

## La Salle 2

# 1Q/2015 Plant Inspection Findings

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### Initiating Events

G **Significance:** Mar 31, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

#### **Liquid Penetrant Testing Procedure Was Not Qualified for Its Full Applicability Range**

The inspectors identified a Green NCV of Title 10, Code of Federal Regulations (CFR) Part 50, Appendix B, Criterion IX, "Control of Special Processes," for the licensee's failure, as of February 13, 2015, to properly qualify a non-destructive testing procedure in accordance with applicable codes. Specifically, a liquid penetrant test (PT) procedure was not qualified for its full applicability temperature range in accordance with American Society of Mechanical Engineers (ASME) Code, Section V, "Non-Destructive Examination." The licensee entered this issue into its corrective action program as Action Request 02451872.

The failure to qualify a liquid PT procedure in accordance with ASME Section V was a performance deficiency. The performance deficiency was determined to be more than minor because, if left uncorrected, it had the potential to lead to a more significant safety concern. Specifically, since the liquid PT procedure was not qualified for its full applicability temperature range, liquid penetrant examinations would not be assured to detect flaws in the unqualified temperature range. As a consequence, the potential would exist for a rejectable flaw to go undetected affecting the operability of the affected system. This finding affected the Initiating Events, Mitigating Systems, and Barrier Integrity cornerstones. The finding screened as of very low safety significance (Green) because it did not result in the loss of operability or functionality; thus, the inspectors answered 'No' to all of the screening questions. Specifically, the licensee review completed liquid penetrant examination records and did not find an example where the procedure was implemented at the unqualified temperature ranges. The inspectors determined that the primary cause of the failure to properly qualify the PT procedure was related to the Problem Identification and Resolution cross-cutting area, Operating Experience aspect (P.5). Specifically, the organization failed to effectively implement external operating experience in a timely manner.

Inspection Report# : [2015001 \(pdf\)](#)

G **Significance:** Dec 31, 2014

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

#### **Inappropriate Instructions Led to Failure of MSIV**

A finding of very low safety significance and associated non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was self revealed for the licensee's failure to establish instructions for an activity affecting quality that were appropriate to the circumstances. Specifically, when the Unit 2 'C' inboard main steam isolation valve (MSIV) failed shut due to a stem to disc separation on August 5, 2014, inspectors reviewed the circumstances leading to the failure and determined that engineering change (EC) 340595 was deficient. This EC was created in response to 2003 industry operating experience (OE) for the same failure mechanism (loss of pretension on the shaft-to-pilot-disc) at another facility, with the purpose of establishing inspection acceptance criteria to determine if the OE applied to LaSalle. The inspectors concluded that the acceptance criteria were inappropriate to the circumstances because they contained no guidance for identifying or dispositioning the actual failure mechanism

reported in the OE. Even though two of the five MSIVs inspected at the time by the licensee displayed evidence of the OE reported failure mechanism (loss of pretension), the acceptance criteria as written were satisfied, so the MSIVs passed their inspections and future rebuild activities were deferred based primarily on these false negative inspection results. It was due to these deferrals that the August 5th failure occurred. All MSIV internals have since been rebuilt with a more robust design that is not susceptible to a loss of pretension failure, and a root cause evaluation was performed.

The performance deficiency was determined to be more than minor because it was associated with the Initiating Events Cornerstone attribute of procedure quality and adversely affected the cornerstone objective of limiting the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Since the valve failure caused a reactor scram and loss of condenser as the normal heat sink due to the Group I MSIV isolation, a detailed risk evaluation was required. The RIII Senior Reactor Analysts (SRAs) performed a detailed risk evaluation using the NRC's Standardized Plant Analysis Risk model for LaSalle, version 8.24, and calculated a conditional core damage probability estimate of 8.4E-7, which represents a finding of very low safety significance, or Green. Because this performance deficiency occurred in 2003, no cross cutting aspect was assigned because it was not considered current performance. (Section 4OA3)

Inspection Report# : [2014005 \(pdf\)](#)

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## Mitigating Systems

**Significance:** G Mar 31, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

### Failure to Measure Interpass Temperature

The inspectors identified a Green NCV of Title 10, CFR Part 50, Appendix B, Criterion IX, "Control of Special Processes," for a failure of the licensee on February 12, 2015, to measure the interpass temperature while performing welding on the 2 diesel generator cooling water (DGCW) piping system. Consequently, welding was performed without the Code-and procedure-required interpass temperature being monitored on a number of welds, a parameter, which could have affected the mechanical properties of the material being welded. To restore compliance, the welders proceeded to measure the interpass temperatures on the balance of the welds, and verified that the interpass temperature did not exceed that allowed by procedure. The licensee entered this issue into its corrective action program as action report 02451583.

The inspectors determined that this issue was a performance deficiency that was more than minor because it had the potential to lead to a more significant safety concern. Specifically, absent NRC inspector intervention, the welders would have completed all of the welds without having measured the interpass temperature, a welding parameter which can affect the mechanical properties (e.g., impact properties) of some materials being welded, and, if left uncorrected could lead to a potential failure of the weld in service. The inspectors determined this finding was of very low safety significance (Green) because the DGCW system maintained its operability or functionality. The welders proceeded to measure the interpass temperatures on the balance of the welds, and verified that the interpass temperature did not exceed that allowed by procedure, and the issue did not result in the actual loss of the operability or functionality of a safety system. The inspectors determined that the primary cause of the failure to measure the interpass temperature while performing a manual welding process was related to the cross-cutting area of Human Performance, Procedure Adherence aspect (H.8). Specifically, the welders failed to follow procedures.

Inspection Report# : [2015001 \(pdf\)](#)

**G****Significance:** G Jan 22, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

**Failure to Ensure Circuits associated with Alternate Shutdown Capability Free of Fire-induced Damage  
(Section 1R05.6.b)**

- Green. The inspectors identified a finding of very-low safety significance (Green) and associated NCV of the LaSalle County Station Operating License for the licensee's failure to ensure that the alternate shutdown capability was independent of the fire area. Specifically, in the event of a fire in the control room, the alternate shutdown capability for 16 motor operated valves (MOVs) associated with the Reactor Core Isolation Cooling (RCIC) may be affected, and may not be available due to lack of breaker fuse coordination. Fire-induced failures could result in tripping valve power supply breakers prior to tripping the control power fuses for several motor operated valves, thereby, potentially impairing the operation of RCIC from the Remote Shutdown Panel (RSP). The licensee entered this issue into their Corrective Action Program and established compensatory measures, and added steps to the safe shutdown procedures to reset the affected breakers if needed. In addition, the licensee intended to perform plant modifications to replace or revise existing breakers settings to correct the issue.

The inspectors determined that the issue was more than minor, because fire induced circuits could impair the operation of RCIC and complicated shutdown of the plant in the event of a fire in the control room. The finding affected the Mitigating Systems Cornerstone. The finding was determined to be of very-low safety significance based on a detailed risk-evaluation. This finding was not associated with a cross-cutting aspect because the finding was not representative of the licensee's current performance. (Section 1R05.6.b)

Inspection Report# : [2014008 \(pdf\)](#)**G****Significance:** G Dec 31, 2014

Identified By: NRC

Item Type: NCV Non-Cited Violation

**Scaffold Installed Without Engineering Review**

The inspectors identified a finding of very low safety significance and associated non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the licensee's failure on September 11, 2014, to develop and supply specific minimum clearance requirements to maintenance staff prior to erecting scaffold in close proximity to safety related equipment. The licensee has entered this item into its corrective action program (CAP).

The performance deficiency was determined to be more than minor because, if left uncorrected, the performance deficiency has the potential to become a more significant safety concern. Specifically, the method used to determine the minimum clearances did not account for the potential motion of in place systems/components. The inspectors determined the finding could be evaluated in accordance with IMC 0609, "Significance Determination Process," Exhibit 2, "Mitigating System Screening Questions," dated June 2, 2011. The finding was determined to be of very low safety significance (Green). This finding has a cross cutting aspect in the area of Human Performance, Training, because the licensee did not provide training and ensure knowledge transfer to maintain a knowledgeable, technically competent workforce and instill nuclear safety values (H.9).

Inspection Report# : [2014005 \(pdf\)](#)**G****Significance:** G Jun 30, 2014

Identified By: NRC

Item Type: NCV Non-Cited Violation

**Failure to Adhere to Postings Led to Prohibited Items Being Left in ECCS Corner Rooms**

Inspectors identified a finding of very low safety significance (Green) and associated non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the licensee's failure to follow written instructions, prominently displayed on signs and placards near the entrances of the emergency core cooling systems corner rooms, which prohibit the storage of items that can potentially clog the floor drains and adversely affect the systems' ability to maintain a water level below the maximum safe operating level during a flooding event, as specified in LGA-002, "Secondary Containment Control." Specifically, upon numerous occasions, inspectors identified materials that were placed either on the floor or on a surface that was below the maximum safe operating water level for the room, such that the materials would have posed a potential clogging hazard for the floor drains during a flooding event. Upon notification by the inspectors of the presence of prohibited materials, the licensee promptly removed the prohibited items from the areas. The most recent occurrence was entered into the licensee's corrective action program as Action Request 01661788, and a number of interim compensatory measures, such as shiftly walkdowns by operations and radiation protection, were implemented to ensure that the areas remain clear of prohibited items until more permanent corrective actions are developed and put in place. At the time of this report, an apparent cause evaluation was in progress to evaluate the underlying cause of the performance deficiency, and to develop appropriate corrective actions.

The finding was determined to be more than minor because it was associated with the Equipment Performance attribute of the Mitigating Systems Cornerstone, and adversely affected the cornerstone's objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the failure to adhere to the written instructions of the postings in the emergency core cooling systems corner rooms led to the storage of prohibited items within those areas, which could have potentially challenged equipment availability during a flooding event. The finding was determined to be of very low safety significance (Green) in accordance with the Significance Determination Process because the performance deficiency did not result in the inoperability of any structures, systems, or components. This finding had a cross cutting aspect in the area of Human Performance, Training, because the organization did not ensure that the appropriate knowledge was transferred to the staff. Specifically, the staff was not effectively trained on the features of the emergency core cooling systems corner rooms, such that the importance of keeping prohibited items out of the area for flood mitigation purposes was not sufficiently understood.

Inspection Report# : [2014003 \(pdf\)](#)

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## Barrier Integrity

### Emergency Preparedness

G Significance: Oct 03, 2014

Identified By: NRC

Item Type: NCV Non-Cited Violation

#### Inadequate Evacuation Time Estimate Submittals

The NRC identified an non-cited violation of 10 CFR 50.54(q)(2) associated with 10 CFR 50.47(b)(10) and 10 CFR Part 50, Appendix E, Section IV.4, for failing to maintain the effectiveness of the LaSalle County Station Emergency Plan, as a result of failing to provide the station evacuation time estimate (ETE) to the responsible offsite response organizations (OROs) by the required date. Exelon submitted the LaSalle County

Station ETE to the NRC on December 12, 2012, prior to the required due date of December 22, 2012. The NRC completeness review found the ETEs to be incomplete due to Exelon fleet common and site specific deficiencies; thereby, preventing Exelon from providing the ETEs to responsible OROs and from updating site specific protective

action strategies as necessary. The NRC discussed its concerns regarding the completeness of the ETE, in a teleconference with Exelon on June 10, 2013, and on September 5, 2013, Exelon resubmitted the ETEs for its sites. The NRC again found the ETEs to be incomplete.

The issue is a performance deficiency because it involved a failure to comply with a regulation that was under Exelon's control to identify and prevent. The finding is more than minor because it is associated with the Emergency Preparedness Cornerstone attribute of procedure quality and because it adversely affected the cornerstone objective of ensuring that the licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. The finding is of very low safety significance (Green) because it was a failure to comply with a non risk significant portion of 10 CFR 50.47(b)(10). The licensee had entered this issue into its corrective action program (CAP) and re submitted a new revision of the LaSalle County Station ETE to the NRC on April 30, 2014, which was found to be complete by the NRC. The cause of the finding is related to cross cutting element of Human Performance, Documentation (H.7).

Inspection Report# : [2014004 \(pdf\)](#)

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## Occupational Radiation Safety

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**Significance:** Jun 30, 2014

Identified By: NRC

Item Type: NCV Non-Cited Violation

### Lack of Appropriate Procedure Guidance Led to Reactor Vessel Level Excursion During Refueling Outage Operations

A finding of very low safety significance and associated non-cited violation of Technical Specification 5.4.1.a, "Procedures" was self revealed for the licensee's failure to maintain procedures, as appropriate, for controlling reactor vessel level, an activity affecting quality per Regulatory Guide 1.33, Revision 2. Specifically, procedures MA-AB-756-601, "Reactor Reassembly," LGP-3-5, "Refueling Operations," and LOP-FC-16, "Reactor Vessel/Cavity Draindown Via RHR SDC" did not contain appropriate detail and direction to ensure that the reactor vessel level could be accurately controlled and maintained below the flange to prevent water from escaping the unsealed vessel before the head was re tensioned. This momentary lapse in reactor water level control resulted in the evacuation of personnel from the refuel floor and led to six instances of external personnel contamination and eleven instances of internal personnel contamination. The licensee immediately corrected the vessel level and entered the issue into its CAP as AR 01655617. An ACE was performed and corrective actions were developed to revise the above procedures to incorporate an appropriate level of guidance and information, to prevent recurrence.

The finding was determined to be more than minor because it was associated with the program & process (procedures) attribute of the Occupational Radiation Safety Cornerstone, and affected the cornerstone's objective of ensuring the adequate protection of worker health and safety from exposure to radiation from radioactive material during routine civilian reactor operation. Specifically, the failure to have adequate procedures in place to allow operators to accurately control vessel level directly resulted in adverse radiological conditions that impacted some of the plant workers on the refuel floor, and resulted in unplanned external and internal contamination events. The finding was determined to be of very low safety significance (Green) in accordance with inspection manual chapter 0609 Appendix C, "Occupational Radiation Safety Significance Determination Process." This finding had a cross cutting aspect in the area of Human Performance, Resources, because the licensee did not ensure that procedures with appropriate guidance were available to the operators to support nuclear safety (H.1). Specifically, critical information regarding the proper strategy to control vessel level and moderator temperature prior to and following vessel disassembly and reassembly was not provided within the applicable procedures.

Inspection Report# : [2014003 \(pdf\)](#)

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## **Public Radiation Safety**

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### **Security**

Although the Security Cornerstone is included in the Reactor Oversight Process assessment program, the Commission has decided that specific information related to findings and performance indicators pertaining to the Security Cornerstone will not be publicly available to ensure that security information is not provided to a possible adversary. Other than the fact that a finding or performance indicator is Green or Greater-Than-Green, security related information will not be displayed on the public web page. Therefore, the [cover letters](#) to security inspection reports may be viewed.

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### **Miscellaneous**

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