



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

REGION I
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KING OF PRUSSIA, PENNSYLVANIA 19406-2713

January 26, 2022

Mr. David P. Rhoades
Senior Vice President
Exelon Generation Company, LLC
President and Chief Nuclear Officer
Exelon Nuclear
4300 Winfield Road
Warrenville, IL 60555

**SUBJECT: NINE MILE POINT NUCLEAR STATION, UNITS 1 AND 2 – INTEGRATED
INSPECTION REPORT 05000220/2021004 AND 05000410/2021004**

Dear Mr. Rhoades:

On December 31, 2021, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Nine Mile Point Nuclear Station, Units 1 and 2. On January 20, 2022, the NRC inspectors discussed the results of this inspection with Mr. Adam Schuerman, Plant Manager, and other members of your staff. The results of this inspection are documented in the enclosed report.

One finding of very low safety significance (Green) is documented in this report. This finding involved a violation of NRC requirements. We are treating this violation as a non-cited violation (NCV) consistent with Section 2.3.2 of the Enforcement Policy.

If you contest the violation or the significance or severity of the violation documented in this inspection report, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region I; the Director, Office of Enforcement; and the NRC Resident Inspector at Nine Mile Point Nuclear Station, Units 1 and 2.

This letter, its enclosure, and your response (if any) will be made available for public inspection and copying at <http://www.nrc.gov/reading-rm/adams.html> and at the NRC Public Document Room in accordance with Title 10 of the *Code of Federal Regulations* 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Sincerely,

Erin E. Carfang, Chief
Projects Branch 1
Division of Operating Reactor Safety

Docket Nos. 05000220 and 05000410
License Nos. DPR-63 and NPF-69

Enclosure:
As stated

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SUBJECT: NINE MILE POINT NUCLEAR STATION, UNITS 1 AND 2 – INTEGRATED INSPECTION REPORT 05000220/2021004 AND 05000410/2021004 DATED JANUARY 26, 2022

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**U.S. NUCLEAR REGULATORY COMMISSION
Inspection Report**

Docket Numbers: 05000220 and 05000410

License Numbers: DPR-63 and NPF-69

Report Numbers: 05000220/2021004 and 05000410/2021004

Enterprise Identifier: I-2021-004-0115

Licensee: Exelon Generation Company, LLC

Facility: Nine Mile Point Nuclear Station

Location: Oswego, NY

Inspection Dates: October 1, 2021 to December 31, 2021

Inspectors: G. Stock, Senior Resident Inspector
C. Kline, Resident Inspector
B. Sienel, Resident Inspector
J. Demarshall, Senior Operations Engineer
T. Fish, Senior Operations Engineer
J. Hawkins, Senior Project Engineer
P. Ott, Operations Engineer

Approved By: Erin E. Carfang, Chief
Projects Branch 1
Division of Operating Reactor Safety

Enclosure

SUMMARY

The U.S. Nuclear Regulatory Commission (NRC) continued monitoring the licensee’s performance by conducting an integrated inspection at Nine Mile Point Nuclear Station, Units 1 and 2, in accordance with the Reactor Oversight Process. The Reactor Oversight Process is the NRC’s program for overseeing the safe operation of commercial nuclear power reactors. Refer to <https://www.nrc.gov/reactors/operating/oversight.html> for more information.

List of Findings and Violations

Failure to Correct a Condition Adverse to Quality with an Uninterruptible Power Supply			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000220,05000410/2021004-01 Open/Closed	None (NPP)	71152
<p>The inspectors documented a self-revealed Green non-cited violation (NCV) of Title 10 of the <i>Code of Federal Regulations</i> (10 CFR) Part 50, Appendix B, Criterion XVI, “Corrective Action,” when Exelon did not ensure that a condition adverse to quality (CAQ) associated with an identified deviation from the normal operating frequency of an uninterruptible power supply (UPS) was promptly identified and corrected. Specifically, on August 1, 2016, after performing maintenance on and placing the UPS-162A in service, Exelon documented an off-normal condition related to the UPS inverter frequency being lower than normal and oscillating. Exelon closed this issue report (IR) to trend without properly evaluating and correcting the condition, resulting in the failure of the reactor protection system (RPS) UPS-162A and causing the plant to experience a half-scrum condition, an isolation of both emergency condensers, and an isolation of the reactor water cleanup (RWCU) system on September 25, 2021.</p>			

Additional Tracking Items

Type	Issue Number	Title	Report Section	Status
LER	05000220/2021001-00	LER 2021-001-00, Average Power Range Monitors Declared Inoperable Due to Trip of Reactor Recirculation Pump 13	71153	Closed
LER	05000220/2021002-00	LER 2021-002-00, Isolation of Both Emergency Condensers Due to Loss of UPS-162A	71153	Closed

PLANT STATUS

Unit 1 began the inspection period at rated thermal power. On October 2, 2021, reactor power was reduced to approximately 75 percent for a control rod pattern adjustment, control rod scram time testing, and turbine valve testing and returned to rated thermal power the same day. On November 2, 2021, reactor power was reduced to approximately 98 percent to maintain inlet to discharge differential temperature within state limits due to condenser fouling. On November 13, 2021, reactor power was reduced to approximately 51 percent to correct the condenser fouling. On November 13, 2021, Unit 1 was returned to rated thermal power. Unit 1 remained at or near rated thermal power for the remainder of the inspection period.

Unit 2 began the inspection period at rated thermal power. On October 9, November 21, and December 10, 2021, reactor power was reduced to approximately 75 percent to perform control rod channel interference testing, control rod scram time testing, and control rod pattern adjustments. In each instance, Unit 2 was returned to rated thermal power on the same day or the following day and remained at or near rated thermal power for the remainder of the inspection period.

INSPECTION SCOPES

Inspections were conducted using the appropriate portions of the inspection procedures (IPs) in effect at the beginning of the inspection unless otherwise noted. Currently approved IPs with their attached revision histories are located on the public website at <http://www.nrc.gov/reading-rm/doc-collections/insp-manual/inspection-procedure/index.html>. Samples were declared complete when the IP requirements most appropriate to the inspection activity were met consistent with Inspection Manual Chapter (IMC) 2515, "Light-Water Reactor Inspection Program - Operations Phase." The inspectors performed activities described in IMC 2515, Appendix D, "Plant Status," conducted routine reviews using IP 71152, "Problem Identification and Resolution," observed risk significant activities, and completed on-site portions of IPs. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel to assess licensee performance and compliance with Commission rules and regulations, license conditions, site procedures, and standards.

REACTOR SAFETY

71111.01 - Adverse Weather Protection

Seasonal Extreme Weather Sample (IP Section 03.01) (1 Sample)

- (1) The inspectors evaluated readiness for seasonal extreme weather conditions prior to the onset of seasonal cold temperatures for the Unit 1 emergency diesel generators and the Unit 2 Division I and II diesel generators.

Impending Severe Weather Sample (IP Section 03.02) (1 Sample)

- (1) The inspectors evaluated the adequacy of the overall preparations to protect risk-significant systems from impending severe weather for high winds on December 6, 2021.

71111.04 - Equipment Alignment

Partial Walkdown Sample (IP Section 03.01) (4 Samples)

The inspectors evaluated system configurations during partial walkdowns of the following systems/trains:

- (1) Unit 2 control rod drive on November 23, 2021
- (2) Unit 2 Division II residual heat removal on November 23, 2021
- (3) Unit 2 Division II diesel generator on November 29, 2021
- (4) Unit 2 reactor building closed loop cooling water on November 29, 2021

Complete Walkdown Sample (IP Section 03.02) (1 Sample)

- (1) The inspectors evaluated system configurations during a complete walkdown of the Unit 2 standby gas treatment system on November 4, 2021.

71111.05 - Fire Protection

Fire Area Walkdown and Inspection Sample (IP Section 03.01) (8 Samples)

The inspectors evaluated the implementation of the fire protection program by conducting a walkdown and performing a review to verify program compliance, equipment functionality, material condition, and operational readiness of the following fire areas:

- (1) Unit 2 reactor building 175' and 240', reactor core isolation cooling pump room, fire area 2, on October 5, 2021
- (2) Unit 2 reactor building 261', standby gas treatment rooms A and B, fire areas 4, 73, and 74, on November 4, 2021
- (3) Unit 2 Division I switchgear room, fire area 17, on November 22, 2021
- (4) Unit 2 Division II diesel generator control room, fire area 29, on November 23, 2021
- (5) Unit 2 reactor building 328', fire areas 34 and 35, on November 30, 2021
- (6) Unit 2 Division III diesel generator control room 261/274', fire area 30, on December 13, 2021
- (7) Unit 2 Division I diesel generator control room 261/274', fire area 28, on December 13, 2021
- (8) Unit 2 control building 288' relay room, fire area 24, on December 14, 2021

71111.06 - Flood Protection Measures

Inspection Activities - Internal Flooding (IP Section 03.01) (1 Sample)

The inspectors evaluated internal flooding mitigation protections in the:

- (1) Unit 2 Division I and II emergency switchgear rooms, on November 22, 2021

71111.11A - Licensed Operator Requalification Program and Licensed Operator Performance

Requalification Examination Results (IP Section 03.03) (2 Samples)

- (1) The inspectors reviewed and evaluated the licensed operator examination failure rates for the requalification annual operating exam administered October – November 2021.
- (2) The inspectors reviewed and evaluated the Unit 1 licensed operator annual requalification results for the annual operating exam on December 6, 2021.

71111.11B - Licensed Operator Requalification Program and Licensed Operator Performance

Licensed Operator Requalification Program (IP Section 03.04) (1 Sample)

(1) Biennial Requalification Written Examinations

The inspectors evaluated the quality of the licensed operator biennial requalification written examination administered October - November 2021.

Annual Requalification Operating Tests

The inspectors evaluated the adequacy of the facility licensee's annual requalification operating test.

Administration of an Annual Requalification Operating Test

The inspectors evaluated the effectiveness of the facility licensee in administering requalification operating tests required by 10 CFR 55.59(a)(2) and that the facility licensee is effectively evaluating their licensed operators for mastery of training objectives.

Requalification Examination Security

The inspectors evaluated the ability of the facility licensee to safeguard examination material, such that the examination is not compromised.

Remedial Training and Re-examinations

The inspectors evaluated the effectiveness of remedial training conducted by the licensee, and reviewed the adequacy of re-examinations for licensed operators who did not pass a required requalification examination.

Operator License Conditions

The inspectors evaluated the licensee's program for ensuring that licensed operators meet the conditions of their licenses.

Control Room Simulator

The inspectors evaluated the adequacy of the facility licensee's control room simulator in modeling the actual plant, and for meeting the requirements contained in 10 CFR 55.46.

Problem Identification and Resolution

The inspectors evaluated the licensee's ability to identify and resolve problems associated with licensed operator performance.

71111.11Q - Licensed Operator Requalification Program and Licensed Operator Performance

Licensed Operator Performance in the Actual Plant/Main Control Room (IP Section 03.01) (2 Samples)

- (1) The inspectors observed Unit 1 operations personnel during a planned reactor downpower to approximately 80 percent for a rod pattern adjustment and control rod scram time testing on October 1, 2021.
- (2) The inspectors observed Unit 2 operations personnel during a planned reactor downpower to approximately 97 percent and control rod friction testing on October 8, 2021.

Licensed Operator Requalification Training/Examinations (IP Section 03.02) (2 Samples)

- (1) The inspectors observed a Unit 2 simulator evaluation that included the loss of an emergency switchgear bus, a trip of a feedwater heater drain pump, a failure to SCRAM, and a loss of coolant accident inside containment on October 12, 2021.
- (2) The inspectors observed a Unit 1 annual examination that included an unplanned opening of an electro-matic relief valve, the 12 emergency condenser tube leak, an instrument air leak, and a steam leak inside containment on October 26, 2021.

71111.12 - Maintenance Effectiveness

Maintenance Effectiveness (IP Section 03.01) (3 Samples)

The inspectors evaluated the effectiveness of maintenance to ensure the following structures, systems, and components (SSCs) remain capable of performing their intended function:

- (1) Unit 1 safety-related ventilation control room chiller 11B oil leak
- (2) Unit 2 automatic depressurization system makeup valve stuck open
- (3) Unit 2 service water discharge valve failure to open

71111.13 - Maintenance Risk Assessments and Emergent Work Control

Risk Assessment and Management Sample (IP Section 03.01) (4 Samples)

The inspectors evaluated the accuracy and completeness of risk assessments for the following planned and emergent work activities to ensure configuration changes and appropriate work controls were addressed:

- (1) Unit 2 elevated risk during scheduled high pressure core spray maintenance on October 26, 2021
- (2) Unit 1 elevated risk during scheduled 12 feedwater pump maintenance on November 3, 2021
- (3) Unit 2 elevated risk during unplanned reactor core isolation cooling maintenance on November 9, 2021
- (4) Unit 2 elevated risk during scheduled Division I emergency diesel generator 6-year preventive maintenance on November 17, 2021

71111.15 - Operability Determinations and Functionality Assessments

Operability Determination or Functionality Assessment (IP Section 03.01) (5 Samples)

The inspectors evaluated the licensee's justifications and actions associated with the following operability determinations and functionality assessments:

- (1) Unit 1 emergency diesel generator 102 due to inaccurate day tank level indication on October 5, 2021
- (2) Unit 1 11 and 12 emergency cooling systems following isolation during the loss of reactor protection system 11 on October 15, 2021
- (3) Unit 2 Division III diesel generator due to potential fuel oil lubricity out of specification on October 18, 2021
- (4) Unit 2 Division II diesel generator following jacket water leak on November 3, 2021
- (5) Unit 2 reactor core isolation cooling due to flow controller failure on November 8, 2021

71111.18 - Plant Modifications

Temporary Modifications and/or Permanent Modifications (IP Section 03.01 and/or 03.02) (1 Sample)

The inspectors evaluated the following temporary or permanent modifications:

- (1) Permanent Modification: ECP-21-000437, Unit 2 Division II Emergency Diesel Generator Governor Booster Modification

71111.19 - Post-Maintenance Testing

Post-Maintenance Test Sample (IP Section 03.01) (4 Samples)

The inspectors evaluated the following post-maintenance test activities to verify system operability and functionality:

- (1) Unit 2 Division II diesel generator governor replacement on November 6, 2021
- (2) Unit 2 Division I control building chiller maintenance on December 2, 2021
- (3) Unit 1 121 core spray pump and booster pump breaker replacements on December 2, 2021
- (4) Unit 2 reactor core isolation cooling following flow controller maintenance on November 10, 2021

71111.22 - Surveillance Testing

The inspectors evaluated the following surveillance tests:

Surveillance Tests (other) (IP Section 03.01) (2 Samples)

- (1) N1-ST-Q8A, Liquid Poison 11 and Check Valve Operability Test, on October 18, 2021
- (2) N2-ISP-CSL-Q001, Low Pressure Core Spray Pump Discharge Flow - Low (Bypass) Instrument Channel Functional Test, on December 21, 2021

RCS Leakage Detection Testing (IP Section 03.01) (1 Sample)

- (1) N2-OSP-LOG-S001, Shift Checks - Mode 1, on November 29, 2021

71114.06 - Drill Evaluation

Select Emergency Preparedness Drills and/or Training for Observation (IP Section 03.01) (1 Sample)

- (1) The inspectors evaluated a Unit 2 simulator evaluation which included a failure to SCRAM, a loss of coolant accident, and the declaration of an Alert on October 12, 2021.

OTHER ACTIVITIES – BASELINE

71151 - Performance Indicator Verification

The inspectors verified licensee performance indicators submittals listed below:

MS08: Heat Removal Systems (IP Section 02.07) (2 Samples)

- (1) Unit 1 - October 1, 2020 through September 30, 2021
- (2) Unit 2 - October 1, 2020 through September 30, 2021

MS09: Residual Heat Removal Systems (IP Section 02.08) (2 Samples)

- (1) Unit 1 - October 1, 2020 through September 30, 2021
- (2) Unit 2 - October 1, 2020 through September 30, 2021

MS10: Cooling Water Support Systems (IP Section 02.09) (2 Samples)

- (1) Unit 2 - October 1, 2020 through September 30, 2021
- (2) Unit 1 - October 1, 2020 through September 30, 2021

71152 - Problem Identification and Resolution (PI&R)

Semiannual Trend Review (IP Section 02.02) (1 Sample)

- (1) The inspectors reviewed the licensee's corrective action program for potential adverse trends that might be indicative of a more significant safety issue.

Annual Follow-up of Selected Issues (IP Section 02.03) (2 Samples)

The inspectors reviewed the licensee’s implementation of its corrective action program related to the following issues:

- (1) IR 04448532 - Review of Uninterruptible Power Supply Failure
- (2) IR 04372127 - Review of Trend in Surveillance Test Interval Implementation

71153 - Follow Up of Events and Notices of Enforcement Discretion

Event Report (IP Section 03.02) (2 Samples)

The inspectors evaluated the following licensee event reports (LERs):

- (1) LER 05000220/2021-001-00, Average Power Range Monitors Declared Inoperable Due to Trip of Reactor Recirculation Pump 13. (ADAMS Accession No. ML21144A050). The inspectors determined that it was not reasonable to foresee or correct the cause discussed in the LER, therefore no performance deficiency was identified. The inspectors did not identify a violation of NRC requirements. This LER is closed.
- (2) LER 05000220/2021-002-00, Isolation of Both Emergency Condensers Due to Loss of UPS-162A. (ADAMS Accession No. ML21327A024). The inspection conclusions associated with this LER are documented in this report under Inspection Results. This LER is closed.

INSPECTION RESULTS

Failure to Correct a Condition Adverse to Quality with an Uninterruptible Power Supply			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000220,05000410/2021004-01 Open/Closed	None (NPP)	71152
<p>The inspectors documented a self-revealed Green non-cited violation (NCV) of Title 10 of the <i>Code of Federal Regulations</i> (10 CFR) Part 50, Appendix B, Criterion XVI, “Corrective Action,” when Exelon did not ensure that a condition adverse to quality (CAQ) associated with an identified deviation from the normal operating frequency of an uninterruptible power supply (UPS) was promptly identified and corrected. Specifically, on August 1, 2016, after performing maintenance on and placing the UPS-162A in service, Exelon documented an off-normal condition related to the UPS inverter frequency being lower than normal and oscillating. Exelon closed this issue report (IR) to trend without properly evaluating and correcting the condition, resulting in the failure of the reactor protection system (RPS) UPS-162A and causing the plant to experience a half scram condition, an isolation of both emergency condensers, and an isolation of the reactor water cleanup (RWCU) system on September 25, 2021.</p>			
<p><u>Description:</u> In 1993, motor generator sets at Unit 1 were replaced with four safety-related UPSs (UPS-162A and -B, UPS-172A and -B) to supply conditioned 120 VAC power to the RPS and instrument buses. Preventive maintenance is performed on the Unit 1 internal UPS circuit cards by replacing them every 10 years.</p>			

On September 25, 2021, UPS-162A experienced voltage and frequency perturbations (-5 VAC and 0.2 Hz from the normal values) which resulted in actuation of the RPS bus 11 under frequency protective relaying. This actuation caused a loss and subsequent restoration of RPS bus 11 on UPS-162A which resulted in a half scram, an isolation of both emergency condensers, and RWCU isolation. After troubleshooting the equipment and consulting with the vendor, Exelon determined a capacitor, as well as an oscillator and sync circuit card, required replacement. Exelon replaced these components, sent them for failure analysis, and restored the UPS to service.

On October 28, 2021, Exelon completed a corrective action program evaluation (CAPE) under IR 04448532. This evaluation ruled out the capacitor as a cause of the UPS failure. Exelon determined that the cause of the failure was a premature failure of the UPS-162A oscillator and sync circuit card. The evaluation found that the circuit card issue had potentially existed since the UPS circuit cards were last replaced and placed in service in July 2016. Exelon's CAPE documented that two days after placing the UPS in-service, IR 02699078 was written for observed UPS-162A frequency oscillations of 0.2 Hz and a lower than expected voltage. This IR was closed with no additional actions taken to troubleshoot or correct the abnormal condition. Exelon's CAPE determined that the organization failed to adequately address the documented frequency oscillations and generate a work order to investigate and repair the condition. Exelon also determined that procedure N1-EPM-UPS-003, "UPS Maintenance PM," was inadequate to address frequency oscillations and that system internal and external operating experience (OPEX) reviews were inadequate. Exelon received the vendor failure analysis report (FAR 21-005) on November 15, 2021. This report concluded, in part, that the failed oscillator and sync boards caused the inverter to phase drift and the UPS to lose sync within 15 minutes when temperatures exceeded 105 degrees Fahrenheit, as opposed to the normal temperature rating of 120 degrees Fahrenheit.

The inspectors reviewed Exelon's CAPE, failure analysis report, and procedures. Exelon's IR 02699078, which documented the observed frequency oscillations in 2016, also documented "Recommended Actions" to "determine if oscillations can lead to a fault in the UPS (could lead to a loss of RPS 11)." The inspectors found no documented answer to the recommended action above. The Functional Basis section of the IR states, "The fluctuation (0.25 Hz) is within the acceptance criteria for N1-EPM-UPS-003 (59.7-60.3 Hz). A walkdown was performed by EMD [electrical maintenance] and they did not identify an immediate concern with functionality. UPS-162A remains functional." However, Exelon's CAPE concluded that procedure N1-EPM-UPS-003 was inappropriately used to determine the functionality of UPS-162A, specifically that frequency oscillations, whether in the acceptance criteria band or not, are an abnormal condition and should not be accepted under any circumstance, as this is a sign of degradation and potential premature failure. The inspectors also noted that Exelon procedure PI-AA-120, "Issue Identification and Screening Process," Revision 11, Section 4.4.6, states, in part, to determine if the as-found operability and functionality of any system, structure, or component is affected by the condition and document the basis of the determination. Section 4.6.6 states, in part, to determine if any additional actions are necessary and route the issue to the responsible department to create actions.

Based on the information above, the inspectors determined that Exelon did not ensure that a CAQ associated with an identified deviation from the normal operating frequency of UPS-162A was promptly identified and corrected. Specifically, after performing maintenance and placing the UPS in service, Exelon documented an off-normal condition related to the UPS inverter frequency being lower than normal and oscillating yet closed this IR without properly evaluating and correcting the condition.

Corrective Actions: Exelon replaced the failed UPS oscillator and sync circuit cards, revised UPS maintenance procedures, added frequency oscillation observation to the system walkdown checklist, sent the failed circuit cards out for failure analysis, and generated a crew learning for timely OPEX reviews.

Corrective Action References: IR 04446321

Performance Assessment:

Performance Deficiency: Exelon's failure to ensure that a CAQ associated with an identified deviation from the normal operating frequency of UPS-162A was promptly identified and corrected is a performance deficiency that was within Exelon's ability to foresee and correct, and which should have been prevented.

Screening: The inspectors determined the performance deficiency was more than minor because it was associated with the Design Control attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, Exelon not ensuring that a CAQ associated with a safety-related UPS was promptly identified and corrected resulted in reduced UPS reliability, a half-scrum condition, an isolation of both emergency condensers, and an isolation of the RWCU system.

Significance: The inspectors assessed the significance of the finding using Appendix A, "The Significance Determination Process (SDP) for Findings At-Power." Using Exhibit 2 of Appendix A, the inspectors determined this finding was of very low safety significance (Green) because "Yes" was not answered to any of the screening questions.

Cross-Cutting Aspect: Not Present Performance. No cross-cutting aspect was assigned to this finding because the inspectors determined the finding did not reflect present licensee performance.

Enforcement:

Violation: 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," requires, in part, that measures shall be established to ensure that CAQs, such as deviations and nonconformances are promptly identified and corrected. Exelon's procedure PI-AA-120, "Issue Identification and Screening Process," states, in part, for CAQ to determine if the as-found operability and functionality of any system, structure, or component is affected by the condition and document the basis of the determination. The procedure also states to determine if any additional actions are necessary and route the issue to the responsible department to create actions.

Contrary to the above, between August 1, 2016, and September 25, 2021, Exelon did not ensure that a CAQ associated with an identified deviation from the normal operating frequency of UPS-162A was promptly identified and corrected. Specifically, on August 1, 2016, after performing maintenance and placing the UPS in service, Exelon documented an off-normal condition related to the UPS inverter frequency being lower than normal and oscillating but closed this IR without properly evaluating and correcting the condition resulting in the failure of the RPS UPS-162A and caused the plant to experience a half-scrum condition, an isolation of both emergency condensers, and an isolation of the RWCU system. Enforcement Action: This violation is being treated as an NCV, consistent with Section 2.3.2 of the Enforcement Policy.

Minor Performance Deficiency	71152
<p>Minor Performance Deficiency: The inspectors reviewed a CAPE completed by Exelon staff, and their identified corrective actions, following a series of issues in the implementation of the surveillance frequency control program, including a missed surveillance as a result of an inadequate evaluation. The missed surveillance was for the calibration of Unit 1 remote shutdown panel reactor vessel water level indication in accordance with the surveillance frequency control program. Exelon's CAPE included an extent of condition review of all completed surveillance frequency changes to ensure no other technical flaws existed. Corrective actions included ensuring future surveillance frequency changes are routed through regulatory assurance to verify the procedures align with the appropriate technical specification surveillance requirements. Exelon also established a checklist to be performed during the development of future surveillance frequency changes that includes the steps required to avoid missed surveillances.</p> <p>The inspectors reviewed the evaluation, extent of condition review, and relevant IRs and interviewed the surveillance frequency control program owner. Based on the documents reviewed and discussions with personnel, the inspectors determined Exelon's evaluation of the issue was adequate and provided for corrective action commensurate with the safety significance of the problem. Exelon's failure to perform the missed surveillance discussed above in the required timeframe is a performance deficiency.</p> <p>Screening: The inspectors determined the performance deficiency was minor. The inspectors evaluated the missed surveillance for significance in accordance with the guidance in IMC 0612, Appendix B, "Issue Screening," and Appendix E, "Examples of Minor Issues." The performance deficiency was minor because it did not adversely affect a cornerstone objective and following identification an appropriate risk assessment was developed and the surveillance successfully completed in accordance with Technical Specification Surveillance Requirement 4.0.3.</p> <p>Significance: The inspectors assessed the significance of the finding using Appendix A, "The Significance Determination Process (SDP) for Findings At-Power." This performance deficiency was of minor significance and, therefore, are not subject to enforcement action in accordance with the NRC's Enforcement Policy.</p>	

Minor Performance Deficiency	71152
<p>Minor Performance Deficiency: The inspectors performed a review of a recent UPS failure that occurred at Unit 1 on September 25, 2021. Exelon's CAPE, under IR 04448532, documented that UPS-162A experienced voltage and frequency perturbations (-5 VAC and 0.2 Hz from the normal values) which resulted in actuation of the RPS bus 11 underfrequency protective relaying. This actuation caused a loss and subsequent restoration of RPS bus 11 on UPS-162A which resulted in a half SCRAM, an isolation of both emergency condensers, and RWCU isolation. The inspector's reviewed this CAPE to assess Exelon's ability to adequately identify problems, evaluate the causes of the equipment issues, and resolve the issues in a timely manner.</p> <p>During the review, the inspectors noted one more than minor performance deficiency (PD) which is documented separately as an NCV in this report, and one minor PD, which is documented below.</p>	

Minor PD: Exelon procedure PI-AA-115, "Operating Experience Program," Revision 5, Section 4 for the receipt, screening, and processing of OPEX documents states, in part, to perform an initial screening to determine the appropriate OPEX evaluation significance, initiate an IR as applicable in Attachment 1, or if there is potentially new information that challenges the conservatism of current external event design assumptions, and retain relevant OPEX information in the ENGAGE Health notebooks in accordance with procedure ER-AA-2030, "Conduct of Equipment Reliability Manual." Procedure ER-AA-2030, Section 4.3.4 for OPEX and peer lessons learned states, in part, that engineers should read daily industry OPEX reports, review similar station IRs, and perform periodic OPEX searches on industry websites. In addition, the procedure discusses that the ENGAGE Health notebooks is where relevant OPEX should be retained and at a minimum updated semiannually. Attachment 2 of this procedure goes on to state that the engineer is responsible for initial OPEX reviews and the generation of IRs for required Level 3 OPEX reviews.

Contrary to these procedures, the inspectors found that Exelon's CAPE determined that, "The OPEX reviews documented in Engage Health for this system appear to be inadequate. More robust OPEX reviews may have allowed the frequency oscillations to be identified as a potential failure mechanism earlier. This contributed to the failure in this event." The inspectors noted that the CAPE generated an action to "generate a crew learning for timely OPEX reviews." Based on the external OPEX and the lack reviews and retention of the OPEX for the UPS system, the inspectors questioned Exelon about whether a "crew learning" was enough to correct this deficiency. The inspectors determined that the "crew learning" was an action that could correct the OPEX review and retention issues going forward but that the potential OPEX gap could remain unless system engineers conducted a "look back" to ensure previous OPEX was accurately captured. Exelon documented this in IR 04448532.

Significance: The inspectors assessed the significance of the finding using Appendix A, "The Significance Determination Process (SDP) for Findings At-Power."

Observation: Semi-Annual Trend	71152
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The inspectors evaluated a sample of issues and events that occurred from July 2021 through December 2021 to determine whether issues were appropriately considered as emerging or adverse trends. The inspectors verified issues were appropriately evaluated by Exelon staff for potential trends and addressed within the scope of the corrective action program or through department review.

The inspectors did not identify any new trends that could indicate a more significant safety issue. Exelon documented a trend in critical component failures during this evaluation period. This included the failure of the Unit 1 12 high pressure coolant injection controller, loss of RPS 11 following the failure of UPS-162A, the Unit 2 'C' service water pump discharge valve failure to open, and Division II emergency diesel generator jacket water leak. These issues were captured in trend IR 04459468 which resulted in Exelon personnel performing a work group evaluation for commonalities between the failures. Exelon also identified several instances of rework associated with supplemental workforce over a short period of time and documented a potential trend in IR 04439810. None of these cases resulted in inoperability or unavailability of safety systems. The inspectors also noted other minor potential adverse trends identified by Exelon staff in the areas of equipment challenges in both units' instrument air systems and failures of fire detectors at both units requiring additional walkdowns and patrols.

EXIT MEETINGS AND DEBRIEFS

The inspectors verified no proprietary information was retained or documented in this report.

- On January 20, 2022, the inspectors presented the integrated inspection results to Mr. Adam Schuerman, Plant Manager, and other members of the licensee staff.

THIRD PARTY REVIEWS

Inspectors reviewed the World Association of Nuclear Operators report that was issued during the inspection period.

DOCUMENTS REVIEWED

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.01	Corrective Action Documents	04198397		
		04445508		
		04461612		
	Procedures	N1-OP-64	Meteorological Monitoring	02100
		N2-OP-102	Meteorological Monitoring	02800
		OP-AA-108-111	Severe Weather and Natural Disaster Guidelines	023
	Work Orders	C93760254		
		C93762635		
		C93805503		
71111.04	Drawings	PID-11D	Piping and Instrumentation Diagram Service Water System	12
		PID-13A	Piping and Instrumentation Diagram Reactor Building Closed Loop Cooling Water	19
		PID-30A	Piping and Instrumentation Diagram Control Rod Drive Hydraulic System	29
		PID-30B	Piping and Instrumentation Diagram Control Rod Drive Hydraulic System	14
		PID-30C	Piping and Instrumentation Diagram Control Rod Drive Hydraulic System	15
		PID-31A	Piping and Instrumentation Diagram Residual Heat Removal System	27
		PID-43G	Piping and Instrumentation Diagram Fire Protection - Water	28
		PID-61B	Piping and Instrumentation Diagram Primary Containment Purge and Standby Gas Treatment	23
		PID-61C	Piping and Instrumentation Diagram Primary Containment Purge and Standby Gas Treatment	8
	Miscellaneous	Green NCV 05000410/2018002-01	Failure to Ensure Proper Control of the Standby Gas Treatment System Damper Valve, 2GTS-V2000, Within Procedures, Materials, and Design Controls	
	Procedures	N2-OP-13	LINEUPS, Reactor Building Closed Loop Cooling System	004
		N2-OP-30	Control Rod Drive	26
		N2-OP-31	Residual Heat Removal System	036T1

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		N2-OP-61B	Standby Gas Treatment	17
		N2-OP-61B-LINEUPS	Standby Gas Treatment - LINEUPS	0100
		PID-31B	Piping and Instrumentation Diagram Residual Heat Removal System	23
		PID-31C	Piping and Instrumentation Diagram Residual Heat Removal System	17
		PID-31E	Piping and Instrumentation Diagram Residual Heat Removal System	21
71111.05	Drawings	PID - 43G	Charcoal Bed Deluge System	28
	Fire Plans	N2-FPI-PFP-0201	Station Fire Protection Instruction	06
		N2-PFP-CB261	Control Building, EI 261/274	0
		N2-PFP-CB288	Control Building, EI 288	0
		N2-PFP-RX-328	Reactor Building, EI 328	0
71111.06	Procedures	N2-PRA-012	Nine Mile Point Unit 2 Probabilistic Risk Assessment Internal Flooding Analysis Notebook	3
71111.11Q	Miscellaneous	Reactivity Maneuver Plan NM1C25-3	October 2021 Quarterly Load Drop	0
		Reactivity Maneuver Plan NM2C18-9	October 2021 Sequence Exchange, Scram Time Testing, and Friction Testing	0
	Procedures	N1-ST-R1	Control Rod Scram Insertion Time Test	02600
		N2-OSP-RDS-@002	Channel Interference Testing	00600
71111.12	Corrective Action Documents	01986288		
		02005727		
		02468122		
		04389154		
		04412983		
		04413060		
		04446429		
	Corrective Action Documents	04464682		

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
	Resulting from Inspection			
	Miscellaneous	(a)(1) Determination for Unit 2 Service Water		Approved 12/3/21
		1-CRAC-F02	Maintenance Rule System Basis Document	
		Unit 2 Maintenance Rule System Basis Document	Automatic Depressurization	
		Unit 2 Maintenance Rule System Basis Document	Containment Inerting/N2	
		Unit 2 Maintenance Rule System Basis Document	Instrument Air	
		Unit 2 Maintenance Rule System Basis Document	Service Water	
		Procedures	N1-MMP-210-001	Control Room Chiller Maintenance
	Work Orders	C91883376		
		C93774298		
		C93785657		
		C93785742		
		C93786175		
71111.13	Procedures	OP-AA-108-117	Protected System Verification IAW	7
		OP-NM-108-117	Protected Equipment Program at Nine Mile Point	00500
		WC-AA-101-1004	On-Line Maintenance For Limiting Condition For Operation of Systems of Components	009
71111.15	Corrective Action Documents	02715754		
		04448532		
		04449792		
		04449971		
		04449971		
		04453026		

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
	Drawings	04458203		
		04459510		
		C-18026-C	Emergency Diesel Generator #102 Starting Air, Cooling Water Lube Oil and Fuel	28
		C-19410-C	Fold Out 10/10A - Elementary Wiring Diagram Diesel Generators #102 and #103 Control Ckts	47
		C-19589-C	Elementary Wiring Diagram Reactor Protection System (Emergency Cooling Channel #11)	51
	Procedures	C-19845-C	Elementary Wiring Diagram DC Valve Board 12	26
		N1-ST-M4A	Emergency Diesel Generator 102 and PB 102 Operability Test	03000
Work Orders	N2-OSP-ICS-Q@002	RCIC Pump and Valve Operability Test and System Integrity Test and ASME XI Functional Test and Analysis	01600	
71111.18	Drawings	C93808212		
		0001040209048	Control Diagram Shutdown System	13
	PID-104A	Piping and Instrumentation Diagram Standby Diesel Gen System	34	
	Engineering Changes	ECP-21-000437	EDG Governor Booster	0000
Work Orders	C93809772			
71111.19	Corrective Action Documents	04380928		
		044595101		
		04461978		
	Procedures	MA-AA-716-012	Post Maintenance Testing	26
		N1-EPM-GEN-150	4.16kV Breaker Inspection PM	01800
		N1-ST-Q1B	CS 121 Pump, Valve and SDC Water Seal Check Valve Operability Test	02300
		N2-MSP-HVK-2Y001	Control Building Chiller Performance Test	00000
		N2-OSP-EGS-M@001	Diesel Generator and Diesel Air Start Valve Operability Test - Division I and II	024T1
		N2-OSP-ICS-Q@002	RCIC Pump and Valve Operability Test and System Integrity Test and ASME XI Functional Test and Analysis	01600
Work Orders	C93658634			

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		C93658635		
		C93811429		
		C93812090		
		C93812875		
71111.22	Drawings	F-63019-C	Reactor Liquid Poison System ASME Section XI Boundary Diagram	17
	Procedures	N1-ST-Q4A	Liquid Poison Pump 11 and Check Valve Operability Test	01800
		N2-ISP-CSL-Q001	LPCS Pump Discharge Flow - Low (Bypass) Instrument Channel Functional Test	00700
		N2-OSP-LOG-S001	Shift Checks - Mode 1	03800
Work Orders	C93771647			
71151	Corrective Action Documents	04444544		
	Miscellaneous	N1-MSPI-001	Nine Mile Point 1 MSPI Basis Document	11
		N2-MSPI-001	Nine Mile Point 2 MSPI Basis Document	16
NEI 99-02		Regulatory Assessment Performance Indicator Guideline	7	
71152	Corrective Action Documents	04289904		
		04368005		
		04371766		
		04372127		
		04433486		
		04439810		
		04441194		
		04442220		
		04446429		
		04448532		
		04458203		
		04459468		
		4372131		
	Procedures	ER-AA-425	Implementation of Technical Specification Surveillance Frequency Control Program	004
N1-ISP-036-003		HI/LO Reactor Water Level Instrument Trip Channel Test/Calibration	01400	