Oyster Creek
4Q/2016 Plant Inspection Findings

Initiating Events

Significance: G Jun 30, 2016
Identified By: Self-Revealing
Item Type: NCV Non-Cited Violation
Inadequate Maintenance Procedure associated with Reactor Recirculation Pump Seal
A self-revealing NCV of Technical Specification 6.8.1, "Procedures and Programs," was identified because Exelon did not adequately establish and maintain the reactor recirculation pump (RRP) reassembly maintenance procedures as required by NRC Regulatory Guide 1.33, Appendix A, Section 9, "Procedures for Performing Maintenance." Specifically, the RRP reassembly procedure, 2400-SMM-3226.03, "Reactor Recirculation Pump Mechanical Seal Rebuild Using CAN-2A Parts," did not provide critical dimensional checks for the locking plate and seal adjusting cap. Exelon entered this issue into their corrective action program as issue report 2663436. The corrective actions included revising RRP maintenance procedures to include critical dimensional information.

This finding is more than minor because it is associated with the procedure quality attribute of the Initiating Events cornerstone and affected the objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown and power operation. Specifically, the incorrect reassembly of the 'D' RRP created a leakage path, which led to an unexpected increase in RCS unidentified leakage. As a result, the operators inserted a manual scram on April 30, 2016. The inspectors evaluated the finding using IMC 0609, Attachment 4, "Initial Screening and Characterization of Findings," and IMC 0609, Appendix A, Exhibit 1, "Initiating Event Screening Questions." The inspectors determined that this finding is a transient initiator that did not contribute to both the likelihood of 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, and therefore was of very low safety significance (Green). The inspectors determined that there was no cross-cutting aspect associated with this finding since it was not representative of current Exelon performance. Specifically, in accordance with IMC 0612, the causal factors associated with this finding occurred outside the nominal three-year period of consideration and were not considered representative of present performance. (Section 4AO3)

Inspection Report# : 2016002 *(pdf)*

Mitigating Systems

Significance: W Dec 31, 2016
Identified By: NRC
Item Type: AV Apparent Violation
'E' EMRV Failure to Stroke Due to Incorrect Reassembly
(Initial Entry)
The NRC identified a preliminary White finding and associated apparent violation of Technical Specification 6.8.1, "Procedures and Programs," and Technical Specification 3.4.B, "Automatic Depressurization System," because Exelon failed to implement a procedure related to the maintenance of safety related equipment. Specifically, Exelon

personnel did not follow EMRV reassembly instructions that required personnel to reinstall previously removed lock washers from the ‘E’ EMRV cut-out switch lever. The incorrect reassembly caused excessive friction between the solenoid frame and the cut-out switch lever, which led to the ‘E’ EMRV’s failure to perform its safety function. This resulted in one inoperable EMRV for greater than the Technical Specification allowed outage time. The issue was entered into the corrective action program as issue report 2722109, and Exelon’s immediate corrective actions include installing new cut-out switch lever plates with increased clearances, replacing star lock washers with split ring lock washers for additional clearance, and verifying the five EMRV solenoid actuations being installed into the drywell following the most recent refueling outage were correctly assembled.

The finding is more than minor because it adversely affects the human performance quality attribute of the Mitigating Systems fornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the missing lock washers due to the incorrect EMRV lever plate reassembly caused excessive friction between the solenoid frame and the cut-out switch lever, causing the cut-out switch lever to become bound in the energized position. This led to the ‘E’ EMRV’s failure to perform its safety function.

The inspectors screened this issue for safety significance in accordance with Inspection Manual Chapter 0609, Appendix A, Exhibit 2, “Mitigating Systems Screening Questions,” and determined a detailed risk evaluation was required because the ‘E’ EMRV had potentially failed or was unreliable for greater than the Technical Specification allowed outage time. The finding has a cross-cutting aspect in the area of Human Performance, Procedure Adherence, because Exelon did not follow processes. Specifically, Exelon did not follow written instructions when reassembling the ‘E’ EMRV. The missing lock washers resulted in excessive friction between the solenoid frame and cut-out switch lever, causing the cut-out switch lever to become bound in the energized position, which led to the ‘E’ EMRV’s failure to perform its safety function.

Inspection Report# : 2016004 *(pdf)*

Significance: G Mar 31, 2016
Identified By: NRC
Item Type: NCV Non-Cited Violation
Failure to Identify a Slower than Normal Scram Time of a Control Rod Drive
The inspectors identified an NCV of 10 CFR 50, Appendix B, Criterion XVI, “Corrective Action,” because Exelon did not promptly identify and correct a condition adverse to quality. Specifically, Exelon did not identify the scram time test result for control rod drive 18-47 was beyond the analyzed scram time, which resulted in a degraded control rod drive. Exelon entered this issue into their corrective action program and immediate corrective actions included fully inserting the control rod drive and developing a casual analysis to determine the degraded condition.

The performance deficiency is more than minor because it is associated with the configuration control attribute of the Mitigating Systems cornerstone and affected the cornerstone objective of ensuring the availability, reliability and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the performance deficiency affected the reliability of control rod drive 18-47 to perform its safety function due to a slower than normal scram time. The inspectors evaluated the finding using IMC 0609, Attachment 4, “Initial Screening and Characterization of Findings,” and determined the finding to be of very low safety significance (Green). The finding has a cross-cutting aspect in the area of Problem Identification and Resolution, Identification, because Exelon did not identify issues completely, accurately, and in a timely manner in accordance with the program. Specifically, Exelon did not identify that the actual scram time of control rod drive 18-47 was beyond the analyzed scram time resulting in a degraded control rod drive. [P.1] (Section 1R15

Inspection Report# : 2016001 *(pdf)*

Significance: W Mar 31, 2016
Identified By: NRC
Item Type: VIO Violation
Inadequate Instructions for the Flexible Coupling Hose Preventative Maintenance Resulting in an Inoperable Emergency Diesel Generator
(Initial Entry)
The inspectors identified a preliminary White finding and associated apparent violation of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," because Exelon did not appropriately prescribe instructions or procedures for maintenance on the emergency diesel generator (EDG) No. 1 cooling water system to ensure the EDG cooling flexible coupling hose was maintained to support the EDG safety function. Specifically, Exelon did not have appropriate work instructions to replace the EDG cooling flexible coupling hoses every 12 years as specified by Exelon's procedure and vendor information. As a result, the flexible coupling hose was in service for approximately 22 years and subjected to thermal degradation and aging that eventually led to the EDG No. 1 failure on January 4, 2016. As a consequence of this inappropriate work instruction issue, Exelon also violated Technical Specification 3.7.C because EDG No. 1 was determined to be inoperable for greater than the technical specification allowed outage time of seven days. Exelon's immediate corrective actions included entering the issue into their corrective action program (issue reports 2607247 and 2610027), replacing of the EDG No. 1 and No. 2 flexible coupling hoses, and initiating a failure analysis to determine the causes of the failed flexible coupling hose.

This finding is more than minor because it is associated with the equipment performance attribute of the Mitigating Systems cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the ruptured flexible coupling hose caused the inability of the EDG No.1 to perform its safety function. In accordance with IMC 0609.04, "Initial Characterization of Findings," and Exhibit 2 of IMC 0609, Appendix A, "The Significance Determination Process for Findings At-Power," issued June 19, 2012, the inspectors screened the finding for safety significance and determined that a detailed risk evaluation was required because EDG No. 1 was inoperable for greater than the technical specification allowed outage time of 7 days. The detailed risk evaluation concluded that the increase in core damage frequency was 5.1E-6, or White (low to moderate safety significance). This finding does not have an associated cross-cutting. aspect because the performance deficiency occurred in 2005 and is not reflective of present performance.
(IR 05000219/2016001 and 05000219/2016009 dated May 12, 2016)

(Final Entry)
The NRC staff performed this supplemental inspection in accordance with IP 95001, "Supplemental Inspection for One or Two White Inputs in a Strategic Performance Area," to assess Exelon's evaluation of a performance deficiency and violation of White significance, associated with the Mitigating Systems cornerstone, which was identified in the first quarter 2016 integrated inspection report (Agencywide Documents Access and Management System (ADAMS) Accession Number ML16132A436). The finding was associated with inadequate instructions for the flexible coupling hose preventative maintenance template resulting in an inoperable emergency diesel generator (EDG). The final significance determination and follow- up assessment letter for this finding, which was issued on July 6, 2016, documented that Oyster Creek transitioned to the Regulatory Response Column of the ROP Action Matrix, retroactive to the first quarter of 2016. The NRC staff was informed on June 14, 2016, of your staff's readiness for this inspection.

Based on the results of the inspection, the inspectors concluded that Exelon had adequately performed a root cause analysis of the event, and corrective actions, both completed and planned, were reasonable to address the related issues. Based on the guidance in Inspection Manual Chapter (IMC) 0305, "Operating Reactor Assessment Program," dated October 18, 2013, and the results of this inspection, the White finding will be closed by this report. However, Oyster Creek will remain in the Regulatory Response Column until four quarters have elapsed since the White finding was originally documented in the first quarter of 2016. (IR 05000219/2016011 dated August 10, 2016)

Inspection Report# : 2016001 *(pdf)*
Inspection Report# : 2016009 *(pdf)*
Inspection Report# : 2016011 *(pdf)*

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Significance: G Mar 31, 2016
Identified By: Self-Revealing
Item Type: NCV Non-Cited Violation
Failure to Use Respiratory Protection as Required in RWP/ALARA Plan for Drywell Head Reassembly
A self-revealing Green NCV of Technical Specification 6.8.1, "Procedures and Programs" was identified for Exelon's failure to use respiratory protection, as required in the radiation work permit (RWP)/as low as reasonably achievable (ALARA) plan 14-406 for drywell head reassembly work on October 2, 2014. The radiation protection (RP) supervisor overseeing this work removed the respiratory protection requirement for this work contrary to the RWP/ALARA requirement and without engineering approval. As a result, two workers received an unplanned intake of radioactive material that resulted in unintended internal dose. Exelon stopped work on this task and subsequently enforced the respiratory protection requirements to complete the remaining work and entered this event into their corrective action program as issue report (IR) 2390111.

This finding is more than minor because it is associated with the Occupational Radiation Safety Cornerstone to ensure adequate protection of the worker from radiation exposure. Specifically, without the use of respiratory protection two workers received unintended internal dose. The inspectors evaluated the finding using inspection manual chapter 0609, Appendix C, "Occupational Radiation Safety Significance Determination Process." The inspectors determined that this finding is of very low safety significance (Green), because it did not result in an overexposure, there was no substantial potential for an overexposure, and the ability to assess dose was not compromised. This finding has a cross-cutting aspect in Human Performance, Procedural Adherence, because Exelon did not follow procedures and work instructions. Specifically, RP supervision instructed the workers that respiratory protection was not required contrary to the applicable RWP/ALARA plan. [H.8] (Section 2RS1)

Inspection Report# : 2016001 *(pdf)*

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 : February 01, 2017