of evaluation.

The 50.59 Evaluation concluded that the activity could be implemented without prior NRC approval.

## ATTACHMENT C

### LaSalle 10 CFR 50.59 Evaluation Summary Report

#### **L15-221 – INCREASED # SRV ACTUATIONS THAT THE ADS ACCUMULATOR BACK-UP COMPRESSED GAS SYSTEM (BOTTLE BANKS) REPLACE NITROGEN BOTTLES AT POWER TO SUPPORT TECHNICAL SPECIFICATIONS**

##### **Description of Activity:**

The proposed activity is to revise 50.59 screening LI3-198, which has a potential adverse condition identified by the NRC during a 2015 50.59 inspection. Procedure LOP-IN-05, "Replacing Nitrogen Bottles on Instrument Nitrogen System," requires operators to perform a time critical manual action to change out four nitrogen bottles within 1 hour to add additional nitrogen to meet Automatic Depressurization Systems (ADS) requirements in accordance with calculation L-003263, "Volume Requirements for (Automatic Depressurization Systems) ADS Back-up Compressed Gas System (Bottle Banks)." Calculation L-003263 was revised to address a non-conservative design input identified by GE regarding the quantity of compressed gas (nitrogen) that the ADS Accumulator Back-up Compressed Gas System (Bottle Banks) must provide to support operation during an accident. For the implementation of this requirement, design analysis L-003263, Revision 3 was issued.

NRC review of the UFSAR and supporting 50.59 screening L13-198 identified that the UFSAR was not updated to discuss the operator action and that a 50.59 evaluation should have been performed in support of this change.

##### **Summary of Conclusion for the Activity's 50.59 Review:**

The proposed activity to revise 50.59 screening LI3-198 resulted in a 50.59 evaluation to address NRC identified issues during 2015 50.59 inspection. The performed evaluation concluded that the action to change out the bottles does not affect the ability of the ADS system to perform its intended automatic function and the action, which was intended to meet the Technical Specification Surveillance Requirement 3.5.1.4 pressure requirements, has been proven to be achievable, which includes the time to deal with potential operator errors and procedures in place to sufficiently direct the activity. The original proposed activity contained in screening LI3-198, which revised Design Analysis L-003263 and formally accepts it as a design bases document is still applicable. This activity also revised procedure LOP-IN-05 to add information about this activity and the action to change-out the bottles. There are no adverse impacts from the revised Design Analysis and procedure upon UFSAR described design functions and evaluation methodology.

The review accordingly concluded that this revision to the design bases:

- Does not result in more than a minimal increase the frequency or consequences any accident or transient.
- Does not result in more a minimal increase in the likelihood or consequences of a malfunction.
- Does not create a possibility of a different type of accident or transient.
- Does not create a possibility for a malfunction with a different result.
- Does not result in any design basis limit for a fission product barrier (DBLFPB) being exceeded or altered.
- Does not constitute a departure from UFSAR described method of evaluation.

The 50.59 Evaluation concluded that the activity could be implemented without prior NRC approval.

## ATTACHMENT C

### LaSalle 10 CFR 50.59 Evaluation Summary Report

#### **L16-22 – UNIT 1 AND 2 HYDROGEN WATER CHEMISTRY (HWC) SYSTEM UPGRADE**

##### **Description of Activity:**

The proposed activity is being performed to improve the reliability and availability of the Hydrogen Water Chemistry (HWC) system by installing new updated computer system and eliminating nuisance trips. Installation of a new replacement Operator Interface Unit in HWC control panels provides an operator with the means to monitor and control the HWC process and to collect data from the system for off-line analysis. The Programmable Logic Controller (PLC) program will be revised to add a time delay to the High-High Hydrogen Area trip and the High Off-Gas Percent Hydrogen trip to avoid spurious trips. The PLC program will also be updated to remove the Hydrogen Inject Differential Pressure Sensor, High Hydrogen Flow, High Hydrogen Pressure, Low Process Service Air, Off-Gas Monitor in Test Mode, and H<sub>2</sub> Supply system trips. The alarms associated with these trips will be maintained.

##### **Summary of Conclusion for the Activity's 50.59 Review:**

The activity involving removal of the HWC system trips will not cause the hydrogen concentration in off-gas to reach the lower explosive limit, and UFSAR 15.7.1.1.1 states a hydrogen detonation is not considered as a possible failure mode for the off-gas system because the equipment and piping are designed to contain any hydrogen-oxygen detonation. The activity does not change the function, design basis, or normal operation of the HWC system as described in the UFSAR. The activity will improve the availability and reliability of the HWC system by eliminating spurious trips. The HWC system does not perform safety-related or post-accident function.

The review accordingly concluded that this revision to the design bases:

- Does not result in more than a minimal increase the frequency or consequences any accident or transient.
- Does not result in more a minimal increase in the likelihood or consequences of a malfunction.
- Does not create a possibility of a different type of accident or transient.
- Does not create a possibility for a malfunction with a different result.
- Does not result in any design basis limit for a fission product barrier (DBLFPB) being exceeded or altered.
- Does not constitute a departure from UFSAR described method of evaluation.

The 50.59 Evaluation concluded that the activity could be implemented without prior NRC approval.



## ATTACHMENT C

### LaSalle 10 CFR 50.59 Evaluation Summary Report

#### **L16-28 – LOCAL LEAK RATE TESTING SCOPE REDUCTION**

##### **Description of Activity:**

The proposed activity addresses the exclusion of the following Primary Containment Isolation Valves (PCIVs) from 10 CFR 50 Appendix J, Option B, Type C testing:

- Reactor Core Isolation Coolant (RCIC)
  - 1(2)E51-F013 – Head Spray
  - 1(2)E51-F022 and 1(2)E51-F059 – RCIC Full Flow Test Return to Suppression Pool
- Low Pressure Core Spray (LPCS)
  - 1(2)E21-F005 – LPCS Injection
- Residual Heat Removal (RHR)
  - 1(2)E12-F016A,B – RHR/Containment Spray
  - 1(2)E12-F023 – Head Spray
  - 1(2)E12-F042A/B/C – RHR/LPCI Injection
  - 1(2)E12-F053A/B – RHR/Shutdown Cooling Return
  - 1(2)E12-F009, 1(2)E12-F008, and 1(2)E12-F460 – RHR/Shutdown Cooling Suction
- High Pressure Core Spray (HPCS)
  - 1(2)E22-F004 – HPCS Injection

##### **Summary of Conclusion for the Activity's 50.59 Review:**

The proposed activity addresses the exclusion of certain PCIVs from 10 CFR 50 Appendix J, Option B, Type C testing. This activity shows that the identified Penetrations and PCIVs meet the Regulatory, Industry Standards, Technical Specifications and Exelon Procedure requirements to be qualified as, "Boundaries that do not constitute potential primary containment atmospheric pathways during and following a DBA." Therefore, the identified Penetrations and PCIVs are eligible for exclusion from LLRT (Type C) in accordance with the requirements of 10 CFR 50, Appendix J, TS 5.5.13, "Primary Containment Leakage Rate Testing Program," and Exelon Procedure ER-AA-380, "Primary Containment Leakrate Testing Program." The affected valves will continue to be leak tested in accordance with the In-Service Testing (IST) Program as required by 10 CFR 50.55a. The activity does not affect system and plant operation, or safety analysis of the plant.

The review accordingly concluded that this revision to the design bases:

- Does not result in more than a minimal increase the frequency or consequences any accident or transient.
- Does not result in more a minimal increase in the likelihood or consequences of a malfunction.
- Does not create a possibility of a different type of accident or transient.
- Does not create a possibility for a malfunction with a different result.
- Does not result in any design basis limit for a fission product barrier (DBLFPB) being exceeded or altered.
- Does not constitute a departure from UFSAR described method of evaluation.

The 50.59 Evaluation concluded that the activity could be implemented without prior NRC approval.

## ATTACHMENT C

### LaSalle 10 CFR 50.59 Evaluation Summary Report

#### **L16-43 – METHANOL INJECTION FOR UNIT 1**

##### **Description of Activity:**

The proposed activity implements Methanol (MEOH) pilot demonstration, at low power operation, during plant initial criticality and heatup to nominal operating temperatures and pressures, until the Hydrogen Water Chemistry system is ready to be placed in service. AREVA Technical Evaluation Document No.51-9241537-002 and Technical Safety Evaluation (TSE) Document No. 51-9249608 -001 have been used as the basis for the injection of Methanol and for the impact it has on Unit 1 structures, systems, and components. The proposed activity is intended to compliment the BWR Vessel Internal Protection programs. It is intended to assist in providing IGSCC mitigation during startup or shutdown periods, when the normal source of hydrogen is not available, and it is compatible with hydrogen water chemistry (HWC) addition.

##### **Summary of Conclusion for the Activity's 50.59 Review:**

The activity has concluded that injection of methanol for the purpose of showing effective IGSCC mitigation does not affect safe plant operation and does not impact the health and safety of the public. Safe operations are not compromised during all phases of normal plant operations, Anticipated Operational Transients, or accident conditions previously analyzed. No new accident conditions are introduced due to the injection of Methanol. Frequency and consequences of accidents or malfunctions are not increased. Fission product boundaries are not adversely affected; in actuality, a net positive impact is expected based on the extension of IGSCC mitigation to periods that are not currently protected. Evaluation of the proposed injection of Methanol to the reactor vessel, during initial criticality and heatup, at the minute quantities specified by AREVA (i.e. less than 10 ml/min Methanol at 100% assay for a maximum of 5 gallons of Methanol solution) has concluded that plant operations, design bases, and safety analyses are unchanged by this activity.

The review accordingly concluded that this revision to the design bases:

- Does not result in more than a minimal increase the frequency or consequences any accident or transient.
- Does not result in more a minimal increase in the likelihood or consequences of a malfunction.
- Does not create a possibility of a different type of accident or transient.
- Does not create a possibility for a malfunction with a different result.
- Does not result in any design basis limit for a fission product barrier (DBLFPB) being exceeded or altered.
- Does not constitute a departure from UFSAR described method of evaluation.

The 50.59 Evaluation concluded that the activity could be implemented without prior NRC approval

## **ATTACHMENT D**

### LaSalle 10 CFR 72.48 Evaluation Summary Report

All 10 CFR 72.48 reviews performed from the initiation of dry cask storage activities at LaSalle County Station through December 31, 2015 were screenings. There were no 10 CFR 72.48 Evaluations performed during this period.

**ATTACHMENT E**

**OSM Directory Structure**

<b>Exelon Nuclear – LaSalle County Station UFSAR Rev 22, April 2016 – Publicly Available</b>			
<b>Directory Path</b>	<b>File Name</b>	<b>Size</b>	<b>Sensitivity Level</b>
001 LAS UFSAR Rev. 22	000 List of Effective Pages.pdf	584 KB	Publicly Available
001 LAS UFSAR Rev. 22	001 Chap 01 Introduction.pdf	261 KB	Publicly Available
001 LAS UFSAR Rev. 22	002 Chap 02 Site Characteristics.pdf	2249 KB	Publicly Available
001 LAS UFSAR Rev. 22	003 Chap 02 Figures Part 1 of 2.pdf	14274 KB	Publicly Available
001 LAS UFSAR Rev. 22	004 Chap 02 Figures Part 2 of 2.pdf	46541 KB	Publicly Available
001 LAS UFSAR Rev. 22	005 Chap 03 Design of Struct Comp, Equip.pdf	37144 KB	Publicly Available
001 LAS UFSAR Rev. 22	006 Chap 04 Reactor.pdf	5342 KB	Publicly Available
001 LAS UFSAR Rev. 22	007 Chap 05 Reactor Coolant.pdf	6421 KB	Publicly Available
001 LAS UFSAR Rev. 22	008 Chap 06 Eng Safety Features.pdf	16471 KB	Publicly Available
001 LAS UFSAR Rev. 22	009 Chap 07 Instr and Control Sys.pdf	7150 KB	Publicly Available
001 LAS UFSAR Rev. 22	010 Chap 08 Electric Power.pdf	3503 KB	Publicly Available
001 LAS UFSAR Rev. 22	011 Chap 09 Auxiliary Systems.pdf	848 KB	Publicly Available
001 LAS UFSAR Rev. 22	012 Chap 09 Figures Part 1 of 14.pdf	2509 KB	Publicly Available
001 LAS UFSAR Rev. 22	013 Chap 09 Figures Part 2 of 14.pdf	48344 KB	Publicly Available
001 LAS UFSAR Rev. 22	014 Chap 09 Figures Part 3 of 14.pdf	44241 KB	Publicly Available
001 LAS UFSAR Rev. 22	015 Chap 09 Figures Part 4 of 14.pdf	42614 KB	Publicly Available
001 LAS UFSAR Rev. 22	016 Chap 09 Figures Part 5 of 14.pdf	49265 KB	Publicly Available
001 LAS UFSAR Rev. 22	017 Chap 09 Figures Part 6 of 14.pdf	44842 KB	Publicly Available
001 LAS UFSAR Rev. 22	018 Chap 09 Figures Part 7 of 14.pdf	46373 KB	Publicly Available
001 LAS UFSAR Rev. 22	019 Chap 09 Figures Part 8 of 14.pdf	44981 KB	Publicly Available
001 LAS UFSAR Rev. 22	020 Chap 09 Figures Part 9 of 14.pdf	36328 KB	Publicly Available
001 LAS UFSAR Rev. 22	021 Chap 09 Figures Part 10 of 14.pdf	40374 KB	Publicly Available
001 LAS UFSAR Rev. 22	022 Chap 09 Figures Part 11 of 14.pdf	47990 KB	Publicly Available
001 LAS UFSAR Rev. 22	023 Chap 09 Figures Part 12 of 14.pdf	19608 KB	Publicly Available
001 LAS UFSAR Rev. 22	024 Chap 09 Figures Part 13 of 14.pdf	20752 KB	Publicly Available
001 LAS UFSAR Rev. 22	025 Chap 09 Figures Part 14 of 14.pdf	39044 KB	Publicly Available
001 LAS UFSAR Rev. 22	026 Chap 10 Steam and Power Conv.pdf	741 KB	Publicly Available
001 LAS UFSAR Rev. 22	027 Chap 11 Radioactive Waste Mgmt.pdf	1122 KB	Publicly Available
001 LAS UFSAR Rev. 22	028 Chap 12 Radiation Protection.pdf	10961 KB	Publicly Available
001 LAS UFSAR Rev. 22	029 Chap 13 Conduct of Operations.pdf	421 KB	Publicly Available
001 LAS UFSAR Rev. 22	030 Chap 14 Initial Test Program.pdf	46 KB	Publicly Available
001 LAS UFSAR Rev. 22	031 Chap 15 Accident Analysis.pdf	5360 KB	Publicly Available
001 LAS UFSAR Rev. 22	032 Chap 16 Technical Specifications.pdf	39 KB	Publicly Available
001 LAS UFSAR Rev. 22	033 Chap 17 Quality Assurance.pdf	49 KB	Publicly Available
001 LAS UFSAR Rev. 22	034 Appendices.pdf	10754 KB	Publicly Available
002 LAS TRM	001 LAS TRM.pdf	4214 KB	Publicly Available
003 LAS Tech Spec Bases	001 LAS Tech Spec Bases.pdf	1790 KB	Publicly Available
004 LAS FPR Rev. 7	001 LAS FPR Rev. 7.pdf	10347 KB	Publicly Available