

# Oyster Creek

## 4Q/2011 Plant Inspection Findings

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### Initiating Events

**Significance:**  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 (IST). Exelon procedure 641.1.001, "Service 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 (IST 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 IR 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 Initial Screening and Characterization of Findings, to determine that the NCV screened as very low safety significance (Green). This finding is applicable to the Initiating 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 up-to-date procedures are available and adequate to assure nuclear safety. (1R22)

Inspection Report# : [2011002](#) (*pdf*)

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### Mitigating Systems

**Significance:**  Dec 31, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

#### **Failure to Establish New Reference Values in Accordance with ASME Code**

Green. The inspectors identified a Green NCV of 10 CFR Part 50.55a, Codes and Standards, because Exelon did not complete an adequate analysis when establishing a new reference value for the A containment spray pump in accordance with the American Society of Mechanical Engineer (ASME) Operation and Maintenance (OM) Code Subsection ISTB 4.6. The inspectors determined that Exelon's failure to correctly establish a new reference value for the A containment spray pump in accordance with the requirements of ASME OM Code Subsection ISTB 4.6 was a performance deficiency. Exelon entered this issue into the corrective action program for resolution as IR 1281326.

This finding is more than minor because it is similar to IMC 0612 Appendix C Example 3.j in that there was a reasonable doubt that the system met ASME operability requirements due to the inadequate evaluation. Additionally, the inspectors determined that this issue was more than minor because it affected the procedure quality attribute of the Mitigating Systems cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). The inspectors determined this finding was not a design qualification deficiency resulting in a loss of functionality or operability, did not represent an actual loss of safety function of a system or train of equipment, and was not potentially risk-significant due to a seismic, fire, flooding, or severe weather initiating event. Therefore, the finding is considered to be of very low safety significance.

This finding has a cross-cutting aspect in the area of Mitigating Systems cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences, because Exelon did not fully follow the ASME requirements in Subsection ISTB 4.6, New Reference Values.

Inspection Report# : [2011005](#) (pdf)

**Significance:**  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:**  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, III.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 III.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 Issue Report (IR) 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:**  Mar 31, 2011

Identified By: NRC

Item Type: FIN Finding

#### **Failure to Make an Accurate Immediate 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 IR 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:**  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 IR 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 Inspection 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*)

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## **Barrier Integrity**

**Significance:**  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*)

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## **Emergency Preparedness**

**Significance:**  Aug 15, 2011

Identified By: NRC

Item Type: FIN Finding

### **Changes to EAL Basis Decreased the Effectiveness of the Plan without Prior NRC Approval**

In response to the NCV and finding, Exelon entered the issue into their corrective action program as IR 01184333 and subsequently implemented Revision 3 of the Oyster Creek Emergency Plan, which restored the EAL HU6 Basis to the Revision 10 (of the pre-Exelon Revision 0 Emergency Plan) guidance, thereby removing the decrease in effectiveness. The inspectors reviewed IR 01184333 and the revised version of the HU6 Basis, and discussed the corrective actions with the Oyster Creek Emergency Preparedness staff.  
Closed in IR 2011005.

Inspection Report# : [2011005](#) (*pdf*)

Inspection Report# : [2011503](#) (*pdf*)

**Significance:**  Aug 15, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

### **Traditional Enforcement Changes to EAL Basis Decreased the Effectiveness of the Plan without Prior NRC Approval**

Severity Level IV/Green: The inspector identified a finding of very low safety significance involving a Severity Level IV NCV of 10 CFR 50.54(q) for failing to obtain prior approval for an emergency plan change which decreased the effectiveness of the plan. Specifically, the licensee modified the Emergency Action Level (EAL) Basis in EAL HU6, which indefinitely extended the start of the 1S-minute emergency classification clock beyond a credible notification that a fire is occurring or indication of a valid fire detection system alarm. This change decreased the effectiveness of the emergency plan by reducing the capability to perform a risk significant planning function in a timely manner.

The violation affected the NRC's ability to perform its regulatory function because it involved implementing a change that decreased the effectiveness of the emergency plan without NRC approval. Therefore, this issue was evaluated using Traditional Enforcement. The NRC determined that a Severity Level IV violation was appropriate due to the reduction of the capability to perform a risk significant planning standard function in a timely manner. The licensee entered this issue into its corrective action program and revised the EAL basis to restore compliance.

The finding was more than minor using IMC 0612, because it is associated with the emergency preparedness cornerstone attribute of procedure quality for EAL and emergency plan changes, and it adversely affected the cornerstone objective of ensuring that the licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. Therefore, the performance deficiency was a finding. Using IMC 0609, Appendix B, the inspector determined that the finding had a very low safety significance because the finding is a failure to comply with 10 CFR 50.54(q) involving the risk significant planning standard 50.47(bX4), which, in this case, met the example of a Green finding because it involved one Unusual Event classification (EAL HUO).

Due to the age of this issue, it was not determined to be reflective of current licensee performance and therefore a cross-cutting aspect was not assigned to this finding.

Inspection Report# : [2011005](#) (*pdf*)

Inspection Report# : [2011503](#) (*pdf*)

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## **Occupational Radiation Safety**

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## **Public Radiation Safety**

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## **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.

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## 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) IV, 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. If 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 IV criteria because the situation, per example 3 of a SL IV violation, was a matter with more than a minor safety or environmental significance. (Section 40A2)

Inspection Report# : [2011002](#) (*pdf*)

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