

# Oyster Creek

## 3Q/2010 Plant Inspection Findings

### Initiating Events

### Mitigating Systems

Significance: G Jul 02, 2010

Identified By: NRC

Item Type: FIN Finding

#### Preconditioning of Isolation Condenser Valves Prior to ASME In-service Test

Green: The inspectors identified a Green finding when Exelon cycled valves for maintenance prior to performing scheduled quarterly in-service testing (IST) which resulted in unacceptable preconditioning of valves within the isolation condenser system on April 7. This finding was of very low safety significance and was determined not to be a violation of NRC requirements. Exelon entered this issue into their corrective action system as IR 1053801.

The finding was more than minor because it was associated with the equipment performance attribute of the mitigating systems cornerstone and affected the objective to ensure the reliability and capability of systems that respond to initiating events to prevent undesirable consequences. In accordance with IMC 0609.04, "Phase 1 – Initial Screening and Characterization of Findings," the finding was determined to be of very low safety significance because it was not a design or qualification deficiency which resulted in a loss of operability or functionality, did not represent 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, did not represent an actual loss of safety function of one or more non-technical specification trains of equipment designated as risk-significant for greater than 24 hours, and was not potentially risk significant due to a seismic, flooding or severe weather initiating event.

The performance deficiency had a cross-cutting aspect in the area of human performance because Exelon did not appropriately coordinate work activities to support long term equipment reliability. [H.3(b)]. (Section 1R19)

Inspection Report# : [2010003 \(pdf\)](#)

Significance: G Jul 02, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

#### Core Spray ASME Code Compliance Issues

Green: The inspectors identified a SL IV, Green non-cited violation of 10CFR50.55(a) when Exelon did not properly implement the ASME code requirements for the core spray system check valves. Specifically, Exelon did not properly implement the ASME Check Valve Condition Monitoring Program, improperly extended the inspection interval when working under the condition monitoring program, and did not restore compliance with the ASME code for check valve testing once the condition monitoring program requirements were not met. Exelon entered this issue into their corrective action system as IR 1093256.

This finding is more than minor because it affects the equipment performance attribute of the mitigating system cornerstone to ensure the reliability and availability of the core spray system. Specifically, ASME testing assesses the operational readiness of certain valves required to perform a specific safety function. In accordance with IMC 0609.04, "Phase 1 – Initial Screening and Characterization of Findings," the finding was determined to be of very low safety significance because it was not a design or qualification deficiency which resulted in a loss of operability or functionality, did not represent 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, did not represent an actual loss of safety

function of one or more non-technical specification trains of equipment designated as risk-significant for greater than 24 hours, and was not potentially risk significant due to a seismic, flooding or severe weather initiating event.

The inspectors determined that the finding also involved traditional enforcement because Exelon did not seek NRC approval prior to using alternate means to demonstrate the core spray check valves could perform their intended function, which impacted the regulatory process. In accordance with Supplement I, Reactor Operations, of the NRC Enforcement Policy, the NRC determined that the safety significance of this violation was SL IV because the situation, per example 3 of a SL IV violation, was a matter with more than a minor safety or environmental significance.

This finding has a cross-cutting aspect in the area of human performance because Exelon did not use conservative assumptions in decision making and assumed the core spray system check valves would be in compliance with the ASME code despite using a non-approved testing method (H.1(b)). (Section 1R15)

Inspection Report# : [2010003](#) ([pdf](#))

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**Significance:** Jul 02, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to Follow Preventive Maintenance Procedure Leading to Incomplete Fire Diesel Maintenance**

Green. The inspectors identified a Green non-cited violation of Technical Specification 6.8.1 for Exelon's failure to follow MA-MA-716-009, "Preventive Maintenance Work Order Process." Specifically, Exelon closed work order R2120325 without completing the necessary work and did not take action to evaluate the acceptability of this action, contrary to MA-MA-716-009 requirements. Exelon entered this issue into their corrective action program as IRs 1085811 and 1088269 to evaluate the corrective actions needed to address this issue.

This finding is more than minor because it affects the equipment performance attribute of the mitigating systems cornerstone and affects the cornerstone objective of ensuring the availability, reliability, and dependability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the fire diesel is the credited backup source of makeup water to the isolation condensers and the failure to perform scheduled preventive maintenance challenges the availability and reliability of the diesel.

This finding affects the fire protection defense-in-depth strategies involving fire suppression and screens to Green using IMC 0609, Appendix F, "Fire Protection Significance Determination Process." Because of the fire diesel function as an isolation condenser makeup source, the inspectors reviewed the Mitigating Systems Cornerstone as well and found it also screened to Green because the finding is not a design or qualification deficiency confirmed not to result in loss of operability, does not represent a loss of system safety function, does not represent the actual loss of safety function of a single train for greater than its allowed outage time, does not represent an actual loss of safety function of one or more non-technical specification trains of equipment designated as risk significant per 10 CFR 50.65 for greater than 24 hours, and does not screen as potentially risk significant due to seismic, flooding, or severe weather initiating event. This finding has a cross-cutting aspect in the area of human performance because Exelon personnel did not follow procedures. Specifically, when Exelon did not follow or refer to procedure MA-MA-716-009, "Preventive Maintenance Work Order Process," they did not develop an evaluation to consider the impacts of omitting portions of the work package for the two-year fire diesel preventive maintenance [H.4(b)] [Section 40A2.1.c.(2)]

Inspection Report# : [2010007](#) ([pdf](#))

**G****Significance:** Jul 02, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

**Inadequate Corrective Actions Associated With the Reactor Building to Torus Vacuum Breaker Trip Valve Failures**

Green. The inspectors identified a finding of very low safety significance (Green) involving a non-cited violation of 10 CFR 50 Appendix B, Criterion XVI, "Corrective Action," for Exelon's failure to promptly identify and correct a condition adverse to quality associated with the January 2009 failure of the reactor building to torus vacuum breaker system. Specifically, Exelon did not promptly identify and correct an inadequate instrument air flow capacity condition associated with the reactor building to torus vacuum breaker trip valve. Due to the inadequate corrective actions, the reactor building to torus vacuum breaker system experienced a subsequent failure in April 2009. Exelon entered this issue into their corrective action program as I R 1088325 to evaluate the corrective actions needed to address this issue.

The finding was determined to be more than minor because the performance deficiency was associated with the containment attribute of the barrier integrity cornerstone and adversely impacted the cornerstone objective of providing reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. The inspectors evaluated the finding using IMC 0609, "Significance Determination Process," Attachment 0609.04, "Phase 1 - Initial Screening and Characterization of Findings," Table 4a, for the Barrier Integrity Cornerstone. Specifically, since all four containment barrier screening questions were answered "no," the finding was determined to be of very low safety significance (Green). In addition, the failure did not represent an actual open pathway in the physical integrity of the reactor containment. This finding has a cross-cutting aspect in the area of problem identification and resolution because Exelon failed to thoroughly evaluate the condition adverse to quality and appropriately address the cause.

[P.1.(c)] [Section 40A2.1.c.(1)]

Inspection Report# : [2010007](#) (pdf)**G****Significance:** Apr 02, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

**Adjustments to Maintenance Rule System Performance Criteria not made after Biannual Evaluation**

The inspectors identified a Green non-cited violation (NCV) of 10 CFR 50.65(a)(3), requirements for monitoring the effectiveness of maintenance at nuclear power plants (maintenance rule), because Exelon did not make adjustments to established performance and condition monitoring goals to ensure that unavailability and reliability of structures, systems and components (SSC) were appropriately balanced. Specifically, Exelon did not ensure that corrective actions identified in a 2006-2007 (a)(3) evaluation to update performance criteria sheets for maintenance rule systems were adequately implemented. Exelon entered this issue into their corrective action system as IR 1053237.

This finding is not similar to any of the IMC 0612 Appendix E minor examples, but is more than minor because if left uncorrected it would have the potential to lead to a more significant safety concern. Specifically, the failure to implement revised performance criteria could prevent the screening of safety significant systems that have exceeded their performance criteria through a maintenance rule expert panel and prevent Exelon from monitoring degraded components against established goals in a manner sufficient to provide reasonable assurance that such SSCs are capable of fulfilling their intended functions. This finding is not suitable for evaluation using the Significance Determination Process (SDP) because the performance deficiency did not cause the degraded equipment performance. Findings for which the SDP does not apply may be Green or

assigned a severity level after NRC management review. Per the guidance provided in NRC inspection procedure 71111.12, this issue is considered to be a Category II finding and thus, per NRC management review, is considered to be Green. This finding has a cross-cutting aspect in the area of problem identification and resolution (P.3(c)). Specifically, Exelon did not ensure that actions identified in the 2006-2007 (a)(3) assessment to update performance criteria sheets for maintenance rule systems were completed and implemented. (Section 1 R12)

Inspection Report# : [2010002](#) (pdf)

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**Significance:** Apr 02, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

### **Failure To Declare The Rod Worth Minimizer Inoperable At The Time Operability Criteria Was Not Met And Enter The Correct Technical Specification Action Statement**

An NRC identified NCV of Technical Specification (TS) 6.8.1, Procedures and Programs, was identified when Exelon did not declare the rod worth minimizer (RWM) inoperable prior to completing the withdrawal of the twelfth rod during a reactor startup on July 15, 2009. During the startup, the RWM exhibited difficulty following the movement of control rods, had difficulty following which control rod was selected, and generated a total of 3 rod blocks even though the physical configuration of the control rod positions was in accordance with the control rod withdrawal sequence. Although operations personnel were aware of these malfunctions of the RWM, they believed that the rod blocks being generated were conservative and did not consider the operability criteria contained in the RWM operating procedure. At the beginning of the withdrawal of the twelfth control rod, the RWM generated an improper rod block and began tracking a control rod that had not been selected or withdrawn. The operators were able to clear the rod block and fully withdraw the rod. The operators declared the RWM inoperable based upon the improper rod block that occurred at the beginning of the withdrawal of the twelfth rod, but entered the TS action statement based upon the time that the operability decision was made, which was after the rod was fully withdrawn. Because of this conclusion, the wrong TS action statement was entered and all actions and limitations associated with the correct TS were not completed. This issue has been entered into Exelon's corrective action program.

The finding was more than minor because it was similar to example 2.g of IMC 0612 Appendix E. Additionally, the finding was more than minor because it was associated with the Design Control attribute of the Barrier Integrity cornerstone objective to provide reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. In accordance with IMC 0609.04 (Table 4a), "Phase 1 - Initial Screening and Characterization of Findings," the finding was determined to be of very low safety significance (Green) because the finding affected the barrier integrity cornerstone and was a fuel barrier issue. The performance deficiency had a cross-cutting aspect in the area of human performance, decision making [H.1(a)]. because Exelon did not make a safety significant decision using a systematic process when faced with uncertain or unexpected plant conditions. Specifically, Exelon did not consider the operability criteria in procedure 409, "Operation of the Rod Worth Minimizer," when faced with a malfunctioning RWM during the reactor startup on July 15, 2009. (Section 1R15)

Inspection Report# : [2010002](#) (pdf)

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**Significance:** Dec 31, 2009

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

### **Untimely Corrective Action for the 'B' Spent Fuel Pool Cooling Pump**

A self-revealing non-cited violation (NCV) was identified of 10CFR50 Appendix B, Criterion XVI, "Corrective Action" was identified when Exelon did not take timely corrective action to address an identified degrading trend in the performance on the B spent fuel pool cooling pump. Exelon repaired the pump by replacing the impeller and performed a satisfactory in-service test (IST) on December 8, and entered the issue into the corrective action program.

The NCV was not similar to the examples cited in IMC 0612 Appendix E, but the inspectors determined it was more than minor because it was associated with the SSC performance attribute of the barrier integrity cornerstone objective to provide reasonable assurance that the physical design barriers protect the public from radionuclide releases caused by accidents or events by maintaining the functionality of the spent fuel pool cooling system. The inspectors determined this issue was of very low safety significance (Green) because the issue did not result in a loss of cooling to the spent fuel pool where operator or equipment failures could preclude restoration of cooling prior to pool boiling, did not result from fuel handling errors that caused damage to fuel clad integrity or a dropped assembly, and did not result in a loss of spent fuel pool inventory greater than ten percent of the fuel pool volume. The performance deficiency had a cross-cutting aspect in the area of human performance, work control [H.3(b)] because Exelon did not effectively coordinate work activities by implementing actions to communicate, coordinate and cooperate with each other during activities in which interdepartmental coordination is necessary to assure plant and human performance.  
Inspection Report# : [2009005 \(pdf\)](#)

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## Emergency Preparedness

**Significance:** G Jul 02, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

### Failure to Provide Adequate Compensatory Actions for the RAGEMS Being Out Of Service

Green: The inspectors identified a Green non-cited violation (NCV) of 10 CFR 50.54(q), "Conditions of Licenses," because Exelon did not properly maintain the conditions of the Oyster Creek Emergency Plan. Specifically, Exelon did not implement timely compensatory actions for the Plan and its implementing procedures when the Oyster Creek main stack radioactive gaseous effluent monitoring system (RAGEMS) was discovered to have a faulted sample supply line. The licensee entered this issue into their corrective action program and implemented corrective actions, including revising site procedures to provide for an alternate sampling plan and the repair of the sample line.

The finding was more than minor because it affected the Emergency Response Organization Performance attribute of the EP Cornerstone to ensure that the licensee is capable of implementing adequate measures to protect the public health and safety in the event of a radiological emergency. In accordance with Inspection Manual Chapter (IMC) 0609, Appendix B, "Emergency Preparedness Significance Determination Process," the inspectors determined the finding to be of very low safety significance (Green), because other methods of performing the dose assessment function were functional while the RAGEMS was unavailable.

The performance deficiency had a cross-cutting aspect in the area of corrective action, because there were indications that the RAGEMS sample line had not been sufficiently repaired, yet Exelon did not implement compensatory actions in a timely manner to assure the RAGEMS dose assessment function was still available. Specifically, the RAGEMS was out of service for 12 days from the time of the sample line defect identification, yet an adequate alternate sampling plan was not in place until 8 days after that discovery [P.1(d)]. (Section 4OA2)

Inspection Report# : [2010003 \(pdf\)](#)

**Significance:** G Jul 02, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

### Failure To Notify the NRC within the time requirements of 10 CFR 50.72

Green: The NRC identified a Severity Level IV non-cited violation (NCV) of 10 CFR 50.72 when Exelon did not make the required initial notification within 8 hours of the occurrence of the condition. Specifically, on the morning of

April 7th, a maintenance technician found the stack radioactive gas effluent monitoring system (RAGEMS) sampling line disconnected, which rendered it inoperable and Exelon did not make the required report until 1535 on April 8. The licensee entered this issue into their corrective action program with an action to review this issue for lessons learned and to incorporate them into an ongoing apparent cause evaluation on technical human performance.

The finding was more than minor because it is similar to inspection manual chapter 0612, appendix E, example 2.d. The finding was determined to be subject to traditional enforcement because the NRC's ability to perform its regulatory function was potentially impacted by the licensee's failure to report the event within the eight hour time requirement of 10 CFR 50.72. The finding was determined to be a Severity Level IV violation in accordance with Section D of Supplement I of the NRC Enforcement Policy. The finding was not suitable for evaluation using the significance determination process, but has been reviewed by NRC management and is determined to be a finding of very low safety significance.

This finding has a cross-cutting aspect in the area of human performance, decision-making. Specifically, Exelon's delay in determining that the reported condition of the stack RAGEMS sampling line constituted a loss of monitoring capability did not demonstrate that the licensee uses conservative assumptions in decision making and adopts a requirement to demonstrate that the proposed action is safe in order to proceed rather than a requirement to demonstrate that it is unsafe in order to disapprove the action. [H.1(b)]. (Section 4OA3)

Inspection Report# : [2010003](#) (*pdf*)

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## **Occupational Radiation Safety**

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## **Public Radiation Safety**

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## **Physical Protection**

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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**

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