

Limerick 1 3Q/2015 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance: G Jun 30, 2015

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

Design Requirements Not Met for Installed Instrument Gas Tubing Fitting

A self-revealing Green NCV of 10 CFR 50, Appendix B, Criterion III, "Design Control," was identified because Exelon failed to control the proper design configuration of installed plant equipment in Unit 1. Specifically, a fitting used in the safety-related primary containment instrument gas (PCIG) tubing supplying the '1C' inboard main steam isolation valve (MSIV) was not installed in accordance with the specified quality standard and this deviation was not controlled. Subsequently, the fitting failed due to high cycle fatigue and caused a reactor trip. Exelon's corrective actions included initiating condition report IR 2458005, installing approved tubing and fittings on February 24, 2015, on the '1C' inboard MSIV which maintained wall thicknesses greater than original specifications, and verifying that current maintenance practice, training, and knowledge would preclude substitution of a different style fitting without further evaluation.

This finding is more than minor because it is associated with the design control attribute of the initiating events cornerstone and affected the objective to limit the likelihood of events that upset plant stability during power operations. Specifically, the inadvertent closure of the '1C' inboard MSIV resulted in a reactor trip. Using IMC 0609, "Significance Determination Process, Appendix A, Exhibit 1, "Initiating Events Screening Questions," the inspectors determined that this finding was of very low safety significance (Green) because the finding did not 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 (e.g. loss of condenser, loss of feedwater). Specifically, the finding caused the loss of one steam line to the main condenser but three steam lines remained available. The inspectors determined that the finding did not have cross-cutting aspect because the installation of the fitting that failed did not occur within the last three years, and the inspectors did not conclude that the causal factors represented present Exelon performance. (Section 4OA3)

Inspection Report# : [2015002](#) (*pdf*)

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

Emergency Preparedness

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

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