

Nine Mile Point 2

4Q/2014 Plant Inspection Findings

Initiating Events

Significance: G Jun 30, 2014

Identified By: Self-Revealing

Item Type: FIN Finding

Failure to Identify Single-Point Vulnerabilities Results in a Manual Reactor Scram

A self-revealing Green Finding (FIN) was identified at Unit 2 against procedure CNG-AM-1.01-2000, "Scoping and Identification of Critical Components," Revision 00200. Specifically, Exelon Generation (Exelon) staff performed an inadequate AP-913 evaluation in 2006. This evaluation failed to identify that reactor recirculation pump switches S101A and S101B were single-point vulnerable components so mitigating strategies to ensure proper operation to minimize plant risk were not developed. As a result, on December 2, 2013, both reactor recirculation pumps failed to properly shift from fast to slow speed resulting in a loss of all recirculation flow through the core and requiring operators to insert a manual reactor scram in accordance with plant procedures. Exelon generated condition report (CR)-2013-009735, performed a root cause analysis, and developed corrective actions which included revising procedure N2-OP-29, "Reactor Recirculation System," Revision 01801, to direct operators to manually start the low frequency motor generator sets, implementing a preventive maintenance activity for these switches, and developing plans to replace the switches during the next refueling outage.

This finding is more than minor because it is associated with the equipment performance attribute of the Initiating Events cornerstone and adversely impacted the associated cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during the shut down as well as power operations. Additionally, the performance deficiency is similar to Example 4b of Inspection Manual Chapter (IMC), Appendix E, "Examples of Minor Violations," in that the error resulted in a plant trip. Specifically, the failure to identify switches S101A and S101B as single-point vulnerabilities and develop appropriate mitigating strategies resulted in the failure of the switches and a manual reactor scram on December 2, 2013. In accordance with IMC 0609.04, "Initial Characterization of Findings," and Exhibit 1 of IMC 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," the inspectors determined that this finding is of very low safety significance (Green); the performance deficiency did not cause both 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 (e.g.; loss of condenser, loss of feedwater). The inspectors did not assign a cross-cutting aspect to this finding because the performance deficiency was determined to have occurred in 2006, and the guidance in the current revision of CNG-AM-1.01-2000, Appendix A, was sufficient for Exelon's root cause team to determine the switches should have been screened in. Therefore, this finding is not indicative of current licensee performance and no cross-cutting issue was assigned.

Inspection Report# : [2014003](#) (*pdf*)

Significance: G Mar 31, 2014

Identified By: NRC

Item Type: NCV NonCited Violation

Invalid Low Reactor Water Level results in Unit 2 Automatic Reactor Scram

The inspectors documented a self-revealing Green non-cited violation of Technical Specification (TS) 5.4, "Procedures," for Constellation Energy Nuclear Group's, LLC (CENG's) failure to ensure proper communication of a

change in work scope prior to implementation. Specifically, on March 10, 2014, valve label replacements at Unit 2 commenced in a trip sensitive area while the plant was on-line, although the work was previously scheduled to be conducted when the reactor was shut down. This change in work scope was not properly reviewed and communicated to the supporting work group prior to implementation. As a result, a reactor scram occurred when an instrumentation and control technician inadvertently contacted an instrument rack located in a trip sensitive area while performing a valve label replacement. CENG generated condition report CR-2014-001963 to document the Unit 2 reactor scram due to the technician contacting the instrument line while cutting the valve label. Immediate corrective actions included developing site communications to enhance awareness of trip sensitive equipment and to provide additional flagging barriers to ensure trip sensitive components are not inadvertently contacted.

This finding is more than minor because it is associated with the human performance attribute of the Initiating Events cornerstone and affected the cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions during power operations. Specifically, CENG staff did not properly ensure that the scope change was properly reviewed and communicated to the supporting work group prior to implementation. This resulted in work being performed while Unit 2 was online and a subsequent automatic reactor scram when an instrument rack was inadvertently contacted. In accordance with Inspection Manual Chapter (IMC) 0609.04, "Initial Characterization of Findings," and Exhibit 1 of IMC 0609, Appendix A, "The Significance Determination Process for Findings At-Power," the inspectors determined that this finding is of very low safety significance (Green) because while the performance deficiency caused a reactor scram, it did not result in the loss of mitigation equipment relied upon to transition the plant from the onset of the trip to a stable shutdown condition. The finding has a cross-cutting aspect in the area of Human Performance, Conservative Bias, because CENG failed to use proper decision making-practices that emphasize prudent choices over those that are simply allowable.

Inspection Report# : [2014002](#) (pdf)

Mitigating Systems

Significance: N/A Dec 31, 2014

Identified By: Licensee

Item Type: AV Apparent Violation

[DRAFT] Failure to Make Timely Reports of Changes in Licensed Operator Medical Status Which Impacted Issuance of Initial and Renewal Licenses

During an internal audit, Exelon identified multiple examples of an Apparent Violation (AV) of 10 CFR 50.74 associated with the licensee's failure to notify the NRC within 30 days of changes to licensed operator medical status. During a follow-up inspection, the NRC identified an additional instance of this issue. The NRC also identified multiple examples of an AV of 10 CFR 50.9 for providing information to the NRC in applications for new and/or renewed reactor operator licenses that was not complete and accurate in all material respects and of 10 CFR 55.33(a) (1) for failing to restrict seven operators with disqualifying medical conditions from performing licensed duties without appropriate license conditions.

Compliance was restored on September 25, 2014, when the licensee submitted a letter to the NRC with medical examination Form 396s indicating the new restrictions for the affected operators on shift, and on November 5, 2014, when the licensee requested termination of the license for another operator. This issue was entered into the licensee's corrective action program.

The inspectors determined that Nine Mile Point's failures to report changes in licensed operators' permanent medical conditions to the NRC, to restrict operators with disqualifying medical conditions from performing licensed activities, and to provide complete and accurate information to the NRC was a performance deficiency that was within the licensee's ability to foresee and correct and should have been prevented. The inspectors determined that traditional

enforcement applies, as the issue impacted the NRC's ability to perform its regulatory function. Namely, the NRC relies upon the licensee to ensure all new license applicants and licensed operators meet the medical conditions of their licenses. If, during the term of the individual operator license, the operator develops a permanent physical or mental disability that causes the operator to fail to meet the requirements of 10 CFR 55.21, the facility licensee shall notify the Commission, within 30 days of learning of the diagnosis, in accordance with 10 CFR 50.74(c). If the general medical condition of an operator does not meet the minimum standards, the operator must be removed from the conduct of licensed activities, unless the NRC has authorized the operator to continue to perform such functions. Additionally, the NRC issued initial and/or renewal licenses to seven operators based on information that was not complete and accurate in all material aspects. The performance deficiency was screened against the ROP per the guidance of IMC 0612, Appendix B, "Issue Screening." No associated ROP finding was identified and no cross-cutting aspect was assigned. This issue constitutes apparent violations in accordance with the NRC's Enforcement Policy, and its final significance will be dispositioned in separate future correspondence.

Inspection Report# : [2014005](#) (*pdf*)

Significance: N/A Dec 31, 2014

Identified By: NRC

Item Type: AV Apparent Violation

[DRAFT] Incomplete and Inaccurate Medical Information Provided by the Licensee Which Impacted Issuance of Initial and Renewal Licenses

During an internal audit, Exelon identified multiple examples of an Apparent Violation (AV) of 10 CFR 50.74 associated with the licensee's failure to notify the NRC within 30 days of changes to licensed operator medical status. During a follow-up inspection, the NRC identified an additional instance of this issue. The NRC also identified multiple examples of an AV of 10 CFR 50.9 for providing information to the NRC in applications for new and/or renewed reactor operator licenses that was not complete and accurate in all material respects and of 10 CFR 55.33(a) (1) for failing to restrict seven operators with disqualifying medical conditions from performing licensed duties without appropriate license conditions.

Compliance was restored on September 25, 2014, when the licensee submitted a letter to the NRC with medical examination Form 396s indicating the new restrictions for the affected operators on shift, and on November 5, 2014, when the licensee requested termination of the license for another operator. This issue was entered into the licensee's corrective action program.

The inspectors determined that Nine Mile Point's failures to report changes in licensed operators' permanent medical conditions to the NRC, to restrict operators with disqualifying medical conditions from performing licensed activities, and to provide complete and accurate information to the NRC was a performance deficiency that was within the licensee's ability to foresee and correct and should have been prevented. The inspectors determined that traditional enforcement applies, as the issue impacted the NRC's ability to perform its regulatory function. Namely, the NRC relies upon the licensee to ensure all new license applicants and licensed operators meet the medical conditions of their licenses. If, during the term of the individual operator license, the operator develops a permanent physical or mental disability that causes the operator to fail to meet the requirements of 10 CFR 55.21, the facility licensee shall notify the Commission, within 30 days of learning of the diagnosis, in accordance with 10 CFR 50.74(c). If the general medical condition of an operator does not meet the minimum standards, the operator must be removed from the conduct of licensed activities, unless the NRC has authorized the operator to continue to perform such functions. Additionally, the NRC issued initial and/or renewal licenses to seven operators based on information that was not complete and accurate in all material aspects. The performance deficiency was screened against the ROP per the guidance of IMC 0612, Appendix B, "Issue Screening." No associated ROP finding was identified and no crosscutting aspect was assigned. This issue constitutes apparent violations in accordance with the NRC's Enforcement Policy, and its final significance will be dispositioned in separate future correspondence.

Inspection Report# : [2014005](#) (*pdf*)

Significance:  Jun 30, 2014

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Surveillance Testing of Reactor Core Isolation Cooling during 165 psig Reactor Pressure Test for Surveillance Requirement 3.5.3.4

The inspectors identified a non-cited violation (NCV) of Title 10 of the Code of Federal Regulations Part 50, Appendix B, Criterion XI, "Test Control," due to Exelon Generation (Exelon) staff's procedures for meeting the Unit 2 Technical Specification (TS) Surveillance Requirement (SR) 3.5.3.4 being inadequate since they did not test all required functions over the pressure range they were required since the start of plant operation. Specifically, inspectors identified that reactor core isolation cooling (RCIC) was being started with the flow controller in manual during the 165 pounds per square inch gauge (psig) reactor pressure test as opposed to automatic, which is its normal lineup. As a result, the RCIC system has not been adequately tested to develop flow at low reactor pressures to ensure that the surveillance had been met and that the RCIC system met its design basis.

This finding is more than minor because it affected the equipment performance attribute of the Mitigating Systems cornerstone and its objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. This finding is also similar to Example 3.d in Inspection Manual Chapter (IMC) 0612, "Power Reactor Inspection Reports," Appendix E, "Examples of Minor Issues." Specifically, the inadequate testing of the RCIC system with reactor pressure less than or equal to 165 psig has led to uncertainty in the reliability and capability of the system to perform at low reactor pressures.

In accordance with IMC 0609.04, "Initial Characterization of Findings," and Exhibit 2 of IMC 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," the inspectors determined that this finding is of very low safety significance (Green) because the deficiency affects only the design or qualification of a mitigating structure, system, or component, and the design or qualification issue is not currently impacting its operability.

The inspectors did not assign a cross-cutting aspect to this finding because the performance deficiency is not indicative of present performance because Exelon's incorrect interpretation for conducting TS SR 3.5.3.4 did not occur within the last 3 years.

Inspection Report# : [2014003](#) (*pdf*)

Barrier Integrity

Significance:  Sep 30, 2014

Identified By: NRC

Item Type: FIN Finding

Loss of Secondary Containment due to Loss of Auxiliary Boiler System

The inspectors identified a Green finding (FIN) of CNG-PR-1.01-1005, "Control of Technical Procedure Format and Content," Revision 00500, because Exelon Generation Company, LLC (Exelon) provided Unit 2 operators with an inadequate auxiliary boiler system operating procedure. Specifically, N2-OP-48, "Auxiliary Boiler System," Revision 01100.00, did not provide operators adequate detail to properly establish chemistry requirements for water conductivity of the auxiliary boiler system. On March 23, 2014, when Unit 2 experienced a trip of the auxiliary boiler system due to inadequate water conductivity, operators became challenged with system restoration which caused an unplanned loss of secondary containment and entry into Technical Specification (TS) 3.6.4.1, "Secondary Containment." Exelon generated condition report CR-2014-002281 regarding this issue. Immediate corrective actions included updating chemistry requirements associated with auxiliary boiler procedures, implementing new preventive

maintenance strategies for significant components associated with the auxiliary boilers, and implementing new performance monitoring plans.

This finding is more than minor because it affected the procedure quality attribute of the Barrier Integrity cornerstone and affected the cornerstone objective to provide reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. Specifically, over the past 2 years, the auxiliary boilers have experienced trips as a result of insufficient procedural guidance. On March 23, 2014, the inadequate procedural guidance resulted in a trip and subsequent loss of reactor building (RB) differential pressure (DP). This caused an unplanned entry into the secondary containment emergency operating procedure and an unplanned entry into TS 3.6.4.1, which presented unnecessary challenges and distractions to operators during a planned down-power. In accordance with Inspection Manual Chapter (IMC) 0609.04, "Initial Characterization of Findings," the inspectors used IMC 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," because secondary containment was declared inoperable following a loss of building heating. Using Appendix A, Exhibit 3, "Barrier Integrity Screening Questions," Section C, "Control Room, Auxiliary, Reactor, or Spent Fuel Pool Building," the inspectors determined that this finding is of very low safety significance (Green) because although the performance deficiency resulted in a trip of the auxiliary boiler system and a loss of secondary containment, the RB DP was restored to greater than 0.25 inches of water, within the allowable limiting condition for operation time, and did not result in a failure of the ability for secondary containment to maintain isolation or impact the ability for standby gas treatment system to maintain secondary containment. This finding has a cross-cutting aspect in the area of Human Performance, Resources, because Exelon did not ensure personnel, equipment, procedures, and other resources were available and adequate to support nuclear safety. Specifically, the inadequate management oversight of the auxiliary boilers resulted in numerous failures of the auxiliary boilers due to inadequate knowledge transfer, inaccurate classifications of maintenance rule functional failures for the system, inadequate procedures for boiler operation, and inadequate procedures for the prompt restoration of secondary containment when the auxiliary boiler system is not available [H.1]

Inspection Report# : [2014004](#) (*pdf*)

Significance:  Jun 30, 2014

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

Loss of Spent Fuel Cooling Pump due to Inadequate Procedures

A self-revealing non-cited violation of Technical Specification 5.4.1, "Procedures," was identified at Unit 2 for Exelon Generation's (Exelon's) failure to provide procedures to override valve 2SFC*AOV154, filters inlet isolation valve, prior to loss of offsite power testing. Specifically, procedures N2-OSP-EGS-R004, "Operating Cycle Diesel Generator Simulated Loss of Offsite Power With ECCS Division I & II," Revision 01200, and N2-VLU-01, "Valve Lineup and Valve Operations," Revision 00001, did not contain adequate guidance to differentiate between overriding the valve (open position) and repositioning the valve to its non-failure position (closed position). As a result, on March 28, 2014, while implementing N2-OSP-EGS-R004, the spent fuel cooling pump 'A' tripped off and had to be restored. Exelon entered the lost of SFP cooling into the corrective action program as condition report (CR)-2014-002507. Corrective actions included coaching the individuals involved and reinforcing Exelon's expectations regarding what information should be discussed during pre-job briefs.

This finding is more than minor because it is associated with the configuration control attribute of the Barrier Integrity cornerstone and affected the cornerstone objective to provide reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. Specifically, if N2-OSP-EGS-R004 and Figure 3, "Operation of Bettis Actuators," of N2-VLU-01 are not revised, there is the potential for plant operators to incorrectly assume that Section 3.0 of N2-VLU-01 Figure 3 is the valve lineup required by N2-OSP-EGS-R004, closing 2SFC*AOV154, and causing a subsequent pump trip where the loss of cooling may have more significant consequence leading to an increase in the temperature of the spent fuel cooling pump. In accordance with Inspection

Manual Chapter (IMC) 0609.04, "Initial Characterization of Findings," the inspectors used IMC 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," because the SFP was still isolated from the reactor core at the time of the finding. Using Appendix A, Exhibit 3, "Barrier Integrity Screening Questions," Section D, "Spent Fuel Pool (SFP)," the inspectors determined that this finding is of very low safety significance (Green) because although the performance deficiency adversely affected decay heat removal capabilities from the SFP, the pool temperature did not exceed the maximum analyzed temperature limit specified in the site-specific licensing basis, the performance deficiency did not involve a fuel handling error, did not affect the SFP neutron absorber, and did not result in a loss of SFP water inventory. This finding has a cross-cutting aspect in the area of Human Performance, Challenge the Unknown, because Exelon did not ensure that individuals stopped in the face of uncertain conditions. Specifically, after recognizing that N2-VLU-01 Figure 3 contained multiple sections that were not clearly labeled, plant operators did not stop and consult the senior reactor operator but continued on with an erroneous assumption as to which section to use (H.11).

Inspection Report# : [2014003](#) (pdf)

Emergency Preparedness

Occupational Radiation Safety

Significance:  Sep 30, 2010

Identified By: Self-Revealing

Item Type: FIN Finding

Failure to Maintain Radiation Exposure ALARA During RHR System Modification

A self-revealing finding of very low safety significance was identified due to Nine Mile Point Nuclear Station (NMPNS) having unplanned, unintended occupational collective dose resulting from deficiencies in "as low as is reasonably achievable" (ALARA) planning and work control while performing the removal of steam condensing mode piping and components associated with the Unit 2 residual heat removal (RHR) system. Specifically, NMPNS failed to properly plan and coordinate outage work, and failed to perform welding activities correctly. This resulted in expansion of the collective exposure for this work from 8.557 person-rem to 17.968 person-rem. NMPNS entered this issue into their corrective action program (CAP) as condition report (CR) 2010-8443.

The finding was more than minor because it was associated with the program and process attribute of the Occupational Radiation Safety cornerstone and affected the cornerstone objective to ensure the adequate protection of the worker health and safety from exposure to radiation from radioactive material during routine civilian nuclear reactor operation. Additionally, the finding was similar to example 6.i in Appendix E of Inspection Manual Chapter (IMC) 0612, in that it resulted in collective exposure of greater than 5 person-rem and exceeded the outage goal by greater than 50 percent. The finding was evaluated in accordance with IMC 0609, Appendix C, "Occupational Radiation Safety Significance Determination Process," and was determined to be of very low safety significance because NMPNS's current three year rolling average collective dose is 144.781 person-rem, less than 240 person-rem per unit. The finding had a cross-cutting aspect in the area of human

performance, work control, in that the outage plan did not adequately incorporate actions to address the impact of work on different job activities.

Inspection Report# : [2010004](#) (*pdf*)

Significance:  Sep 30, 2010

Identified By: Self-Revealing

Item Type: FIN Finding

Failure to Maintain Radiation Exposure ALARA During Refueling Floor Activities

A self-revealing finding of very low safety significance was identified due to Nine Mile Point Nuclear Station (NMPNS) having unplanned, unintended occupational collective dose resulting from deficiencies in "as low as is reasonably achievable" (ALARA) planning and work control while performing refueling floor activities at Unit 2. Specifically, the failure to have cleaned up a crud burst that had occurred late in the previous refueling outage, the decision to flood up the refueling cavity while refueling water activity remained four times higher than planned, incorrect calculations during reactor vessel (RV) head stud tensioning that resulted in having to remove the RV head insulation package and re-tension the RV head, and the inability to control work crew size on the refueling floor, resulted in expansion of the collective exposure for this work from 19.810 person-rem to 38.222 person-rem. NMPNS entered this issue into their corrective action program (CAP) as condition report (CR) 2010-8444.

The finding was more than minor because it was associated with the program and process attribute of the Occupational Radiation Safety cornerstone and affected the cornerstone objective to ensure the adequate protection of the worker health and safety from exposure to radiation from radioactive material during routine civilian nuclear reactor operation. Additionally, the finding was similar to example 6.i in Appendix E of Inspection Manual Chapter (IMC) 0612, in that it resulted in collective exposure of greater than 5 person-rem and exceeded the outage goal by greater than 50 percent. The finding was evaluated in accordance with IMC 0609, Appendix C, "Occupational Radiation Safety Significance Determination Process," and was determined to be of very low safety significance because NMPNS's current three year rolling average collective dose is 144.781 person-rem, less than 240 person-rem per unit. The finding had a cross-cutting aspect in the area of human performance, work control, in that the job site conditions which impacted human performance were not adequately incorporated into the outage plan.

Inspection Report# : [2010004](#) (*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

Significance:  Dec 31, 2014

Identified By: NRC

Item Type: NCV NonCited Violation

[DRAFT] Missed Surveillance Test of Alternate Decay Heat Removal Secondary Containment Isolation Valves

[DRAFT] The ADH removal system is a non-safety-related system used to remove decay heat from the spent fuel pool (SFP) and the reactor core during shutdown conditions. It consists of two loops—a primary loop that circulates hot water from the SFP to a heat exchanger (HX), and a secondary loop that transfers the heat from the HX to a natural draft cooling tower. Although the ADH removal system is not safety related, a section of the ADH removal system which penetrates the reactor building (RB) wall (secondary containment boundary) is safety related and is subject to leak rate testing to ensure the requirements of TS 3.4.6.1, “Secondary Containment,” are maintained. This section consists of two separate pipes that contain two safety-related check valves in series 2ADH*V21A, 2ADH*V21B, 2ADH*V22A, and 2ADH*V22B. Secondary containment integrity can be verified by leak testing the check valves or repositioning spectacle flanges that are installed in each of the lines to the no flow position, which provides full isolation of the secondary containment to the atmosphere.

During an inspection of the system in the plant on October 28, 2014, the inspectors identified that the spectacle flanges for each line were not repositioned to the no-flow position. In response to the inspector’s observation, Exelon reviewed previous surveillance tests performed under N2-OSP-GTS-R001 and determined that tests performed in 2012 and 2014 were not implemented correctly. Specifically when operators performed section 8.2.1 of procedure N2-OSP-GTS-R001, they marked a check box that stated the flanges were repositioned to the no flow condition when, in fact, they had not been moved. As a result, operators should have conducted a seat leak check on valves 2ADH*V21A, 2ADH*V21B, 2ADH*V22A, and 2ADH*V22B to ensure the secondary leakage requirements of TS 3.4.6.1 were maintained. Exelon identified the last successfully performed secondary containment integrity test was performed in 2010, which verified the ADH isolation check valves were leak-tight without the spectacle flanges rotated to the no flow condition.

Exelon immediately entered this issue into their CAP as IR 2403311. Exelon entered TS Surveillance Requirement (SR) 3.0.3, which is used when a licensee discovers that a surveillance test requirement has not been performed. As required by the TS, Exelon completed a risk evaluation of the missed surveillance and determined large early release frequency remained low without ADH secondary containment isolation. Exelon also performed extent-of-condition inspections for other systems which may not have proper alignment to ensure they are meeting TS requirements. No other valve lineup issues were discovered. On December 4, Exelon rotated the spectacle flanges to the no flow isolation position to ensure secondary containment integrity was maintained.

Inspection Report# : [2014005](#) (*pdf*)

Last modified : February 26, 2015