



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

REGION I
2100 RENAISSANCE BLVD., SUITE 100
KING OF PRUSSIA, PA 19406-2713

May 6, 2015

Mr. Peter Orphanos
Site Vice President
Nine Mile Point Nuclear Station, LLC
Exelon Generation Company, LLC
P.O. Box 63
Lycoming, NY 13093

SUBJECT: NINE MILE POINT NUCLEAR STATION - NRC INTEGRATED INSPECTION
REPORT 05000220/2015001 AND 05000410/2015001

Dear Mr. Orphanos:

On March 31, 2015, the United States Nuclear Regulatory Commission (NRC) completed an inspection at your Nine Mile Point Nuclear Station, LLC (NMPNS), Units 1 and 2. The enclosed inspection report documents the inspection results, which were discussed on April 16, 2015, with you and other members of your staff.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

This report documents two findings of very low safety significance (Green), one NRC-identified and one self-revealing. One of these findings was determined to involve a violation of NRC requirements. However, because of the very low safety significance, and because it was entered into your corrective action program, the NRC is treating the finding as a non-cited violation, consistent with Section 2.3.2.a of the NRC Enforcement Policy. If you contest the non-cited violation in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the United States Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region I; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspectors at NMPNS. In addition, if you disagree with the cross-cutting aspect assigned to any finding in this report, or a finding not associated with a regulatory requirement, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region I, and the NRC Resident Inspectors at NMPNS.

In accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) 2.390 of the NRCs "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC's Public Document Room or from the Publicly Available Records component of the NRC's Agencywide Documents Access and Management System (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

/RA/

Daniel L. Schroeder, Chief
Reactor Projects Branch 1
Division of Reactor Projects

Docket Nos. 50-220 and 50-410
License Nos. DPR-63 and NPF-69

Enclosure: Inspection Report 05000220/2015001 and 05000410/2015001
w/Attachment: Supplementary Information

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P. Orphanos

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D. Dorman, RA
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H. Nieh, DRP
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D. Schroeder, DRP

S. McCarver, DRP (Actg)
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U.S. NUCLEAR REGULATORY COMMISSION**REGION I**

Docket Nos. 50-220 and 50-410

License Nos. DPR-63 and NPF-69

Report Nos. 05000220/2015001 and 05000410/2015001

Licensee: Exelon Generation Company, LLC (Exelon)

Facility: Nine Mile Point Nuclear Station, LLC
Units 1 and Unit 2

Location: Oswego, New York

Dates: January 1, 2015, through March 31, 2015

Inspectors: K. Kolaczyk, Senior Resident Inspector
E. Miller, Resident Inspector
G. Stock, Resident Inspector
H. Gray, Senior Reactor Inspector
A. Rosebrook, Senior Project Engineer

Approved by: Daniel L. Schroeder, Chief
Reactor Projects Branch 1
Division of Reactor Projects

Enclosure

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SUMMARY

IR 05000220/2015001, 05000410/2015001; 01/01/2015 – 03/31/2015; Nine Mile Point Nuclear Station (NMPNS), Units 1 and 2; Follow-Up of Events and Notices of Enforcement Discretion.

This report covered a three-month period of inspection by resident inspectors and announced inspections performed by regional inspectors. The inspectors identified two Green findings, one of which was a non-cited violation (NCV). The significance of most findings is indicated by their color (i.e., greater than Green, or Green, White, Yellow, Red) and determined using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process (SDP)," dated June 2, 2011. Cross-cutting aspects are determined using IMC 0310, "Aspects Within the Cross-Cutting Areas," dated December 4, 2014. All violations of NRC requirements are dispositioned in accordance with the NRC's Enforcement Policy, dated February 4, 2015. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 5.

Cornerstone: Emergency Preparedness

Green. The inspectors documented a Green NRC-identified NCV of Title 10 of the *Code of Federal Regulations* (10 CFR) 50.54(q)(2) when Exelon failed to declare a Notice of Unusual Event Emergency Action Level (EAL) (HU3.1) when entry conditions were met. Specifically, on February 4, 2015, between 9:55 a.m. and 11:15 a.m., access to the Screenhouse was prohibited due to the release of a toxic gas that adversely affected normal plant operations following a spill of sodium bisulfite. Immediate corrective actions included Exelon entering the issue into their corrective action program (CAP) as issue report (IR) 02474142, formally evaluating the decision-making process used during the incident, and clarifying responsibilities for air sampling and the reporting of samples during incidents in the future.

This finding is more than minor because it was associated with the Emergency Preparedness cornerstone attribute of Emergency Response Organization Performance, and affected the cornerstone objective of ensuring that a licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. Specifically, between 9:55 a.m. and 11:15 a.m., access to the Unit 1 Screenhouse was prohibited due to the release of sodium bisulfite to the Screenhouse, affecting normal plant operations of the station.

This finding was evaluated using IMC 0609, Appendix B, "Emergency Preparedness SDP," Section 4, "Failure to Implement." The performance deficiency is associated with the emergency classification planning standard and is considered a Risk-Significant Planning Standard (RSPS). The failure to declare a Notice of Unusual Event when directed by the EAL Matrix is considered a lost or degraded RSPS in accordance with Section 4 of IMC 0609. Section 4.3.c and Attachment 1 of IMC 0609, Appendix B, provide the significance determination for a "Failure to Implement," and the performance deficiency was determined to be of very low safety significance (Green). The inspectors determined that the cross-cutting aspect that contributed most to the root cause is Human Performance, Challenge the Unknown: Individuals stop when faced with uncertain conditions. Risks are evaluated and managed before proceeding. Specifically, during the event, an unknown substance was released and at no point was atmospheric analysis used in the EAL declaration decision-making process. Furthermore, although spill response personnel were experiencing symptoms that were not consistent with exposure to a spill of sodium bisulfite, this unexpected condition was not fully

assessed by NMPNS for significance and reportability in accordance with procedures [H.11]. (Section 4OA3)

Cornerstone: Initiating Events

Green. The inspectors documented a self-revealing Green finding (FIN) for Exelon's failure to properly review a work package associated with the replacement of a reactor vessel level recorder as required by MA-AA-716-234, "FIN Team Process," Revision 8. Specifically, on February 18, 2015, control room operators manually scrambled Unit 2 when reactor vessel water level unexpectedly rose above desired limits during a planned replacement of Unit 2 reactor vessel level recorder 2ISC-LR1608. The unplanned rise in reactor water level occurred when daisy chained leads associated with the level recorder were lifted, which caused an interruption in the feedwater level control circuit.

The inspector's determined that Exelon's failure to ensure measures were in place to address the impact on reactor vessel level prior to level recorder replacement in accordance MA-AA-716-234 was a performance deficiency that was reasonably within Exelon's ability to foresee and correct and should have been prevented. 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, Exelon did not ensure measures were in place to prevent an adverse impact on the feedwater level control system during level recorder replacement. This resulted in a rapid rise in reactor water level and subsequent manual reactor scram.

In accordance with IMC 0609.04, "Initial Characterization of Findings," and Exhibit 1 of IMC 0609, Appendix A, "The Significance Determination Process for Findings At-Power," issued June 19, 2012, 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, Avoid Complacency, because Exelon failed to recognize and plan for the possibility of mistakes, latent issues, and inherent risk even while expecting successful outcomes. Specifically, Exelon did not ensure measures were in place to address the impact of the level recorder replacement on the feedwater level control system [H.12]. (Section 4OA3)

REPORT DETAILS

Summary of Plant Status

Unit 1 began the inspection period at 100 percent power. On January 3, reactor power was reduced to 75 percent power to perform a rod line adjustment and surveillance testing. Reactor power was restored to 100 percent on January 4. On January 24, operators reduced reactor power to 70 percent to perform a rod pattern adjustment and control rod settle testing. Operators returned Unit 1 to 100 percent power on January 25. On January 29, operators reduced power to 98 percent to perform a rod pattern adjustment. Operators returned Unit 1 to 100 percent the same day. On February 14, Unit 1 entered the coastdown period of reactor plant operation and as a result, reactor power slowly decreased. On March 15, with the plant at approximately 88 percent power, control room operators commenced a reactor plant shutdown to commence a planned refuel outage. The turbine was removed from the grid on March 16, and the plant reached cold shutdown later that day. The plant remained in cold shutdown for the remainder of the report period.

Unit 2 began the inspection period at 100 percent power. On February 18, operators inserted a manual reactor scram due to an unplanned rise in reactor water level caused by a false level signal during a reactor water level chart recorder replacement. On February 22, the reactor was restarted and operators began power ascension. The turbine was placed on the grid on February 23. Operators returned Unit 2 to 100 percent on February 25, 2015, and it remained at essentially full power for the rest of the report period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection (71111.01 – 2 samples)

.1 Readiness for Impending Adverse Weather Conditions

a. Inspection Scope

The inspectors reviewed Exelon's readiness for the onset of impending adverse weather conditions at Units 1 and 2 that involved unseasonably cold temperatures, high winds, and snow during the week of January 5. The review focused on the Unit 1 and 2 operation department's preparations and response to the adverse weather conditions. As part of the review, the inspectors walked down the Unit 1 control room with a particular focus on how well the control room heating and ventilation system was maintaining a positive atmospheric pressure in control room when compared to adjacent areas, and the Unit 2 standby gas treatment building. The inspectors verified that operator actions defined in Exelon's adverse weather procedure maintained the readiness of essential systems. The inspectors discussed readiness and staff availability for adverse weather response with operations and work control personnel. Documents reviewed for each section of this report are listed in the Attachment.

b. Findings

No findings were identified.

Enclosure

1R04 Equipment Alignment

.1 Partial System Walkdown (71111.04Q – 8 samples)

a. Inspection Scope

The inspectors performed partial walkdowns of the following systems:

- Unit 2, Standby Gas Treatment System on January 12, 2015
- Unit 1, High Pressure Coolant Injection System 11 on January 27, 2015
- Unit 2, Smoke Removal System on February 4, 2015
- Unit 1, Emergency Building Ventilation System on February 24, 2015
- Unit 2, Standby Liquid Control System “A” Train on March 4, 2015
- Unit 2, Automatic Depressurization Nitrogen Supply System on March 16, 2015
- Unit 1, Emergency Service Water System on March 16, 2015
- Unit 1, Station 345 kV System while on backfeed through the main transformer on March 30, 2015

The inspectors selected these systems based on their risk-significance relative to the reactor safety cornerstones at the time they were inspected. The inspectors reviewed applicable operating procedures, system diagrams, the Updated Final Safety Analysis Report (UFSAR), Technical Specifications (TSs), work orders (WOs), condition reports (CRs), IRs, and the impact of ongoing work activities on redundant trains of equipment in order to identify conditions that could have impacted system performance of its intended safety functions. The inspectors also performed field walkdowns of accessible portions of the systems to verify system components and support equipment were aligned correctly and were operable. The inspectors examined the material condition of the components and observed operating parameters of equipment to verify that there were no deficiencies. The inspectors also reviewed whether Exelon staff had properly identified equipment issues and entered them into the CAP for resolution with the appropriate significance characterization.

b. Findings

No findings were identified.

.2 Full System Walkdown (71111.04S – 2 samples)

a. Inspection Scope

On January 14, 2015, and March 03, 2015, the inspectors performed a complete system walkdown of accessible portions of the Unit 1 Emergency Cooling System and 125 volts direct current (VDC) System, respectively, to verify the existing equipment lineups were correct. The inspectors reviewed operating procedures, drawings, and the UFSAR to verify the system was aligned to perform its required safety functions. The inspectors performed field walkdowns of accessible portions of the systems to verify system components and support equipment were aligned correctly and operable. The inspectors examined the material condition of components and observed operating parameters of equipment to verify that there were no deficiencies. Additionally, the

inspectors reviewed a sample of related CRs, IRs, and WOs to ensure Exelon appropriately evaluated and resolved any deficiencies.

b. Findings

No findings were identified.

1R05 Fire Protection

Resident Inspector Quarterly Walkdowns (71111.05Q – 9 samples)

a. Inspection Scope

The inspectors conducted tours of the areas listed below to assess the material condition and operational status of fire protection features. The inspectors verified that Exelon controlled combustible materials and ignition sources in accordance with administrative procedures. The inspectors verified that fire protection and suppression equipment was available for use as specified in the area pre-fire plan, and passive fire barriers were maintained in good material condition. The inspectors also verified that station personnel implemented compensatory measures for out of service (OOS), degraded, or inoperable fire protection equipment, as applicable, in accordance with procedures.

- Unit 2, Remote Shutdown Room A (fire area (FA) 19) on January 5, 2015
- Unit 2, Remote Shutdown Room B (FA-17) on January 5, 2015
- Unit 1, Auxiliary Control Room (FA-11) on January 9, 2015
- Unit 2, Cable Chase West (FA-16) on January 26, 2015
- Unit 2, Cable Chase East (FA-18) on January 26, 2015
- Unit 2, Relay Room (FA-24) on January 26, 2015
- Unit 2, Reactor Building El. 328 (FA-34) on January 29, 2015
- Unit 1, Main Steam Isolation Valve (MSIV) Room and Main Steam Tunnel (FA-5A) on March 18, 2015
- Unit 1, Drywell (FA-3) on March 19, 2015

b. Findings

No findings were identified.

1R06 Flood Protection Measures (71111.06 – 1 sample)

Internal Flooding Review

a. Inspection Scope

The inspectors reviewed the UFSAR, the site flooding analysis, and plant procedures to assess susceptibilities involving internal flooding. The inspectors also reviewed the CAP to determine if Exelon identified and corrected flooding problems and whether operator actions for coping with flooding were adequate. The inspectors also focused on Unit 1 torus room and corner rooms March 31, 2015, to verify the adequacy of floor and water

penetration seals, watertight door seals, common drain lines and sumps, sump pumps, level alarms, and control circuits.

b. Findings

No findings were identified.

1R07 Heat Sink Performance (71111.07 – 3 samples)

a. Inspection Scope

The inspectors reviewed the heat exchangers (HXs) listed below to determine their readiness and availability to perform their safety functions. The inspectors reviewed the design basis for the component and verified NMPNS's commitments to NRC Generic Letter 89-13. The inspectors observed actual performance tests for the HXs and/or reviewed the results of previous inspections of the emergency diesel generator (EDG) jacket water HXs and similar HXs. The inspectors discussed the results of the most recent inspection with engineering staff and reviewed pictures of the as-found and as-left conditions. The inspectors verified that Exelon initiated appropriate corrective actions for identified deficiencies. The inspectors also verified that the number of tubes plugged within the HXs did not exceed the maximum amount allowed.

- Unit 2, Division I A & B Jacket Water HXs
- Unit 2, Division II A & B Jacket Water HXs
- Unit 2, Division III Jacket Water HX

b. Findings

No findings were identified.

1R08 In-service Inspection Activities (71111.08 – 1 sample)

a. Inspection Scope

From March 23 to 26, 2015, the inspectors conducted an inspection and review of Exelon's implementation of in-service inspection (ISI) activities for monitoring degradation of the reactor coolant system boundary, risk significant piping and components, HX tube integrity, and containment systems during the NMPNS Unit 1 refueling outage (RFO), RFO number 23. The sample selection was based on the inspection procedure objectives and risk priority of those pressure retaining components in systems where degradation would result in a significant increase in risk. The inspectors observed in-process non-destructive examinations (NDE), reviewed documentation, and interviewed NMPNS and contractor personnel to verify that the NDE activities performed during this first outage of the 2nd period of the fourth interval of the NMPNS Unit 1 ISI program were conducted in accordance with the requirements of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code Section XI.

Nondestructive Examination and Welding Activities (IMC Section 02.01)

The inspectors performed direct observations of NDE activities in progress, and reviewed work instruction packages and documentation of NDEs listed below:

Observation and Review Scope of ASME Code Required Examinations:

For liquid penetrant surface examinations of the recirculation system hanger lugs shown on drawing 32-13-H4A, reference for summary report 105300, the inspectors reviewed the penetrant test procedure PT-NDEP-PT-3.00, "Liquid Penetrant Examination," Revision 19, attended the pre-work briefing, and reviewed the key process parameters with the penetrant test examiners to confirm the adequacy of the examination process and the inspection procedure. The inspectors confirmed the examiners were qualified in accordance with the requirements of ASME Section XI.

For ultrasonic testing (UT) of components 32-WD-126, 33-WD-004, 39-WD-002, 44.1-WD-016, 44.1-WD-017, and 44.1-WD-018, the inspectors reviewed portions of the work package information and instructions, and the UT procedures; confirmed the qualifications of the UT examiner and reviewers; observed the preparations for performance of the examination by the UT examiner; and reviewed the examination results to confirm that the UT examinations were done per the ASME performance demonstration initiative and NRC requirements. The UT examination applications sampled included traditional and phased array UT; and both manual and automated methods on similar and dissimilar material combinations.

The inspectors sampled qualification certificates of the NDE examiners performing the nondestructive testing. The inspectors verified that examinations were performed in accordance with ASME Section XI procedures and the results were reviewed and evaluated by certified ASME Level III personnel.

The resident inspectors observed the condition of the interior drywell containment and the interior and exterior of the torus suppression pool structure surfaces as confirmatory observations of NMPNS inspections to satisfy the scope requirements of the aging management visual inspection procedures N1-MSP-GEN-025, "Suppression Chamber Interior Inspection," Revision 03, and NEP-CTG-INSP-01, "Service Level 1 Protective Coatings Inspections and Evaluations," Revision 00, and as applicable, the ASME Code Section XI, IWE.

Other Augmented or Industry Initiative Examinations

The inspectors reviewed the scope and method of feedwater heater and condenser tube examination by the eddy current testing method. The acceptance criteria and procedural requirements to track or plug tubes with identified tube degradation were reviewed.

Review of Previous Indications

The outage inspection scope included examination of two previously identified indication types from previous RFOs that were reexamined during RFO 23. The inspector reviewed the RFO 21 and RFO 22 UT indications in the four dryer support lug welds to reactor vessel wall and compared those indications to the RFO 23 UT indications updated per the phased array UT procedure ISWT-BWRVIP-AUT56, "Automated

Ultrasonic Phased Array Examination of RPV [reactor pressure vessel] Steam Dryer Support Lug Welds,” Revision 0, examination results.

The examination of the steam dryer included a comparison of a previously identified visual indication, reference CR-2011-001202, that was reevaluated prior to electro-discharge machining of crack stopper holes at the crack toes. Although no crack growth was noted, the modification was done as a precautionary measure.

Repair/Replacement Consisting of Welding Activities

In the area of welding, the inspectors reviewed the work package, weld planning, welding procedure and controls on welding, and observed the fit-up in place for the replacement of feedwater flow control valves FCV-29-137 and 141.

The radiographs and radiography report dated March 31, 2015, for welds 80-FW 442-C1, 443-C2, and 444-C2 were reviewed for consistency to the ASME Code Sections V and III and NDE-RT-1 “Radiographic Examination Testing Procedure,” Revision 12.

Identification and Resolution of Problems (IMC Section 02.05)

The inspectors verified that ISI-related problems and nonconforming conditions were properly identified, characterized, and evaluated for disposition within the CAP.

b. Findings

No findings were identified.

1R11 Licensed Operator Regualification Program and Licensed Operator Performance (71111.11Q – 4 samples)

.1 Quarterly Review of Licensed Operator Regualification Testing and Training (2 samples)

a. Inspection Scope

The inspectors observed:

- Unit 1, licensed operator simulator training scenario which included a control rod pump trip, electromagnetic relief valve actuation, seismic event, failure of power board 16B, and torus leak on January 22, 2015
- Unit 2, licensed operator simulator training scenario which involved a turbine control valve system failure, core spray keep fill pump trip, reactor recirculation pump trip, and loss of coolant accident on January 27, 2015

The inspectors evaluated operator performance during the simulated event and verified completion of risk-significant operator actions, including the use of abnormal and emergency operating procedures. The inspectors assessed the clarity and effectiveness of communications, implementation of actions in response to alarms and degrading plant conditions, and the oversight and direction provided by the control room supervisor. The inspectors verified the accuracy and timeliness of the emergency classifications made by the shift manager and the TS action statements entered by the control room supervisor.

Additionally, the inspectors assessed the ability of the crew and training staff to identify and document crew performance problems.

b. Findings

No findings were identified.

.2 Quarterly Review of Licensed Operator Performance in the Main Control Room
(2 samples)

a. Inspection Scope

The inspectors observed:

- Unit 2, control room operations during an emergent equipment problem involving the low pressure isolation trip circuit for the reactor core isolation cooling pump steam supply system on January 27, 2015
- Unit 1, control room operations during a surveillance test on Reactor Building Emergency Ventilation on January 28, 2015

The inspectors reviewed HU-AA-101, "Human Performance Tools and Verification Practices," Revision 9, and verified that procedure use, crew communications, and coordination of plant activities among work groups similarly met established expectations and standards.

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness (71111.12Q – 2 samples)

a. Inspection Scope

The inspectors reviewed the samples listed below to assess the effectiveness of maintenance activities on structure, system, and component (SSC) performance and reliability. The inspectors reviewed system health reports, CAP documents, maintenance WOs, and maintenance rule basis documents to ensure that Exelon was identifying and properly evaluating performance problems within the scope of the maintenance rule. For each sample selected, the inspectors verified that the SSC was properly scoped into the maintenance rule in accordance with 10 CFR 50.65 and verified that the (a)(2) performance criteria established by Exelon staff were reasonable. As applicable, for SSCs classified as (a)(1), the inspectors assessed the adequacy of goals and corrective actions to return these SSCs to (a)(2). Additionally, the inspectors ensured that Exelon staff was identifying and addressing common cause failures that occurred within and across maintenance rule system boundaries.

- Maintenance Rule (a)(3) assessment (SA-2014-000089)
- Review of (a)(1) Evaluation and action plan for Post-Accident Monitoring recorders (IR 02001345)

b. Findings

No findings were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13 – 7 samples)a. Inspection Scope

The inspectors reviewed station evaluation and management of plant risk for the maintenance and emergent work activities listed below to verify that Exelon performed the appropriate risk assessments prior to removing equipment from service. The inspectors selected these activities based on potential risk significance relative to the reactor safety cornerstones. As applicable for each activity, the inspectors verified that Exelon personnel performed risk assessments as required by 10 CFR 50.65(a)(4) and that the assessments were accurate and complete. When Exelon performed emergent work, the inspectors verified that operations personnel promptly assessed and managed plant risk. The inspectors reviewed the scope of maintenance work and discussed the results of the assessment with the station's probabilistic risk analyst to verify plant conditions were consistent with the risk assessment. The inspectors also reviewed the TS requirements and inspected portions of redundant safety systems, when applicable, to verify risk analysis assumptions were valid and applicable requirements were met.

- Unit 1, emergency condenser 11 during emergency condenser 12 make-up level control valve LC-60-18B repairs on January 20, 2015
- Unit 2, high pressure core spray pump and Division III EDG during reactor core isolation cooling low suction pressure trip unit repair on January 26, 2015
- Unit 2, Division I and III EDG during Division II EDG overspeed trip cable replacement on January 28, 2015
- Unit 2, EAL declaration and emergency operating procedure entry capability with HVT-CAB206-1/2, Turbine Building Ventilation Radiation Monitor OOS on February 10, 2015
- Unit 1, battery board 12 during hot work with fire detection and suppression defeated on February 17, 2015
- Unit 1, service water motor 11 replacement on March 9, 2015
- Unit 1, Outage Safety Assessment on March 17, 2015

b. Findings

No findings were identified.

1R15 Operability Determinations and Functionality Assessments (71111.15 – 9 samples)a. Inspection Scope

The inspectors reviewed operability determinations for the following degraded or non-conforming conditions:

- Unit 1, 11 Feed Water Booster Pump Min Flow Failed Open January 15, 2015
- Unit 1 and Unit 2, Load cell used to test Snubbers failed calibration on February 6, 2015

- Unit 2, Control Rod 10-27 loss of indication following scram on February 24, 2015
- Unit 1, steam quality percent moisture carryover exceeds 11 percent on February 26, 2015, indicating potential issue with steam separator/dryer
- Unit 2, RCIC turbine drain line trap, 2ICS-TRP1, gasket failure and subsequent steam leak on February 26, 2015
- Unit 1, 1N1-ST-C9, Control room operability test Differential Pressures require evaluation on February 27, 2015
- Unit 2, Division 1 diesel generator lube oil level rose unexpectedly on March 3, 2015
- Unit 2, Division 2 Emergency Fuel Oil Control Solenoid failure on March 5, 2015
- Unit 1, Core Spray and Containment Spray Suction Strainers on March 30, 2015

The inspectors selected these issues based on the risk significance of the associated components and systems. The inspectors evaluated the technical adequacy of the operability determinations to assess whether TS operability was properly justified and the subject component or system remained available such that no unrecognized increase in risk occurred. The inspectors compared the operability and design criteria in the appropriate sections of the TSs and UFSAR to Exelon's evaluations to determine whether the components or systems were operable. Where compensatory measures were required to maintain operability, the inspectors determined whether the measures in place would function as intended and were properly controlled by Exelon. The inspectors determined, where appropriate, compliance with bounding limitations associated with the evaluations.

b. Findings

No findings were identified.

1R18 Plant Modifications (71111.18 – 3 samples)

.1 Permanent Modifications

a. Inspection Scope

The inspectors evaluated the following modifications:

- Engineering Change Package (ECP) 12-000658, Install Fukushima/Flex and NFPA 805 modifications to battery Boards 11 and 12
- ECP 13-000415, Addition of Full Flow Test Line to Support In Service Testing for Emergency Service Water Pumps
- ECP-10-045, Install Generex Upgrade Modification

The inspectors verified that the design bases, licensing bases, and performance capability of the affected systems were not degraded by the modifications. In addition, the inspectors reviewed modification documents associated with the upgrade and design change including the post-installation test procedure, the 10 CFR 50.59 screening form, and the operational impact assessment form.

b. Findings

No findings were identified.

1R19 Post-Maintenance Testing (71111.19 – 6 samples)a. Inspection Scope

The inspectors reviewed the post-maintenance tests for the maintenance activities listed below to verify that procedures and test activities ensured system operability and functional capability. The inspectors reviewed the test procedure to verify that the procedure adequately tested the safety functions that may have been affected by the maintenance activity, that the acceptance criteria in the procedure were consistent with the information in the applicable licensing basis and/or design basis documents, and that the procedure had been properly reviewed and approved. The inspectors also witnessed the test or reviewed test data to verify that the test results adequately demonstrated restoration of the affected safety functions.

- Unit 1, 12 Liquid Poison System Relief Valve Replacement Post Modification Operational Test on January 26, 2015, WO C92462035
- Unit 1, 11 H2O2 monitor following solenoid valve preventative maintenance replacement on February 18, 2015, WO C9248026
- Unit 2, 2ISC-LR1608 reactor vessel level recorder following replacement on February 20, 2015, WO C92974317
- Unit 2, 2HVR*CAB14A above refuel floor radiation monitor sample pump following repair on February 20, 2015, WO C92979220
- Unit 2, 2MSS*RT46C, Main Steam Line Radiation Monitor following CPU replacement on March 10, 2015, WO C92906683
- Unit 1, IV 40-09, Core Spray Discharge Isolation Valve 122 following breaker replacement on March 11, 2015, WO C92595802

b. Findings

No findings were identified.

1R20 Refueling and Other Outage Activities (71111.20 – 1 sample)a. Inspection Scope

The inspectors reviewed the station's work schedule and outage risk plan for the Unit 2 forced outage (2F1501) which occurred from February 18, 2015 through February 23, 2015, and the Unit 1 maintenance and refueling outage (N1R23) which commenced on March 16, 2015.

During the Unit 2 forced outage, the inspectors observed and/or reviewed the following activities to verify that operability requirements were met and that risk, industry experience, and previous site-specific problems were considered:

- Configuration management, including maintenance of defense-in-depth, commensurate with the outage plan for the key safety functions and compliance with the applicable TSs when taking equipment OOS
- Implementation of clearance activities and confirmation that tags were properly hung and that equipment was appropriately configured to safely support the associated work or testing

- Status and configuration of electrical systems and switchyard activities to ensure that TSs were met
- Monitoring of decay heat removal operations
- Human performance review board
- Activities that could affect reactivity
- Plant Operation Review Committee and tracking of startup prerequisites
- Identification and resolution of problems related to refueling outage activities
- Observed portions of startup activities on February 23. Items observed included reactor plant heat-up activities and connecting the main generator to the grid

During preparations and the execution of the Unit 1 maintenance and refueling outage, the inspectors observed and/or reviewed the following activities to verify that operability requirements were met and that risk, industry experience, and previous site-specific problems were considered:

- Configuration management, including maintenance of defense-in-depth, commensurate with the outage plan for the key safety functions and compliance with the applicable TSs when taking equipment OOS
- Implementation of clearance activities and confirmation that tags were properly hung and that equipment was appropriately configured to safely support the associated work or testing
- Installation and configuration of reactor coolant pressure, level, and temperature instruments to provide accurate indication and instrument error accounting
- Status and configuration of electrical systems and switchyard activities to ensure that TSs were met
- Monitoring of decay heat removal operations
- Impact of outage work on the ability of the operators to operate the spent fuel pool cooling system
- Reactor water inventory controls, including flow paths, configurations, alternative means for inventory additions, and controls to prevent inventory loss
- Activities that could affect reactivity
- Plant Operation Review Committee
- Maintenance of secondary containment as required by TSs
- Refueling activities, including fuel handling and fuel receipt inspections
- Fatigue management
- Walkdown of the drywell (primary containment) and torus to verify that debris had not been left which could block the emergency core cooling system suction strainers
- Identification and resolution of problems related to refueling outage activities

b. Findings

No findings were identified.

1R22 Surveillance Testing (71111.22 – 10 samples)

a. Inspection Scope

The inspectors observed performance of surveillance tests and/or reviewed test data of selected risk-significant SSCs to assess whether test results satisfied TSs, the UFSAR,

and Exelon procedure requirements. The inspectors verified that test acceptance criteria were clear, tests demonstrated operational readiness and were consistent with design documentation, test instrumentation had current calibrations and the range and accuracy for the application, tests were performed as written, and applicable test prerequisites were satisfied. Upon test completion, the inspectors considered whether the test results supported that equipment was capable of performing the required safety functions. The inspectors reviewed the following surveillance tests:

- Unit 2, N2-OSP-MSS-Q002, Main Steam Isolation Valve Partial Exercise Test and Functional Test of RPS Main Steam Isolation Valve Closure in Operating Condition 1 or 2 on January 22, 2015
- Unit 1, N1-ISP-036-006, Emergency Cooling System – High Steam Flow Instrument Trip Channel Test/Calibration on February 4, 2015
- Unit 2, N2-ISP-ADS-Q003, Quarterly Functional Test and Calibration of the ADS Logic Timer Initiation Circuits on February 11, 2015
- Unit 1, N1-ST-W12, Core and Containment Spray Compartment Access and Secondary Containment Door Check on February 12, 2015
- Unit 2, N2-ISP-NMS-M@008 Attachment 2, Source Range Monitor B Functional Test on February 20, 2015
- Unit 1, N1-ST-M8, Reactor Building Emergency Ventilation Operability Test, on February 23, 2015
- Unit 1, N1-ST-M1B, Liquid Poison Pump 12 Operability Test, on March 12, 2015
- Unit 1, N1-ST-Q29, Quarterly Turbine Valve Log and Speed Governor Testing, on March 15, 2015
- Unit 1, N1-ST-R2, LOCA and EDG Simulated Auto Initiation Test on March 23, 2015
- Unit 1, N1-ISP-LRT-TYC, Local Leakrate Test on MSIV IV-01-01 on March 25, 2015

b. Findings

No findings were identified.

Cornerstone: Emergency Preparedness

1EP6 Drill Evaluation (71114.06 – 2 samples)

.1 Training Observations

a. Inspection Scope

The inspectors observed simulator training evolutions for Unit 1 and Unit 2 licensed operators on January 22 and 27, 2015, which required emergency plan implementation by the operations crew. Exelon planned for these evolutions to be evaluated and included in performance indicator (PI) data regarding drill and exercise performance. The inspectors observed event classification and notification activities performed by the crew. The inspectors also attended the post-evolution critique for the scenarios. The focus of the inspectors' activities was to note any weaknesses and deficiencies in the crew's performance and ensure that Exelon evaluators noted the same issues and entered them into the CAP.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification (71151)

Unplanned Scrams, Unplanned Power Changes, and Unplanned Scrams with Complications (6 samples)

a. Inspection Scope

The inspectors reviewed Exelon's submittals for the following Initiating Events Cornerstone PIs for the period of January 1 through December 31, 2014.

- Unit 1 and 2 Unplanned Scrams (IE01)
- Unit 1 and 2 Unplanned Power Changes (IE03)
- Unit 1 and 2 Unplanned Scrams with Complications (IE04)

To determine the accuracy of the PI data reported during those periods, inspectors used definitions and guidance contained in the Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7. The inspectors reviewed operator narrative logs, maintenance planning schedules, CRs, event reports, and NRC integrated inspection reports to verify the accuracy of the reported PI data.

b. Findings

No findings were identified.

4OA2 Problem Identification and Resolution (71152 – 1 sample)

.1 Routine Review of Problem Identification and Resolution Activities

a. Inspection Scope

As required by Inspection Procedure 71152, "Problem Identification and Resolution," the inspectors routinely reviewed issues during baseline inspection activities and plant status reviews to verify that Exelon entered issues into the CAP at an appropriate threshold, gave adequate attention to timely corrective actions, and identified and addressed adverse trends. In order to assist with the identification of repetitive equipment failures and specific human performance issues for follow-up, the inspectors performed a daily screening of items entered into the CAP and periodically attended CR screening meetings.

b. Findings

No findings were identified.

.2 Annual Sample – Diesel Fuel Oil Chemistry Program

a. Inspection Scope

The inspectors performed a review of the diesel fuel oil chemistry program for NMPNS. The diesel fuel oil sampling program is maintained and administered by the chemistry department, and includes requirements for the reliable operation of the following diesel generators at NMPNS:

- Unit 1: EDG 102, EDG 103, Diesel Driven Fire Pump
- Unit 2: Division 1 EDG, Division 2 EDG, Division 3 EDG, and Diesel Driven Fire Pump

Diesel fuel oil chemistry sampling is conducted each time new fuel oil arrives on site, before being offloaded into the fuel oil storage tanks. Chemistry technicians also sample the fuel oil storage tanks at Unit 1 and Unit 2 on a monthly and quarterly basis. The inspectors reviewed the past two years of the CAP database to determine if Exelon appropriately entered and addressed issues associated with the diesel fuel oil chemistry program in a timely manner. Although Unit 1 does not have TS requirements for diesel fuel oil chemistry, Unit 1 does have license renewal commitments associated with sampling diesel fuel oil which went into effect when Unit 1 entered the extended period of operation in 2006. The residents reviewed the license renewal commitments, Generic Aging Lessons Learned program documents, and the UFSAR. The inspectors also reviewed the Unit 2 TSs and TS bases for specific requirements associated with sampling diesel fuel oil prior to offload which includes American Petroleum Institute gravity, a specific gravity, or an absolute specific gravity, flash point, kinematic viscosity, and a clear and bright appearance. The inspectors also reviewed drawings of the fuel oil systems and components that support each diesel, completed chemistry surveillance procedures, conducted interviews with Exelon staff, and reviewed applicable operating experience.

b. Findings and Observations

No findings were identified.

Over the past two years, NMPNS has experienced an increase in the number of failed diesel fuel oil samples upon fuel oil receipt from the vendor. A total of six sampling failures have occurred at NMPNS during the past two years. One of those 6 failures, on October 14, 2014, resulted in a Unit 2 Division I EDG 24 hour surveillance test run being suspended due to a diesel fuel oil receipt inspection failure. The diesel fuel oil was returned, the receipt of new fuel was delayed, and the surveillance test was not completed. Exelon generated IR 02395637 for this issue and completed an apparent cause evaluation. Exelon determined the apparent cause to be a lack of procedural guidance for determining how much fuel oil would be consumed during the performance of 24 hour surveillance test run. The evaluation also identified a contributing cause associated with inefficiencies in the process for adding diesel fuel oil to the EDG storage tanks, which resulted in significant lead time for fuel oil additions.

Prior to this event, NMPNS would receive fuel oil from the vendor, transfer it to another tanker truck owned by NMPNS, and allow it to sit for 24 hours. The NMPNS tanker truck would then be sampled prior to discharge into the EDG fuel oil storage tanks. Exelon

determined that the NMPNS tanker trucks were contaminating the fuel due to algae growth during times when they were not being used and that the tank cleaning frequency was not adequate. This was documented in IR 02393718. Exelon determined that the dirty NMPNS tanker truck was a cause of the diesel fuel oil receipt failure on October 14, 2014.

As part of corrective actions associated with IR 02395637, Exelon revised the fuel oil receipt process and removed the NMPNS tanker trucks from service. Exelon now receives diesel fuel oil directly from the vendor and completes diesel fuel oil chemistry sampling upon arrival. Diesel fuel oil is then transferred from the vendor tanker truck to the diesel fuel oil storage tanks. Procedure OP-NM -108-116-1001, "Diesel Fuel Ordering, Receipt and Processing," Revision 00100, describes the new receipt process. The inspectors noted during review of the procedure and through interviews that some information, in the form of a flow chart, associated with the diesel fuel oil receipt process was not included in the procedure but was available to those requesting it. The inspectors determined that it was acceptable given that the information existed and was utilized by those involved with the diesel fuel oil ordering and receipt process; however as part of knowledge transfer, it would be beneficial to include this flow chart as part of the procedure. The inspectors determined that Exelon's incomplete EDG surveillance test was not more than minor because the test was able to be performed satisfactorily prior to the allowed surveillance grace time elapsing.

During review of the apparent cause and chemistry procedure N2-CSP-EDG-@501, "Incoming Diesel Fuel," Revision 01100, the inspectors identified that chemistry technicians were not following step 8.5.12, which states "If the fuel passes clear and bright, add the fuel preservative." Rather, chemistry technicians were adding the preservatives prior to completing the fuel oil sample. The inspectors found through interviews that this has been a historical practice. The inspectors determined this performance deficiency to not be more than minor because it did not adversely alter the diesel fuel oil sample results. Exelon generated IR 024541194 to address this issue.

Overall, the inspectors determined that the diesel fuel oil program is being effectively administered to maintain the sustainability and reliability of the EDG's, diesel driven fire pumps, fuel oil storage tanks, and associated pumps and piping.

4OA3 Follow-Up of Events and Notices of Enforcement Discretion (71153 – 2 samples)

.1 Plant Events

a. Inspection Scope

For the plant events listed below, the inspectors reviewed and/or observed plant parameters, reviewed personnel performance, and evaluated performance of mitigating systems. The inspectors communicated the plant events to appropriate regional personnel, and compared the event details with criteria contained in IMC 0309, "Reactive Inspection Decision Basis for Reactors," for consideration of potential reactive inspection activities. As applicable, the inspectors verified that Exelon made appropriate emergency classification assessments and properly reported the event in accordance with 10 CFR Parts 50.72 and 50.73. The inspectors reviewed Exelon's follow-up actions related to the events to assure that Exelon implemented appropriate corrective actions commensurate with their safety significance.

- Unit 1, Sodium Bisulfite spill and subsequent evacuation of the Screenhouse on February 4, 2015
- Unit 2, manual scram due to unplanned rise in reactor water level on February 18, 2015

b. Findings

Unit 1

Introduction: The inspectors documented a Green NRC-identified violation of 10 CFR 50.54(q)(2) when Exelon failed to declare a Notice of Unusual Event EAL (HU3.1) when entry conditions were met. Specifically, on February 4, 2015, between 9:55 a.m. and 11:15 a.m., access to the Screenhouse was prohibited due the release of a toxic gas that adversely affected normal plant operations following a spill of sodium bisulfite.

Description: On the morning of February 4, 2015, a chemistry technician notified the control room of a strong odor in the Unit 1 Screenhouse. Following investigation it was determined to be a large spill of an unknown substance. Exelon entered their spill assessment and response procedure and dispatched the fire brigade to the Screenhouse. A roll door in the vicinity of the spill was opened and the Screenhouse exhaust fans were started. At this time, the chemical type and extent of the spill had not been communicated to the control room, and at 9:55 a.m., the Screenhouse was evacuated of all non-essential personnel. As a result, ongoing work in the Screenhouse was halted, including Emergency Service Water system maintenance, and a security post was relocated to a new position outside the Screenhouse. Inspectors who were in the control room at the time of the event noted operators who responded to the Screenhouse reported severe throat, eye, and skin irritation from the chemical spill. Exelon spill response personnel determined the spill was beyond the capability of the onsite personnel and offsite assistance was requested. It was later discovered that the substance was sodium bisulfite, a chemical used in the Circulation Water Chemical Addition system. At 11:15 a.m., the spill boundaries were reduced to the west side of the Screenhouse where the chemical odor remained following increased ventilation and access was restored to the rest of the structure.

The inspectors noted sodium bisulfate is not a benign substance. The Material Safety Data Sheet for sodium bisulfate classifies the chemical as a 2 on the Hazard Identification Scale and indicates the chemical is hazardous to the skin, eyes, lungs, and gastro intestinal tract. Additionally, when exposed to water, sodium bisulfite has the potential to give off sulfur dioxide gas, which has a permissible exposure limit and an immediately dangerous to life and health (IDLH) limit. Operational experience at the site has demonstrated the potential for this reaction to occur but during the event, operators were unaware of this potential hazard.

Unit 1 control room operators declare events in accordance with the criteria outlined in EPIP-EPP-101 emergency action level chart. Section HU3.1 of the chart states, in part, that a Notice of Unusual Event shall be declared if "Toxic, corrosive, asphyxiant or flammable gases in amounts that have or could adversely affect normal plant operations" are released. Although operators evaluated the EALs identified in the chart during the incident, including HU3.1, they decided to not enter an EAL since they believed the evacuation was only precautionary in nature and the Screenhouse could be entered if required. Further operators believed the Screenhouse atmosphere was not

IDLH. However, the inspectors noted EPMP-EPP-0101, "Unit 1 Emergency Classification Technical Basis," defines toxic as "any gas that will be injurious to persons inhaling it." Also, it states that "declaration should not be delayed for confirmation from atmospheric testing," but instead base declaration on other evidence such as "indications of personal ill effects from exposure." The control room was not aware of any testing of the Screenhouse which would indicate a benign condition existed during the event, and the inspectors noted that indications of personal ill effects were met by operators who initially responded to the event. Further, although control room operators concluded the area was not IDLH, there was no basis for this determination other than the incorrect assumption that the Screenhouse atmosphere contained exclusively sodium bisulfite and not the more hazardous sulfur dioxide which historical NMPNS operating experience indicates was a possibility. Finally, the inspectors noted the basis of EPMP-EPP-0101 makes no exception for disruptions of normal plant operations as a precautionary measure, and normal operations were in fact affected by prohibiting access to the Screenhouse from 9:55 a.m. to 11:15 a.m. The inspectors discussed the apparent discrepancies between the criteria contained in EPMP-EPP-0101 and the operator response to the event with Exelon who entered this issue into its CAP as IR 02474142.

Analysis: The failure to declare a Notice of Unusual Event when an EAL entry criteria had been met in accordance with 10 CFR 50.54(q)(2) and 10 CFR 50.47(b)(4) was considered a performance deficiency that was within Exelon's ability to foresee and correct, and therefore should have been prevented. This finding is more than minor because it was associated with the Emergency Preparedness cornerstone attribute of Emergency Response Organization Performance, and affected the cornerstone objective of ensuring that a licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. Specifically, between 9:55 a.m. and 11:15 a.m., access to the Unit 1 Screenhouse was prohibited due to the release of sodium bisulfite to the Screenhouse, affecting the normal plant operations of the station. This finding was evaluated using IMC 0609, Appendix B, "Emergency Preparedness SDP," Section 4, "Failure to Implement." The performance deficiency is associated with the emergency classification planning standard and is considered a RSPS. The failure to declare a Notice of Unusual Event when directed by the EAL Matrix is considered a lost or degraded RSPS in accordance with Section 4 of IMC 0609. Section 4.3.c and Attachment 1 of IMC 0609, Appendix B, provide the significance determination for a "Failure to Implement," and the performance deficiency was determined to be of very low safety significance (Green).

The inspectors determined that the cross-cutting aspect that contributed most to the root cause is Human Performance, "Challenge the Unknown: Individuals stop when faced with uncertain conditions. Risks are evaluated and managed before proceeding." Specifically, during the event, an unknown substance was released and at no point was atmospheric analysis used in the EAL declaration decision-making process. Furthermore, although spill response personnel were experiencing symptoms that were not consistent with exposure to a spill of sodium bisulfite, this unexpected condition was not fully assessed by NMPNS for significance and reportability in accordance with procedures [H.11]. (Section 4OA3)

Enforcement: 10 CFR 50.54(q)(2) requires that a holder of a nuclear power reactor operating license under this part, shall follow and maintain the effectiveness of an emergency plan that meets the requirements of 10 CFR 50.47(b). 10 CFR 50.47(b)(4)

requires a standard emergency classification and action level scheme, the bases of which include facility system and effluent parameters, is in use by the nuclear facility licensee, and state and local response plans call for reliance on information provided by facility licensees for determinations of minimum initial offsite response measures.

Contrary to the above, on February 4, 2015, Exelon failed to implement an emergency plan that met the standards in 10 CFR 50.47(b)(4) when they did not declare a Notice of Unusual Event as described by their EAL scheme. Specifically, Exelon failed to implement their standard emergency level scheme when normal plant operations were affected by the evacuation of the Screenhouse and indications of personal ill effects from exposure were present. Immediate corrective actions included Exelon entering the issue into their CAP as IR 02474142, formally evaluating the decision-making process used during the incident, and clarifying responsibilities for air sampling and the reporting of samples during incidents in the future. Because this violation was of very low safety significance and was entered into Exelon's CAP, this violation is being treated as an NCV consistent with Section 2.3.2.a of the NRC Enforcement Policy. **(NCV 05000220/2015001-01, Failure to Declare Notice of Unusual Event Following Sodium Bisulfite Spill in Unit 1 Screenhouse)**

Unit 2

Introduction: The inspectors identified a self-revealing Green finding (FIN) for Exelon's failure to properly review a work package associated with a reactor vessel level replacement as required by MA-AA-716-234, "FIN Team Process," Revision 8. Specifically, on February 18, 2015, control room operators manually scrambled Unit 2 when reactor vessel water level unexpectedly rose above desired limits during a planned replacement of Unit 2 reactor vessel level recorder 2ISC-LR1608. The unplanned rise in reactor water level occurred when daisy chained leads associated with the level recorder were lifted, which caused an interruption in the feedwater level control circuit.

Description: Reactor vessel level recorder 2ISC-LR1608 provides reactor vessel level indication to control room operators on the front display of the main control room panel. Level recorder 2ISC-LR1608 is wired such that it is part of a daisy-chain circuit for reactor vessel water level that provides an input to the three-element reactor vessel level control system. The three-element level control system measures feedwater flow, steam flow, and reactor vessel level continuously during normal reactor operation and adjusts the position of the feedwater control valves to maintain water level within predefined limits.

On February 11, 2015, level recorder 2ISC-LR1608 was scheduled for replacement through WO C92974317. This action was documented in IR 2450231. On February 18, 2015, maintenance personnel proceeded with replacement of the level recorder, which involved lifting wire leads on the recorder to facilitate removal from the control panel. However, unknown to the maintenance or control room personnel, the leads were associated with the three-element level control system. This meant that any interruption in the circuit, such as lifting of a lead or cutting of a wire in the circuit, would cause the three-element feedwater level control system to sense a low reactor vessel water level. As a result when the level control circuit was interrupted, the feedwater level control system sensed a false low reactor vessel water level, which caused the feedwater control valves to immediately open resulting in a rapid increase in reactor vessel level. Operators responded to the rapid rising water level alarms and appropriately inserted a

manual reactor scram, recognizing that an automatic reactor trip due to high reactor vessel water level was imminent.

The recorder replacement was accomplished using WO C92974317 which was prepared using work planning document procedure MA-AA-716-234. Section 4.2.2 of procedure MA-AA-716-234 states that Exelon personnel shall ensure that a review of the affected circuit for daisy-chained power/neutral circuits be performed. Section 4.2.2 also states that if a daisy-chain does exist, then Exelon staff shall ensure measures are in place to address the impact on other equipment. Exelon staff did not properly identify the daisy-chained circuit associated with reactor water level recorder and WO C92974317 did not contain any discussion about the expected system response or action to mitigate that system response. Following the scram, Exelon generated IR 02454892 and developed corrective actions which included performing the replacement while the reactor was in shutdown and placing the level control system in manual, which prevented impact to the feedwater level control system during replacement.

Analysis: The inspector's determined that Exelon's failure to ensure measures were in place to address the impact on reactor vessel level prior to level recorder replacement in accordance with MA-AA-716-234 was a performance deficiency that was reasonably within Exelon's ability to foresee and correct and should have been prevented. 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, Exelon did not ensure measures were in place to prevent an adverse impact on the feedwater level control system during level recorder replacement. This resulted in a rapid rise in reactor water level and subsequent manual reactor scram.

In accordance with IMC 0609.04, "Initial Characterization of Findings," and Exhibit 1 of IMC 0609, Appendix A, "The Significance Determination Process for Findings At-Power," issued June 19, 2012, 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, Avoid Complacency, because Exelon failed to recognize and plan for the possibility of mistakes, latent issues, and inherent risk even while expecting successful outcomes. Specifically, Exelon did not ensure measures were in place to address the impact of the level recorder replacement on the feedwater level control system [H.12].

Enforcement: This finding is against procedure MA-AA-716-234, Revision 8, for Exelon's failure to ensure measures were in place to address the impact of the level recorder replacement on the feedwater level control system. Specifically, the inspectors determined that Exelon did not ensure the daisy-chain circuit associated with the level recorder was identified and planned for impact on other equipment. This resulted in a rapid rise in reactor water level when the level recorder circuit was opened and a subsequent Unit 2 reactor scram. Because procedure MA-AA-716-234 is not required by Regulatory Guide 1.33, "Quality Assurance Program Requirements (Operation)," Revision 2, and the work being performed was not on a safety-related system, this finding does not involve enforcement action because no violation of a regulatory

requirement was identified. The issue was entered into Exelon's CAP as IR 02454892. Because this finding does not involve a violation and is of very low safety or security significance, it is identified as a FIN. **(FIN 05000410/2015001-02, Failure to Perform an Adequate Review of Planned Work Activities Results in a Manual Reactor Scram).**

4OA5 Other Activities

.1 World Association of Nuclear Plant Operators (WANO) Report Review

a. Inspection Scope

The inspectors reviewed the December 18, 2014, interim report for the WANO plant assessment of NMPNS for the period of January 2013 to December 2014. The report primarily relied on observations made by WANO representatives during the weeks of October 13 and October 20, 2014.

The inspectors evaluated the report to ensure that NRC perspectives of NMPNS's performance were consistent with any issues identified during the assessment. The inspectors also reviewed the report to determine whether WANO identified any significant safety issues that required further NRC follow-up.

b. Findings

No findings were identified.

2. (Closed) Unresolved Item (URI) 05000410/2014005-04: Assessment of the UPS3B Failure Which Resulted in a Reactor Scram

a. Inspection Scope

On March 4, 2014, control room operators manually scrammed Unit 2 because of rising reactor recirculation pump seal and motor temperatures. Prior to the scram, a malfunction of the uninterruptible power supply (UPS) occurred, which caused the primary containment cooling water isolation valves to close and a reactor protection system (RPS) half scram. The malfunction of the UPS was due to a degraded material condition within the system which initially was attributed to warping or cracking of the backplane. However, the engineering staff and a vendor representative had examined the UPS3B backplane during the Unit 2 RFO and found no indication of cracking or warping. This examination occurred following management review committee approval of the root cause. The inspectors reviewed the licensee event report and initial root cause report associated with the event and determined that the equipment failures outlined in the root cause investigation did not reflect information regarding the UPS components that Exelon learned during follow on troubleshooting activities. Exelon committed to revise the root cause to address the backplane warping issue.

The inspectors reviewed Exelon's revised root cause report. The revised report does not conclusively identify a failure mode, however the corrective actions include the complete replacement of applicable UPS circuit cards which include the backplanes. In addition to replacing the degraded material condition, they will implement new processes for repairs and refurbishment for subcomponents within the UPS system. These actions

appear to be extensive and robust enough to prevent reoccurrence. The inspectors found no performance deficiencies or violations of NRC requirements. Therefore, this URI is closed.

b. Findings

No findings were identified.

4OA6 Meetings, Including Exit

On April 16, 2015, the inspectors presented the inspection results to Mr. Peter Orphanos, Site Vice President, and other members of the NMPNS staff. The inspectors verified that no propriety information was retained by the inspectors or documented in this report.

ATTACHMENT: SUPPLEMENTARY INFORMATION

SUPPLEMENTARY INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

P. Orphanos, Site Vice President
 W. Trafton, Plant Manager
 A. Armstrong, Manager, Operations Training
 M. Busch, Assistant Operations Director, Site Operations
 K. Clark, Manager, Site Security
 C. Kronich, Supervisor, Nuclear Oversight
 M. Khan, Senior Manager, Engineering
 M. Kunzwiler, Manager, Site Security Operations
 S. Howe, Manager, Chemistry
 B. Scaglione, Manager, Engineering
 K. Kristensen, Principle Regulatory Engineer
 A. Sterio, Director, Site Maintenance
 D. Moore, Manager, Regulatory Assurance
 T. Tanguay, Shift Operations Superintendent (Unit 2)
 J. Thompson, Manager, Mechanical Maintenance
 J. Tsardakas, Shift Operations Superintendent (Unit 1)
 J. Westermann, Manager, Emergency Preparedness

LIST OF ITEMS OPENED, CLOSED, DISCUSSED, AND UPDATED

Opened/Closed

05000220/2015001-01	NCV	Failure to Declare Notice of Unusual Event Following Sodium Bisulfite Spill in Unit 1 Screenhouse (Section 4OA3)
05000410/2015001-02	FIN	Failure to Perform an Adequate Review of Planned Work Activities Results in a Manual Reactor Scram (Section 4OA3)

Closed

05000410/2014005-04	URI	Assessment of the UPS3B Failure Which Resulted in a Reactor Scram (Section 4OA3)
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LIST OF DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection

Procedures

N1-ST-DO, Daily Checks, Revision 03600

Issue Reports

IR-02432544

Section 1R04: Equipment Alignment

Procedures

NMPNS-IST-001, Pump & Valve Inservice Testing Program Plan, Revision 6

N1-EOP-HC, NMP1 EOP Hard Card Procedure, Revision 00400

N1-EMP-SB-262, 24/48VDC 125VDC and 250VDC Batteries – Single Cell Charging,
Revision 00800

N1-EPM-SB-265, DC Batteries Pilot Cell Test, Revision 01201

N1-EPM-SB-277, Battery 11 Service Test, Revision 00801

N1-ESP-SB-276, 125VDC Pilot Cell Surveillance, Revision 01101

N1-OP-10, Reactor Building Heating and Ventilation, Revision 02300

N1-OP-12, Emergency Cooling System, Revision 03800

N1-OP-16, Feedwater Booster Pump to Reactor, Revision 05502

N1-OP-33B, 345 Kv System Revision 02801

N1-OP-47A, 125VDC Power System, Revision 02701

N1-SOP-33A.2, Station Blackout, Revision 00900

N2-OP-34, Nuclear Boiler, Automatic Depressurization and Safety Relief Valves, Revision 00900

N2-OP-53A, Control Building Ventilation System, Revision 01200

Drawings

PID-36A, Piping and Instrument Diagram, Control Building Ventilation and Air Conditioning,
Revision 25

PID-53C-17, Piping and Instrument Diagram, Control Building Ventilation and Air Conditioning,
Revision 18

PID-53D-17, Piping and Instrument Diagram, Control Building Ventilation and Air Conditioning,
Revision

PID-61A, Piping and Instrumentation Diagram Primary Containment & Standby Gas Treatment,
Revision 13

PID-61B, Piping and Instrumentation Diagram Primary Containment & Standby Gas Treatment,
Revision 22

C-18013-C, Reactor Building Heating and Ventilation System P&I Diagram, Revision 34

C-18016-C, Reactor Vessel Water Level Reference Leg Backfill P&I Diagram, Revision 3

C-18017-C, Emergency Cooling System P&I Diagram, Revision 55

C-19839-C, One Line Diagram 125VDC Control Bus, Revision 14

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 EPMP-EPP-0102, Unit 2 Emergency Classification Technical Basis, Revision 02001
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 NIP-OUT-01, Shutdown Safety, Revision 04300
 OP-AA-108-117, Protected Equipment Program, Revision 4
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 MA-AA-716-234, FIN Team Process, Revision 8
 N1-OP-43C, Plant Shutdown, Revision 01600
 N2-IPM-FWS-@004, Upset Range Reactor Level Instrument Calibration, Revision 00300
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Section 1R22: Surveillance Testing

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 N1-ISP-036-006, Emergency Cooling System – High Steam Flow Instrument Trip Channel
 Test/Calibration, Revision 00800
 N1-ISP-LRT-TYC, Type “C” Containment Isolation Valve Leak Rate Test, Revision 01001
 N1-ST-C, Control Room Emergency Ventilation System Operability Test, Revision 01501
 N1-ST-M8, Reactor Building Emergency Ventilation Operability Test, Revision 01500
 N1-ST-Q29, Quarterly Turbine Valve Log and Speed Governor Testing, Revision 00201
 N1-ST-R2, LOCA and EDG Simulated Auto Initiation Test, Revision 03400

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 Unit 1 N1-ST-M1B, Liquid Poison Pump 12 Operability Test, Revision 00600

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Section 4OA2: Problem Identification and Resolution

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 OP-NM-108-116-1001, Diesel Fuel Ordering, Receipt and Processing, Revision 00100
 N2-CS-EDG-M500, Emergency Diesel Fuel Monthly Particulate Surveillance, Revision 00103
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 N1-CSP-Q504, Quarterly Diesel Fuel Oil Sampling and Analysis, Revision 00701
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 C18026-C-002, Emergency Diesel Generator #103 Starting Air, Cooling Water Lube Oil & Fuel P&I Diagram, Revision 29
 PID-104F-4, Piping & Instrumentation Diagram Fuel Oil Schematic, Standby Diesel Generator System, Revision 4

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Miscellaneous

Material Safety Data Sheet – Sodium Bisulfite

Material Safety Data Sheet – Sulfur Dioxide

LIST OF ACRONYMS

10 CFR	Title 10 of the <i>Code of Federal Regulations</i>
ASME	American Society of Mechanical Engineers
CAP	corrective action program
CR	condition report
EAL	emergency action level
ECP	engineering change package
EDG	emergency diesel generator
Exelon	Exelon Generation Company, LLC
FA	fire area
FIN	finding
HX	heat exchanger
IDLH	immediately dangerous to life and health
IMC	Inspection Manual Chapter
IR	issue report
ISI	In-service Inspection
MSIV	main steam isolation valve
NCV	non-cited violation
NDE	nondestructive examination
NMPNS	Nine Mile Point Nuclear Station, LLC
NRC	Nuclear Regulatory Commission, U.S.
OOS	out of service
PI	performance indicator
RFO	refueling outage
RSPS	risk-significant planning standard
SDP	significance determination process
SSC	structure, system, and component
TS	technical specification
UFSAR	Updated Final Safety Analysis Report
UPS	uninterruptible power supply
URI	unresolved item
UT	ultrasonic testing
VDC	volts direct current
WANO	World Association of Nuclear Plant Operators
WO	work order