Limerick 2
4Q/2006 Plant Inspection Findings

Initiating Events

Significance: G Mar 12, 2006
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Unit 2 Core Alterations Without Audible Source Range Monitor Alarms
A self-revealing NCV was identified for the licensee's failure to comply with Technical Specification (TS) 3.9.2, "Instrumentation." Plant operations staff inappropriately started core alterations after the loss of all Unit 2 source range monitor audible alarms. Core alterations were stopped when Exelon management was informed of the problem. The source range monitor audible alarm was fixed prior to moving fuel in the reactor and this issue was entered into Exelon's corrective action program.

This finding is greater than minor because it affected the Initiating Events cornerstone objective of limiting the likelihood of those events that challenge critical safety functions during shutdown conditions. This finding is of very low safety significance because it did not increase the likelihood of a loss of reactor coolant system inventory, it did not degrade the ability to terminate a leak or add inventory to the reactor coolant system, and it did not degrade the ability to recover decay heat removal capability if lost.
Inspection Report# : 2006002 *(pdf)*

Mitigating Systems

Significance: G Dec 31, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to perform timely corrective actions for a revision to an Offsite Electrical Power Voltage Calculation
The inspectors identified a Green non-cited violation (NCV) of 10 CFR 50 Appendix B Criterion XVI, "Corrective Actions," because a condition adverse to quality related to a non-conservative offsite electrical voltage calculation was identified by Exelon in March 2005, but was not promptly corrected. The untimely corrective actions contributed to a missed Technical Specification limiting condition for operation for the required offsite electrical power supplies for Units 1 and 2 in July 2006. Exelon completed a revision to the electrical grid voltage calculation, in September 2006, and adjusted the safeguards transformer tap changer settings to prevent a potential loss of offsite electrical power for a postulated single Unit trip in conjunction with a loss of coolant accident event. Exelon has entered this issue into their corrective action program for resolution.

The Region I SRA determined that this issue was of very low safety significance (Green) based on a Phase 3 risk evaluation, conducted after determining that a Phase 2 analysis was not appropriate for this issue. Phase 1 of the SDP screened the issue as needing further evaluation because the finding results in the offsite power safety function being inoperable for longer than its TS limiting condition of operation. The Phase 3 analysis used the Limerick SPAR model, assuming that, for a two day period, any LOCA initiating event would also cause a loss of offsite power. The SPAR model identified a core damage increase that was several orders of magnitude below the 1 in 10,000,000 year range (E-7). This very small increase was driven by the low frequency of LOCA initiating events and the short exposure time. The dominate core damage sequence, given a LOCA without offsite power, was a failure of all EDGs due to a common cause.

This issue has a cross-cutting aspect in the Problem Identification and Resolution area for corrective action program. Specifically, the voltage regulation study calculation was not revised in a timely manner.
Inspection Report# : 2006005 *(pdf)*

Significance: G Jun 23, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
The team identified a non-cited violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," because Exelon's actions to correct a Residual Heat Removal (RHR) system procedure deficiency, i
The team identified a non-cited violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," for the failure to implement effective corrective actions to correct a residual heat removal (RHR) system procedure deficiency. Specifically, a procedure change, implemented following a March 2003 high pressure condition, was ineffective in eliminating the potential for a high pressure condition (water hammer) in the RHR system, when placing the system inservice for alternate decay heat removal in May 2006. The licensee entered this deficiency into their corrective action program for resolution.

This finding is greater than minor because if left uncorrected, it would become a more significant safety concern. The finding was determined to be of very low safety significance in accordance with the shutdown SDP, because it did not increase the likelihood of a loss of reactor coolant system (RCS) inventory, it did not result in an inadvertent change in RCS temperature due to a loss of RHR, it did not result in an inadvertent RCS pressurization, and it did not degrade the ability to recover decay heat removal capability if lost.

Inspection Report# : 2006006 *(pdf)*

Barrier Integrity

Significance: G Jun 27, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Annual Operating Test Administered at Limerick
The inspectors identified a Green non-cited violation (NCV) of 10CFR55.59 (a)(2)(ii) for an inadequate annual operating test that was administered at Limerick. Exelon procedures and commitments made by the licensee in 1991 require questions on job performance measures (JPMs) to explore the differences, if any, in task performance between Limerick and Peach Bottom. At least three of the five JPMs had significant differences in the way the task is performed at Limerick versus the same task at Peach Bottom. These three JPMs should have had questions to explore these differences, but did not. Exelon has entered this issue into their corrective action program for resolution.

The inspectors determined that the inadequate annual operating test administered at Limerick was more than minor because it was associated with the human performance attribute and affected the barrier integrity cornerstone objective to provide reasonable assurance that physical design barriers (fuel cladding, reactor coolant system, and containment) protect the public from radio nuclide releases caused by accidents or events. The finding is of very low safety significance (Green) because the inadequate annual operating test did not have an adverse impact on operator actions such that safety related equipment was made inoperable during normal operations or in response to a plant transient.
Inspection Report# : 2006003 *(pdf)*

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Physical Protection information not publicly available.

Miscellaneous

Significance: N/A Jun 23, 2006
Identified By: NRC
Item Type: FIN Finding
Identification and Resolution of Problems
The team identified that Exelon was effectively implementing the corrective action program at the Limerick Generating Station. Exelon staff was routinely effective at identifying discrepant conditions at an appropriate threshold and entering them into the corrective action program. Identified issues were typically prioritized appropriately and were properly evaluated commensurate with the potential safety significance. The evaluations of issues identified the causes of the problem, the extent-of-condition, and provided for corrective actions appropriate to address the causes. Corrective actions were routinely implemented in a timely manner. The majority of the corrective actions reviewed were fully effective. Audits and self-assessments identified adverse conditions and negative trends, and were generally self-critical and consistent with the team's findings. Operating experience usage was also found to be effective. The team identified a few minor examples where the problem identification and corrective action aspects of the corrective action program were not fully effective. The team also identified one greater than minor example where corrective actions were ineffective regarding a residual heat exchanger procedure revision. Exelon took prompt actions to address the issues identified by the team.
Inspection Report# : 2006006 *(pdf)*

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