# Three Mile Island 1
# 1Q/2014 Plant Inspection Findings

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## Initiating Events

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## Mitigating Systems

**Significance:** G Mar 31, 2014
Identified By: NRC
Item Type: NCV NonCited Violation
**Failure to Perform a 10 CFR 50.59 Evaluation for the BWST Seismic Qualification**
Green/SL-IV. The inspectors identified a Severity Level IV (SL-IV), Non-Cited Violation of 10 CFR 50.59, "Changes, Tests, and Experiments," and an associated finding of very low safety significance (Green) for Exelon's failure to perform a 50.59 evaluation review to determine whether a license amendment was required to align the borated water storage tank (BWST) to non-seismic piping. Specifically, Exelon staff's 50.59 screening accepted the alignment of the seismically qualified BWST to a non-seismically qualified clean-up system. The inspectors determined the alignment would involve a change to the BWST
that adversely affects its Updated Final Safety Analysis Report chapter 5.1.1, "Classes of Structures and Systems for Seismic Design", described design function of being seismically qualified. Additionally, the inspectors determined that following the 50.59 review Exelon placed the line-up in service. The inspectors determined these two actions were performance deficiencies that were reasonably within Exelon's ability to foresee and prevent. Furthermore, the 50.59 screening credited unapproved operator manual actions
to ensure functionality of the BWST. Exelon documented this as issue report 1631468 and implemented interim corrective actions to isolate the BWST from the clean-up system until a permanent resolution is determined and implemented.

The inspectors determined the 50.59 violation regarding the failure to perform an evaluation was more than minor because the inspectors could not reasonably determine that the alignment would not have ultimately required NRC prior approval, because the BWST alignment was not in accordance with the current licensing basis and the evaluation credited the use of unapproved operator manual actions. The inspectors also determined that the performance deficiency of accepting and aligning the adverse clean-up line-up, challenging the BWST seismic qualification, was more than minor because it adversely affected 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 evaluated the finding using IMC 0609, Attachment 4, "Initial Characterization of Findings," and Appendix A, "The Significance Determination Process for Findings At-Power," and determined that this finding required a detailed risk evaluation. The detailed evaluation was performed which determined that the performance deficiency was a finding of very low safety significance (Green). Additionally, In accordance with Section 6.1.d.2 of the NRC Enforcement Policy, the 50.59 violation is categorized as a Severity Level IV.
This finding has a cross-cutting aspect in the area of Problem Identification and Resolution, Operating Experience, in that the station did not effectively evaluate and internalize relevant external operating experience (Information Notice (IN) 2012-01) regarding connections between safety-related seismic and non-seismic qualified piping and components (P.5) (Section 1R04)

Inspection Report# : 2014002 *(pdf)*

**Significance:** G Mar 31, 2014
Identified By: NRC
Item Type: NCV NonCited Violation
**Loss of Air Intake Tunnel Sump Pump Function due to Inadequate Work Execution**
Green. The inspectors identified a finding of very low safety significant (Green) for Exelon's failure to follow work order instructions in accordance with MA-AA-716-011, "Work Execution and Close Out," during planned maintenance activities on the air intake tunnel (AIT) deluge sump pump (SD-P-7). Specifically, in May 2013, a maintenance worker applied epoxy to the sump pump's float switch contrary to work order instructions. Inspectors identified that the float switch was fixed in the OFF position, rendering the pump unavailable, during a system walkdown in March 2014. Exelon documented this as issue report 1628577 and performed prompt corrective actions to remove the epoxy coating from the float switch. In addition, corrective actions were performed to replace the float ball that likely was submerged and filled with water as a result of the float switch being stuck. Exelon successfully post-maintenance tested the float switch and pump on March 6, 2014, and returned it to service.

The inspectors determined the performance deficiency associated with this finding involved Exelon's failure to follow work order instructions in accordance with MA-AA-716-011, "Work Execution and Close Out," during planned maintenance activities on SD-P-7 was more than minor because it was associated with mitigating systems cornerstone adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, in May 2013, a technician applied epoxy to SD-P-7's float switch, contrary to work order instructions, rendering the pump non-functional. The inspectors evaluated the finding using IMC 0609, Attachment 4, "Initial Characterization of Findings," and Appendix A, "The Significance Determination Process for Findings At-Power," Exhibit 4, "External Events Screening Questions," and determined, based on operator response to an air intake tunnel deluge alarm, this finding to be of very low safety significance (Green).

This finding has a cross-cutting aspect in the area of Human Performance because the worker did not follow work order instructions and incorrectly applied epoxy to the SD-P-7 float switch assembly, rendering the pump non-functional and unavailable (H.8). (Section 1R05)

Inspection Report# : 2014002 *(pdf)*

**Significance:** G Mar 31, 2014
Identified By: NRC
Item Type: NCV NonCited Violation
**Failure to Restore Station Blackout Diesel Generator Cooling Water Lineup following Maintenance and Testing Activities**
Green. A self-revealing non-cited violation (NCV) of 10 CFR 50.63, "Loss of All Alternating Current Power," was identified for Exelon's failure to properly restore the station blackout (SBO) diesel generator system following maintenance and testing activities, rendering the SBO diesel generator unable to be available in 10 minutes of and cope for 4 hours after a postulated SBO event. Specifically, during the restoration from SBO switchgear maintenance during the previous Fall 2013 refueling outage, operators failed to remove a blocking device (gag) from the SBO diesel generator fire service water cooling isolation valve (FS-V-646) as part of its restoration to an automatic, standby configuration. As a result the SBO diesel generator was not in the configuration required by 10 CFR 50.63 (c)(2), which describes acceptable capability standards for alternate AC power systems. Exelon entered this issue into their corrective action program as IR 1608625. Exelon restored the valve configuration and revised affected and related procedures.

The inspectors determined this performance deficiency in that Exelon failed to remove the blocking devise from FS-V-646 prior to restoring the SBO diesel to service was more than minor because it is associated with the mitigating

systems affecting the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, in the event of a station blackout, the SBO diesel generator was not able to be started and operated from the control room with no local operations required to allow the prompt restoration of electrical power to at least one vital bus as assumed in the TMI SBO analysis. The inspectors evaluated the finding using IMC 0609, Attachment 4, "Initial Characterization of Findings", and Appendix A, "The Significance Determination Process for Findings At-Power," and determined that this finding required a detailed risk evaluation because, with FS-V-646 gagged, the SBO diesel was not capable of performing its safety function. The detailed risk evaluation determined the finding to be of very low safety significance (Green).

This finding has a cross-cutting aspect in the area of Human Performance, Documentation, because Exelon's procedure for restoration from the maintenance and testing (OP-TM-731-510, Rev. 5) was not adequate to specify actions to return the cooling water isolation valve (FS-V-646) to its normal automatic condition [H.7]. (Section 1R22)

Inspection Report# : 2014002 *(pdf)*

**Significance:** G Dec 31, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
**Inadequate Material Storage in Reactor Building**
Green. The inspectors identified a Green non-cited violation of Technical Specification 6.8.1 for Exelon's failure to implement procedure requirements governing storage of equipment in Class 1 structures. Specifically, Exelon stored unsecured material, one (1) roll of plastic sheeting and three (3) plastic sheets, in the Reactor Building (RB) during power operations, contrary to Exelon Procedure 1015, "Equipment Storage Inside Class 1 Buildings." This resulted in unsecured material in a location that had the potential, during a large break loss of coolant accident, to be transported to and adversely impact the performance of the emergency core cooling system (ECCS) suction sump. Exelon documented the issue in their corrective action program under issue report (IR) 1577437 and took immediate corrective actions to remove the unsecured plastic from the RB.

This finding is more than minor because it is associated with the availability and reliability 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. Specifically, the unsecured plastic had the potential to impact the reliability and availability of the ECCS recirculation suction flow path, due to the potential increased debris loading. The inspectors evaluated the finding using Inspection Manual Chapter 0609, Attachment 4, "Initial Characterization of Findings," and Appendix A, "The Significance Determination Process for Findings At-Power," Exhibit 2, and determined this finding is very low safety significance (Green) because the degraded condition is a design deficiency that affects system operability, but did not represent an actual loss of function of a system; did not represent an actual loss of function of a single train or two separate trains for greater than its technical specification allowed outage time and did not represent an actual loss of function of one or more non-technical specification trains of equipment designated as high safety significant. The finding has a cross-cutting aspect in the area of Problem Identification and Resolution, Corrective Action Program, because Exelon did not take adequate corrective actions to address the cause of improperly staged material in the RB (IR 1577100), resulting in a subsequent recurrence of improper staging of additional material in the RB identified by the inspectors (IR 1577437). [P.1(d)]. (Section 1R20)

Inspection Report# : 2013005 *(pdf)*

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# Barrier Integrity

**Significance:** G Dec 31, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
**Failure to Perform Leak Rate Testing on Close Loop Piping**
Green. The inspectors identified a Green non-cited violation of 10 CFR 50, Appendix J, Primary Reactor Containment Leakage Testing for Water-Cooled Power Reactors, for Exelon's failure to establish an adequate program that leak tested components penetrating the primary containment pressure boundary. Specifically, Exelon failed to implement leak rate testing of the reactor building (RB) normal closed loop cooling piping to verify piping integrity to support its containment isolation function. As a result, on November 10, 2013, engineering personnel identified an inoperable containment isolation boundary due to a degraded RB closed cooling piping condition. Exelon documented this issue in issue report (IR) 1598590 and took corrective actions to revise the Appendix J test program and address the missed leak rate surveillance test.

This finding is more than minor because it is associated with the Barrier Performance attribute of the Barrier Integrity cornerstone and affected the cornerstone objective to provide reasonable assurance that physical barriers, as designed, protect the public from radionuclide releases caused by accidents or events. Specifically, Exelon failed to perform leak rate testing of the RB normal closed loop cooling piping and failed to identify the degraded piping condition that impacted the containment isolation function. In accordance with IMC 0609.04, "Initial Characterization of Findings," and Exhibit 3 of IMC 0609, Appendix A, "The Significance Determination Process for Findings At-Power," issued June 19, 2012, the inspectors determined that the finding did not represent an actual open pathway in the physical integrity of the reactor containment isolation system nor did it involve an actual reduction in function of hydrogen recombiners for the reactor containment therefore, the finding was of very low safety significance (Green). The finding was not assigned a cross-cutting aspect because the most significant causal factor of the finding was the failure to implement leak rate testing since 1991 and was not indicative of current plant performance. (Section 1R22)

Inspection Report# : 2013005 *(pdf)*

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## Emergency Preparedness

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## Occupational Radiation Safety

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## Public Radiation Safety

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## 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.

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# Miscellaneous

**Significance: N/A** Mar 31, 2009
Identified By: NRC
Item Type: AV Apparent Violation
**Apparent Violation for Exelon Plants - 1 (2009 Findings)**
For apparent violation #1:
Contrary to the above, on March 31, 2009 Exelon Generation Company, LLC (Exelon) provided incomplete and inaccurate information on the status of its decommissioning funding, as required by 10 CFR 50.75 when it submitted the decommissioning funding status report. Specifically, the March 31, 2009, decommissioning funding status (DFS) report contained inaccurate and incomplete information regarding Exelon's compliance with the requirements of 10 CFR 50.75. The report stated that the amount listed for each of the reactors was determined in accordance with 10 CFR 50.75(b) and the applicable formulas of 10 CFR 50.75(c). However, for each of the 23 reactors, the amount reported was a discounted value that was less than the minimum required amount specified by 10 CFR 50.75(b) and (c). The report was material to the NRC because Exelon under-reported its certified decommissioning amounts by approximately $4 billion, and the NRC staff evaluated the status of Exelon's decommissioning funds based on the inaccurate reports. After identifying the inaccurate information, the NRC required parent company guarantees before the staff could make its determination that there was reasonable assurance that funds will be available for the decommissioning process.
Inspection Report# : 2012012 *(pdf)*
Inspection Report# : 2013201 *(pdf)*

**Significance: N/A** Mar 31, 2009
Identified By: NRC
Item Type: AV Apparent Violation
**Apparent Violation for Exelon Plants - 2 (2009 Findings)**
For apparent violation #2:
Contrary to the above, on March 31, 2007, and March 31, 2005, Exelon Generation Company, LLC (Exelon) provided incomplete and inaccurate information on the status of its decommissioning funding, as required by 10 CFR 50.75 when it submitted the decommissioning funding status reports. Specifically, the March 31, 2007, and March 31, 2005, decommissioning funding status (DFS) reports contained inaccurate and incomplete information regarding Exelon's compliance with the requirements of 10 CFR 50.75. The reports stated that the amount listed for each of the reactors was determined in accordance with 10 CFR 50.75(b) and the applicable formulas of 10 CFR 50.75(c). However, in multiple instances, the amount reported was a discounted value that was less than the minimum required amount specified by 10 CFR 50.75(b) and (c). The reports were material to the NRC because Exelon under-reported its certified decommissioning amounts, and the NRC staff evaluated the status of Exelon's decommissioning funds based on the inaccurate reports. After identifying the inaccurate information, the NRC required parent company guarantees before the staff could make its determination that there was reasonable assurance that funds will be available for the decommissioning process.
Inspection Report# : 2012012 *(pdf)*
Inspection Report# : 2013201 *(pdf)*

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