

## Limerick 2

### 1Q/2015 Plant Inspection Findings

---

### Initiating Events

**Significance:** G Dec 31, 2014

Identified By: NRC

Item Type: NCV Non-Cited Violation

**Unplanned Manual Power Reduction to 90% on Unit 1.**

*\*DRAFT STATUS\** A self-revealing, Green non-cited violation (NCV) of Technical Specification (TS) 6.8.1.b, “Administrative Controls,” was identified for LGS’s failure to properly implement station procedure MA-AA-716-100, “Maintenance Alterations Process”, during troubleshooting and calibration associated with the condensate filter (CF) system. As a result, on September 9, 2014, one of two Instrument Maintenance (IM) technicians inadvertently mispositioned the air supply valve to the 1G CF flow transmitter causing an unplanned plant transient. The inspectors determined that the failure to properly implement station procedure MA-AA-716-100, “Maintenance Alterations Process” during troubleshooting of CF system instrumentation, was a performance deficiency. LGS promptly performed an investigation, verified the plant alignment and safely returned the Unit 1 reactor to 100 percent power. LGS entered the issue into their corrective action program (CAP) as issue report (IR) 2116233.

This self-revealing finding is more than minor because it affected the human performance attribute of the Initiating Events Cornerstone and affected the cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions. This resulted in elevated main steam line radiation levels which required operators to reduce reactor power in accordance with abnormal operating procedures. The inspectors evaluated the finding using inspection manual chapter (IMC) 0609, Appendix A, “The Significance Determination Process for Findings At-Power”, to IMC 0609, “Significance Determination Process.” This finding was determined to be of very low safety significance (Green) because it was associated with a transient initiator, but didn’t cause a reactor trip and the loss of mitigation equipment relied upon to transition the plant from the onset of the trip to a stable shutdown condition.

The finding has a cross-cutting aspect in the area of Human Performance, because LGS maintenance management did not ensure supervisory and management oversight of work activities. [H.2] (Section 40A2).

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

---

### Mitigating Systems

**Significance:** G Mar 31, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

**Fire Safe Shutdown Diesel Generator Maintenance Program Did Not Account for Cold Temperatures due to Inadequate Specification for Fuel Oil Cloud Point**

The inspectors identified an NCV of LGS Units 1 and 2 operating license condition 2.C(3), Fire Protection, because Exelon did not implement and maintain in effect all provisions of the NRC approved fire protection program. Specifically, Exelon did not implement and maintain a maintenance program to ensure the operability of the fire safe

shutdown diesel (FSSD) generator by not ensuring a fuel oil supply specified or protected for typical winter cold temperatures. Exelon's corrective actions included adding a fuel oil additive (modifiers which inhibit wax crystal growth) to improve low temperature flow and pour characteristics at a time when ambient temperatures were greater than the cloud point and initiating condition report IR 2463216.

This finding is more than minor because it adversely affected the protection against external factors (fire) attribute of the mitigating systems cornerstone to ensure the reliability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the failure to ensure the cloud point of the diesel fuel oil was below the temperature of the surrounding air would impact the reliable operation of the equipment during low temperature conditions. Using IMC 0609, Appendix F, "Fire Protection Significance Determination Process," the inspectors determined that this finding was of very low safety significance (Green) because the finding did not impact the ability of LGS Units 1 and 2 to achieve safe shutdown. Specifically, the cloud point of diesel fuel delivered onsite by the vendor was substantially lower than Exelon's specification, unavailability of the FSSD generator would not by itself prevent LGS from reaching and maintaining safe shutdown, and the need for powered ventilation given a loss of normal HVAC during cold weather would be less than during hot weather. The inspectors determined that this finding has a cross-cutting aspect in the area of Human Performance, Resources, because Exelon did not ensure that cold weather preparedness procedures were adequate to support nuclear safety. Specifically, Exelon relied upon the cold weather procedures to establish reliable equipment operation during cold temperatures, but the procedures did not address diesel fuel cloud point for equipment stored and/or operated outdoors [H.1]. (Section 1R15)

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

**Significance:** G Mar 31, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

**Startup Procedure Considered High Pressure Coolant Injection Operable With High Reactor Water Level Trip Actuated**

The inspectors identified an NCV of Title 10 of the Code of Federal Regulations (10 CFR), Appendix B, Criterion V, "Instructions, Procedures, and Drawings," because Exelon prescribed a procedure affecting quality with instructions which were not appropriate to the circumstances. Specifically, procedure GP-2, "Normal Plant Startup," contained a note that stated high pressure coolant injection (HPCI) systems have been determined operable by engineering evaluation with a high level trip setpoint actuated. The inspectors determined that the note was inconsistent with Units 1 and 2 technical specifications (TS) and was not supported by an adequate engineering basis. Exelon's corrective actions included briefing staff to ensure HPCI system operability is appropriately assessed when implementing GP-2, initiating condition report IR 2464416, completing a procedure revision to reference an interim evaluation contained in the condition report, and initiating an action to complete an engineering evaluation.

This finding is more than minor because it is associated with the procedure quality attribute of the mitigating systems cornerstone and affected the objective to ensure the capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, procedure GP-2 stated that the HPCI system was operable with a Level 8 trip present without the ability to automatically actuate upon a high drywell pressure without an engineering evaluation which was inconsistent with the existing safety analysis performed at normal operating reactor pressure and temperature. Using IMC 0609, "Significance Determination Process," Appendix A, Exhibit 2, "Mitigating Systems Screening Questions," the inspectors determined that this finding was of very low safety significance (Green) because the finding did not represent an actual loss of the HPCI system or function to inject high pressure emergency core cooling water. Specifically, the note in GP-2 allowed considering the HPCI system operable at normal operating reactor pressures with the HPCI system tripped. However, the HPCI system was not tripped at normal operating reactor pressures.

The inspectors determined that the finding did not have cross-cutting aspect because the procedure development

performance deficiency did not occur within the last three years, and the inspectors did not conclude that the causal factors represented present Exelon performance. (Section 1R20)

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

---

## Barrier Integrity

**Significance:**  Jun 30, 2014

Identified By: NRC

Item Type: NCV Non-Cited Violation

### **Inadequate Corrective Actions Following Repeat Test Failures of a High Pressure Coolant Injection System Level Instrument**

The inspectors identified a Green NCV of 10 CFR 50, Appendix B, Criterion XVI, “Corrective Action,” for the failure to adequately evaluate and correct repeat calibration test failures in April 2012 and in February 2014 on the Unit 2 high pressure coolant injection (HPCI) system suppression pool level transmitter LT-055-2N062F. This resulted in LT-055-2N062F, a technical specification (TS) required instrument, being in a degraded and unreliable condition. The inspectors determined that failure to adequately evaluate and correct the condition was reasonably within the ability to foresee and correct, and should have been prevented. LGS entered the issue into their corrective action program (CAP) for resolution as Issue Reports (IRs) 1646041, 1651480, and 1659171.

This NRC-identified finding is more than minor because it affected the Barrier Integrity cornerstone attribute of the reliability and availability of structures, systems, or components to maintain the functionality of containment and affected the cornerstone objective to provide reasonable assurance that physical design barriers (containment) protect the public from radionuclide releases caused by accidents or events. The inspectors evaluated the finding using Appendix A, “The Significance Determination Process for Findings At-Power,” to IMC 0609, “Significance Determination Process.” This finding was determined to be of very low safety significance (Green) because it was associated with the functionality of the reactor containment but didn’t represent an actual open pathway in the physical integrity of containment, the containment isolation system, and heat removal components and, the finding did not involve an actual reduction in function of hydrogen igniters. In addition, the logic for the HPCI pump suction swap from the condensate storage tank to the suppression pool on high level in the suppression pool is a one-out-of-two logic. The inspectors determined that this function was available because the other channel which performs the function was not affected by the finding and was available during the time period in question with the exception of during brief testing periods.

The finding has a cross-cutting aspect in Problem Identification and Resolution, Evaluation, because LGS personnel did not thoroughly evaluate the issue to ensure that resolutions addressed the causes and extent of conditions commensurate with their safety significance [P.2].

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

---

## Emergency Preparedness

**Significance:**  Sep 30, 2014

Identified By: NRC

Item Type: NCV Non-Cited Violation

### **Inadequate Evacuation Time Estimate Submittals**

The inspectors identified a Green NCV of Title 10 of the Code of Federal Regulations (CFR) 50.54(q)(2), 10 CFR 50.47(b)(10), and 10 CFR Part 50, Appendix E, Section IV.4, for not maintaining the effectiveness of the LGS, Units 1 and 2, 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 entered this issue into their corrective action process (CAP) as issue reports (IR) 1525923 and 1578649. Additionally, Exelon re-submitted a new revision of the LGS ETE to the NRC on January 31, 2014.

This performance deficiency is more than minor because it is associated with the emergency preparedness cornerstone attribute of procedure quality and adversely affected the cornerstone objective of ensuring that LGS is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. The finding was determined to be 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 cause of the finding is related to the cross-cutting element of Human Performance, Documentation, because LGS did not appropriately create and maintain complete, accurate and, up-to-date documentation [H.7]. (Section 1EP5)

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

---

## **Occupational Radiation Safety**

---

## **Public Radiation Safety**

---

## **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.

---

## **Miscellaneous**

Last modified : June 16, 2015