Oyster Creek
3Q/2011 Plant Inspection Findings

Initiating Events

Significance: G Mar 31, 2011
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Establish Proper Baseline Data for Service Water Pumps in Accordance with ASME Code
The inspectors identified a Green NCV of 10CFR 50.55a, Codes and Standards, because Exelon did not properly establish baseline reference values for the service water pumps as required by the American Society of Mechanical Engineers (ASME) Operation and Maintenance (OM) Code for Inservice Testing (lST). Exelon procedure 641.1.001, "Seryice Water Pump Operability and In-Service Test" required the operators to take differential pressure baseline data at three flow rates, while the ASME requirement in subsection ISTB (lST of pumps in light-water reactor power plants) paragraph 4.1, "Preservice Testing" requires that this data be taken at a minimum of five points. Exelon's corrective actions included revising procedure 641.1.001 to be in accordance with the ASME code, rebaselining #1 and #2 service water pumps, and performing an extent of condition review to ensure that all pumps are baselined in accordance with the ASME Code. Exelon entered this issue into the CAP as lR 1175089.

This finding is more than minor because it is similar to IMC 0612 Appendix E minor example 2.cin that the same issue affected both service water pumps and both have experienced degrading performance into the action range. Additionally, the finding is more than minor because if left uncorrected it could have the potential to lead to a more significant safety concern. The inspectors used Inspection Manual Chapter 0609.04, Phase 1 lnitial Screening and Characterization of Findings, to determine that the NCV screened as very low safety significance (Green). This finding is applicable to the lnitiating Events cornerstone as a transient initiator, but screens as Green because the finding does not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions would not be available. This finding has a cross-cutting aspect in the area of human performance, resources, where complete, accurate, and upto-date procedures are available and adequate to assure nuclear safety. (1R22)

Inspection Report# : 2011002 *(pdf)*

Significance: G Dec 31, 2010
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failure to Implement Procedures Resulting in Reactor Scram
A Green, self-revealing NCV of Technical Specification 6.8.1.a occurred when Exelon did not adequately implement plant startup procedures which resulted in an automatic reactor scram. Immediate corrective actions included just in time training with all reactor operators, increased management oversight during the subsequent startup, and procedural changes to list all alarms by name that must be cleared prior to raising reactor pressure above 500 psig. Exelon is performing a full root cause evaluation on the event (IR 1155520).

The inspectors determined that the performance deficiency was similar to the “not minor if” statement contained in example 4b of IMC 0612, Appendix E, “Examples of Minor Issues,” because the performance issue resulted in a manual reactor scram. The finding was more than minor in accordance with IMC 0612, Appendix B, “Issue Screening,” because it was associated with the equipment performance 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 power operation. In accordance with IMC 0609.04 (Table 4a), “Phase 1 – Initial Screen and Characterization of Findings,” the finding was determined to be of very low safety significance (Green) because the finding did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions would not be available. This finding has a cross-cutting aspect in the area of human performance, work practices (H.4(b)), where personnel work practices support human performance. Specifically, Exelon defines and effectively communicates expectations regarding procedural compliance and personnel follow procedures. On December 23, operators did not verify that condenser vacuum was adequate prior to raising reactor pressure above 500 psig contrary to established procedural guidance.

Inspection Report# : 2010005 *(pdf)*

Mitigating Systems

Significance: G Jun 30, 2011
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to perform acceptance inspection of contractor work results in damage to safety related instrument cable
The inspectors identified a NCV of 10 CFR Part 50, Appendix B, Criterion X, “Inspection,” when Exelon did not conduct a post maintenance inspection of work accomplished by a contractor on main steam isolation valve (MSIV), V-1-10, which resulted in heat damage to the valve position indication cabling causing a ground on the cable and the receipt of a half scram. Exelon’s corrective actions included replacement of the damaged cable, performance of a work group evaluation and revising the main steam insulation work orders to include a caution to not install insulation on top of cabling.

The finding was more than minor because it affected the design control attribute of the Mitigating Systems Cornerstone of equipment performance to ensure the availability, reliability, and capability of a class I cable. Additionally, this finding is similar to IMC 0612, Appendix E, Example 4.a, in that an evaluation required by procedures was not performed and resulted in a failure in the system. The inspectors evaluated the risk of this finding using IMC 0609, “Significance Determination Process,” Attachment 4, “Phase 1 - Initial Screening and Characterization of Findings.” The inspectors determined that the finding was of very low safety significance (green) because it did not result in an actual loss of function of the MSIV or the reactor protection system. The inspectors determined that this performance deficiency did not involve a cross cutting aspect as it occurred 4 years earlier and is not indicative of current licensee performance. (Section 1R12)

Inspection Report# : 2011003 *(pdf)*

Significance: G Apr 01, 2011
Identified By: NRC
Item Type: NCV NonCited Violation
Control Cables for the Reactor Coolant Inventory Makeup Source Not Protected From Fire Damage
The team identified an NCV of 10 CFR 50, Appendix R, lll.G.2, in that Exelon failed to maintain the credited reactor coolant inventory makeup system free of fire damage in the event of a fire in the 'B' 480 volt (V) switchgear room. Specifically, Exelon failed to assure that the 'A' control rod drive (CRD) pump would remain available during 'B'480V switchgear room fire scenarios. Cables associated with the'A'CRD pump low pressure suction trip are located in the 'B' 480V switchgear room and are not protected by one of the methods specified in 10 CFR 50, Appendix R, Section lll.G.2. Fire damage to these cables could result in the trip of the credited 'A' pump and render it inoperable from the control room. Exelon entered this issue into its corrective action program for long term resolution as lssue Report (lR) 01187591 and promptly established compensatory measures (an hourly fire watch) in the 'B' 480V switchgear room. Exelon also promptly performed an extent of condition review to ensure the 'B' CRD pump was not similarly affected for fire areas that credited its remote operation from the main

control room.

This finding is more than minor because it is associated with the external factors attribute (fire) of the Mitigating Systems Cornerstone and adversely affects 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 availability of the credited 'A' CRD pump was not ensured for a 'B'480V switchgear room fire scenario. A Senior Reactor Analyst performed a Phase 3 Fire Protection Significance Determination Process analysis and determined that this finding was of very low safety significance (Green). The Phase 3 SDP conservatively assumed the 'A' CRD pump failed for eight separate fire scenarios initiated by electrical ignition sources or transient combustibles. The results of the SDP were largely dominated by the availability of the feedwater and condensate system for reactor coolant inventory control because its circuits were not routed through the 'B' 480V switchgear room. This finding did not have a cross-cutting aspect because the performance deficiency occurred during development of the safe shutdown analysis in the 1980's and is not reflective of current licensee performance.
Inspection Report# : 2011007 *(pdf)*

Significance: G Mar 31, 2011
Identified By: NRC
Item Type: FIN Finding
Failure to Make an Accurate lmmediate Operability Determination
The inspectors identified a finding of very low safety significance (Green) when Exelon did not make an accurate immediate operability determination in accordance with OP-M-108-115 "Operability Determinations" following discovery of a through wall leak in the emergency service water (ESW) pump discharge piping. The finding does not involve enforcement action because no violation of regulatory requirements was identified. Exelon's corrective actions included performing a prompt operability determination which determined that the piping was inoperable, replacing the discharge tee for the 'C' ESW pump, and performing detailed ultrasonic tests on the remaining portions of the ESW piping at the intake structure. Exelon placed this issue in the corrective action program (CAP) as lR 1164020.

The finding is more than minor because it affects the procedure quality attribute of the mitigating systems cornerstone to ensure the availability, reliability and capability of systems that respond to initiating events to prevent undesirable consequences, specifically the ESW system piping. In accordance with table 4a of IMC 0609.04, "Phase 1 - Initial Screening and Characterization of Findings," the finding was determined to be of very low safety significance (Green) because it was not a design or qualification deficiency confirmed not to result in loss of operability or functionality; did not result in a loss of system safety function; did not represent an actual loss of safety function of a single train for greater than its technical specification allowed outage time; was not an actual loss of safety function of one or more non-technical specification trains of equipment designated as risk significant per 10CFR50.65 for greater than 24 hours and did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. This finding has a cross-cutting aspect in the area of human performance, resources because Exelon did not ensure that procedures were available and adequate to ensure nuclear safety, specifically the accuracy of Attachment 3 to OPAA-108-115 was not adequate to guide a STA/SRO to the proper operability determination when evaluating leakage from an ASME class 1 ,2 or 3 component.
Inspection Report# : 2011002 *(pdf)*

Significance: G Mar 31, 2011
Identified By: NRC
Item Type: NCV NonCited Violation

Failure to Establish Procedures for Responding to the Loss of Control Room Annunciator
The inspectors identified a Green NCV of technical specification 6.8.1.a for Exelon's failure to have written procedures for activities listed in Regulatory Guide 1.33 , which includes procedures for abnormal, off-normal, or alarm conditions and procedures for combating emergencies and other significant events. Specifically, Exelon did not have a procedure to cope with a loss of main control room annunciators. Exelon entered this issue into the CAP as lR 1205823.

This finding is not similar to any of the IMC 0612 Appendix E minor examples, but is more than minor because it affects the procedure quality attribute of the mitigating systems cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors used lnspection Manual Chapter 0609 Appendix M, "Significance Determination Process Using Qualitative Criteria," because other significance determination process guidance was not suited to provide reasonable estimates of the significance of this inspection finding. With the assistance of NRC management, the inspectors determined that the finding was of very low safety significance (Green) because there was no actual loss of safety system function during the time period the annunciator panels were inoperable. This finding has a cross-cutting aspect in the area of human performance, resources (H.2(c)), where complete, accurate, and up-to-date procedures are available and adequate to assure nuclear safety. (Section 4OA3)
Inspection Report# : 2011002 *(pdf)*

Significance: G Dec 31, 2010
Identified By: NRC
Item Type: NCV NonCited Violation
Snubber Maintenance History Not Taken Into Account When Conducting Service Life Reviews
The inspectors identified a Green non-cited violation of technical specification 4.5.M.1.f, “Snubber Service Life Monitoring”, while inspecting 4 snubber testing failures that occurred during 1R23. Specifically, Exelon’s snubber testing program, contained in SP-1302-52-045, “Requirements for Functional Testing of Snubbers”, does not evaluate snubber maintenance and test records to identify common cause failures of snubbers due to environmental (temperature, vibration, humidity, etc) conditions and adjust snubber service life expectations accordingly so snubber service life reviews can be accomplished effectively without service life affecting reactor operations. Exelon took immediate corrective action to repair or replace the failed snubbers, performed an analysis to ensure the snubber failures had no impact on system operation, and entered this issue into their corrective action program.

There are no similar examples in IMC 0612, Appendix E, “Examples of Minor Issues”. This finding is more than minor because it affects the equipment performance attribute of the mitigating systems cornerstone to ensure the availability, reliability and capability of system that respond to initiating events to prevent undesirable consequence, specifically the safety related piping systems in containment. In accordance with table 4a of IMC 0609.04, “Phase 1 – Initial Screening and Characterization of Findings,” the finding was determined to be of very low safety significance (Green) because it was a qualification deficiency confirmed not to result in loss of operability or functionality. This finding has a cross-cutting aspect in the area of problem identification and resolution because Exelon did not thoroughly evaluate problems such that the resolutions address causes and extent of conditions. Additionally, Exelon did not conduct effectiveness reviews of corrective actions to ensure that the problems are resolved. (P.1(c)).

Inspection Report# : 2010005 *(pdf)*

Barrier Integrity

Significance: G Apr 01, 2011
Identified By: NRC
Item Type: NCV NonCited Violation

B.5.b. Phase 2 and 3 Mitigating Strategy
This finding, affecting the Barrier Integrity Cornerstone, is related to mitigative measures developed to cope with losses of large areas of the plant; in response to Section B.5.b. of the February 25, 2002, Interim Compensatory Measures (ICM) Order (EA-02-026) and related NRC guidance. This finding has been designated as "Official Use Only - Security-Related Information;" therefore, the details of this finding are being withheld from public disclosure. This finding has a cross-cutting aspect in the area of H.2.(C). See inspection report for more details.
Inspection Report# : 2011009 *(pdf)*

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Significance: G Dec 31, 2010
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failure to Conduct Representative Sampling of Stack Effluents
A Green, self-revealing NCV of Technical Specification 6.8.4 occurred for Exelon's failure to maintain continuous, representative monitoring and sampling of plant stack gaseous effluents, as required by the Offsite Dose Calculation Manual, due to degradation of sample line integrity over the period March 2006 through March 2010. Exelon reported the issue, initiated compensatory monitoring, repaired the stack sample tubing, conducted bounding dose calculations, and entered this issue, including the evaluation of extent-of-condition, into the corrective action program (IR 01053577).

This finding is more than minor because the performance deficiency adversely impacted the Public Cornerstone objective of ensuring adequate protection of public health and safety in that effluent releases were not fully monitored in accordance with applicable requirements to ensure proper quantification and characterization of radioactive releases. This finding was assessed for significance using IMC 0609, Appendix D, and determined to be of very low safety significance because: Exelon was able to re-assess the radioactive effluent using alternative radiation monitoring instrumentation and programs, therefore Exelon had data by which to assess dose to a member of the public, determine the dose impact to the public, and conclude that the doses were less than the dose values in Appendix I to 10 CFR Part 50 and/or 10 CFR 20.1301(e). The cause of this finding is related to the crosscutting area of Human Performance, Resources aspect H.2(c) because procedures were not sufficiently robust for review of reasonableness and consistency of data from samples to support identification of the issue in a timely manner.

Inspection Report# : 2010005 *(pdf)*

Physical Protection

Although the NRC is actively overseeing the Security cornerstone, the Commission has decided that certain findings pertaining to security cornerstone will not be publicly available to ensure that potentially useful information is not provided to a possible adversary. Therefore, the cover letters to security inspection reports may be viewed.

Miscellaneous

Significance: SL-IV Mar 31, 2011
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Administer Post Event Fitness for Duty Testing
The inspectors identified a Severity Level (SL) lV, non-cited violation (NCV) of 10 CFR 26.31 (c) (3) and Exelon procedure SY-AA-102-202, "Testing For Cause," for failure to administer post-event drug and alcohol testing after a potential substantial degradation of the level of safety of the plant occurred on December, 23,2010. Additionally, the inspectors identified that the licensee failed to administer a post event fatigue assessment per 10 CFR 26.211 (aX3) and Exelon procedure LS-AA-1 19-1001 , "Fatigue Management." Specifically, the inspectors identified that on December, 23, 2010, the licensee failed to conduct post-event drug and alcohol testing, and fatigue assessments of the operators whose human error caused a reactor scram during a reactor startup. Upon identification, the licensee entered this issue into the CAP.

The inspectors determined that the finding involved traditional enforcement because Exelon did not perform 10 CFR 26.31 post event fitness for duty (FFD) testing and 10 CFR 26.211 post event fatigue assessments. lf a licensed operator had tested positive, Exelon would have had to report this to the NRC per 10 CFR26.719 (2xii). Exelon's failure to perform the required testing had the potential to impact the NRC's ability to take action against individual licensed operators, which impacted the regulatory process. In accordance with Section 6.14, "Fitness for Duty," of the NRC Enforcement Policy, the NRC determined that the safety significance of this violation met the SL lV criteria because the situation, per example 3 of a SL lV violation, was a matter with more than a minor safety or environmental significance. (Section 4OA2)
Inspection Report# : 2011002 *(pdf)*

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